

A critical analysis of the labels of processed complementary foods for infants and young children in South Africa against international marketing guidelines

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ABSTRACT

Motivation

Processed complementary food labels should protect and promote optimal breastfeeding and complementary feeding practices, important determinants of child survival, growth and development, and provide information regarding safe and appropriate use. However, there is a lack of formal guidelines from international normative bodies on the appropriate marketing of complementary foods. In recognition of the need for interim guidance, the Maternal, Infant and Young Child Working Group developed the *Draft Guide for Marketing Complementary Foods*, which provides practical guidance on how the marketing (including labelling) of processed complementary foods and supplements can be informed by the principles of the *International Code of Marketing of Breast-milk Substitutes* (the *Code*) and subsequent relevant World Health Assembly (WHA) resolutions in a way that supports optimal infant and young child feeding.

Aim

The aim of this study was to describe the extent to which the labelling practices (as a sub-set of marketing practices) of processed complementary food sold in South Africa comply with international guidance on the marketing of complementary foods that is fully aligned with the principles of the *Code* and subsequent relevant WHA resolutions (the *Draft Guide for Marketing Complementary Foods*).

Methods

Employing a cross-sectional study design, products were purchased from a sample of 17 retail grocery stores, three wholesale grocery stores, three retail pharmacies and three baby chain stores in the Gauteng, Western Cape and KwaZulu-Natal provinces from June to August 2011. Purchased products were then compared with a master list of complementary food products compiled through desk research, and missing products were identified and purchased. Label information was captured, then blinded and the order of products randomised. The *Draft Guide for Marketing Complementary Foods* was used to create a checklist with pre-set answers and accompanying criteria against which the captured labelling practices were then analysed.

Results

One hundred and sixty product labels of 35 manufacturers were analysed, none of which complied with all checklist criteria. Fifty-six (35%) labels did not provide an appropriate age of introduction, while 32 (20%) labels used phrases implying that the product was suitable for use before six months of age. Thirty-seven (23%) labels used images of infants appearing to be younger than six months. Only 20 (13%) labels carried a message regarding the importance of

exclusive breastfeeding for the first six months of life, and none provided a message on the importance of the addition of complementary foods from six months together with continued breastfeeding to two years or beyond. Eight (5%) labels recommended feeding the product in a bottle and two labels (1%) used an image of a feeding bottle. Nineteen (12%) labels suggested a daily ration too large for a breastfed child, and 32 (20%) potentially promote the manufacturer's infant formula. All labels provided label information in an appropriate language, but 102 (64%) labels relegated required label information to small text and were thus not easy to read. Only six (4%) labels failed to provide instructions for safe and appropriate use, while 44 (28%) did not include safety messages in their preparation and use instructions. Ten (6%) labels did not provide storage instructions, and 27 (17%) labels did not provide necessary warnings. Nutrient content claims, nutrient comparative claims, nutrient function/other function claims and reduction of disease risk claims were found on 126 (79%), eight (5%), 117 (73%) and 10 (6%) labels, respectively.

Conclusion

The labelling practices of processed complementary food labels in South Africa do not fully comply with international guidance on the marketing of complementary foods (*the Draft Guide for Marketing Complementary Foods*) and so do not sufficiently protect and promote optimal infant and young child feeding practices, revealing much room for improvement. Such guidance must be refined and formalised by international normative bodies and adopted into national legislation to assist manufacturers in ensuring that their complementary food labels meet an accepted standard and contribute towards the safe and appropriate use of processed complementary foods.

Key words

Complementary feeding, processed complementary foods, food labelling, breastfeeding, safety, infant, young child, marketing, the International Code.

OPSOMMING

Afrikaanse Titel: 'n Kritiese analise van die etikette van geprosesseerde komplimentêre voedsels vir babas en jong kinders in Suid-Afrika teenoor internasionale bemarkingsriglyne

Motivering

Geprosesseerde komplimentêre voedsletikette behoort optimale borsvoeding en komplimentêre voedingpraktyke te beskerm en bevorder, wat belangrike bepalers van oorlewing, groei en ontwikkeling van kinders is en inligting met betrekking tot veilige en toepaslike gebruik verskaf. Daar is egter 'n gebrek aan formele riglyne van internasionale normatiewe liggame oor die toepaslike bemarking van komplimentêre voedsels. In erkenning van die behoefte aan tussentydse leiding, het die *Maternal, Infant and Young Child Working Group* die sogenaamde *Draft Guide for Marketing Complementary Foods* ontwikkel, wat praktiese leiding verskaf oor hoe die bemarking (insluitend etikettering) van geprosesseerde komplimentêre voedsels en suplemente ingelig kan word deur die beginsels van die Internasionale Kode vir Bemarking van Borsmelks Substitute (die Kode) en daaropvolgende relevante *World Health Assembly* (WHA)-resolusies in 'n wyse wat optimale baba- en jongkindvoeding ondersteun.

Doel

Die doel van die studie was om te beskryf tot watter mate die etiketteringspraktyke (as 'n onderafdeling van bemarkingsbeginsels) van geprosesseerde komplimentêre voedsels te koop in Suid-Afrika voldoen aan internasionale leiding oor die bemarking van komplimentêre voedsels wat ten volle in lyn is met die beginsels van die Kode en daaropvolgende relevante WHA-resolusies (die *Draft Guide for Marketing Complementary Foods*).

Metodes

Deur 'n dwarsnit studie-ontwerp toe te pas, is produkte gekoop van 'n steekproef van 17 kleinhandelkruidenierswinkels, drie groothandelkruidenierswinkels, drie kleinhandelapteke en drie babakettingwinkels in die Gauteng, Wes-Kaap en KwaZulu-Natal provinsies van Junie tot Augustus 2011. Aangekoopte produkte is daarna vergelyk met 'n meesterlys van komplimentêre voedselprodukte saamgestel deur lessenaarnavorsing, en ontbrekende produkte is geïdentifiseer en aangekoop. Etiketinligting was vasgelê, daarna verblind en die volgorde van die produkte was ewekansig gekies. Die *Draft Guide for Marketing Complementary Foods* was gebruik om 'n kontrolelys te skep met voorafopgestelde antwoorde en gepaardgaande kriteria waarteen die vasgelegde etiketteringspraktyke daarna geanaliseer was.

Resultate

Eenhonderd-en-sestig produketikette van 35 vervaardigers is geanaliseer, waarvan geeneen aan al die kontrolelyskriteria voldoen het nie. Ses-en-vyftig (35%) etikette het nie 'n geskikte ouderdom van bekendstelling verskaf nie, terwyl 32 (20%) etikette frases gebruik het wat impliseer dat die produk geskik was vir gebruik voor 'n ouderdom van ses maande. Sewe-entertig (23%) etikette het afbeeldings van babas oënskynlik jonger as ses maande gebruik. Slegs 20 (13%) etikette het 'n boodskap ten opsigte van die belang van eksklusiewe borsvoeding vir die eerste ses maande van lewe verskaf en geeneen het 'n boodskap verskaf oor die belang van byvoeging van komplimentêre voedsels vanaf ses maande tesame met voortgesette borsvoeding tot twee jaar of ouer nie. Agt (5%) etikette het voeding van die produk in 'n bottel aanbeveel en twee etikette (1%) het 'n afbeelding van 'n voedingbottel gebruik. Negentien (12%) etikette het 'n daaglikse rantsoen wat te groot vir 'n borsgevoede kind is, voorgestel, en 32 (20%) het die vervaardiger se babaformule potensieel gepromoveer. Alle etikette het etiketinligting in 'n geskikte taal verskaf, maar 102 (64%) etikette het die vereiste etiketinligting se teks verklein en was dus nie maklik leesbaar nie. Slegs ses (4%) etikette het nie daarin geslaag om instruksies vir veilige en toepaslike gebruik te verskaf nie, terwyl 44 (28%) nie veiligheidsboodskappe in hul voorbereiding- en gebruikinstruksies ingesluit het nie. Tien (6%) etikette het nie bergingsinstruksies verskaf nie en 27 (17%) etikette het nie die nodige waarskuwings verskaf nie. Nutriëntinhoudaansprake, nutriëntvergelykende aansprake, nutriëntfunksie/ ander funksie-aansprake en vermindering van siekte-aansprake is op 126 (79%), agt (5%), 117 (73%) en 10 (6%) etikette, respektiewelik, gevind.

Gevolgtrekking

Die etiketteringspraktyke van geprosesseerde komplimentêre voedsletikette in Suid-Afrika voldoen nie ten volle aan die internasionale leiding vir die bemarking van komplimentêre voedsels nie (die *Draft Guide for Marketing Complementary Foods*) en beskerm en bevorder dus nie voldoende optimale voedingpraktyke van babas en jong kinders nie, wat baie ruimte vir verbetering aandui. Sodanige leiding moet verfyn en geformaliseer word deur internasionale normatiewe liggame en in nasionale wetgewing opgeneem word om vervaardigers by te staan in die versekering dat hul komplimentêre voedsletikette aan 'n aanvaarde standaard voldoen en tot 'n veilige en geskikte verbruik van geprosesseerde komplimentêre voedsels sal bydra.

Sleutelsterme

Komplimentêre voeding, geprosesseerde komplimentêre voedsels, voedsletikettering, borsvoeding, veiligheid, baba, jong kind, bemarking, die Internasionale Kode.

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LIST OF ABBREVIATIONS

AMPS	All Media and Products Survey
CAC	Codex Alimentarius Commission
CCNFSDU	Codex Committee on Nutrition and Foods for Special Dietary Uses
FAO	Food and Agriculture Organization of the United Nations
GAIN	Global Alliance for Improved Nutrition
GUM	Growing-up milks
HKI	Hellen Keller International
IBFAN	International Baby Food Action Network
IYCF	Infant and young child feeding
LSM	Living Standards Measures
MDG	Millennium development goals
MIYCN WG	Maternal, Infant and Young Child Nutrition Working Group
MNP	Micronutrient powder
RUSF	Ready-to-use supplemental food
RUTF	Ready-to-use therapeutic food
SA NDoH	South African National Department of Health
SAARF	South African Advertising Research Foundation
UN	United Nations
WHO	World Health Organization
WHA	World Health Assembly

CHAPTER 1: INTRODUCTION

1.1. BACKGROUND INFORMATION

The World Health Organization (WHO) recommends that infants be exclusively breastfed for the first six months of life, followed by the introduction of nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years of age or beyond (WHO, 2003). Such optimal infant and young child feeding (IYCF) practices play an essential role in child survival, growth and development, and are an important determinant of a child's ability to reach his or her full growth potential and of a nation's economic development and productivity (UNICEF, 2011a). Poor breastfeeding and complementary feeding practices are the foremost immediate cause of undernutrition during the first two years of life together with high rates of infectious diseases (PAHO, 2003), and their improvement has the potential to reduce under-five mortality rates annually by 13% and 6% respectively (Jones *et al.*, 2003).

A history of inappropriate marketing of breast-milk substitutes by the food industry (Aguayo *et al.*, 2003; Ergin *et al.*, 2012; Salasibew *et al.*, 2008; Taylor, 1998) has contributed to decreased breastfeeding rates in many parts of the world and associated increases in infant morbidity and mortality, especially in resource poor countries (Brady, 2012). In order to protect and promote the practice of breastfeeding, the World Health Assembly (WHA) adopted the *International Code of Marketing of Breast-milk Substitutes* (the *Code*) in 1981, a set of recommendations to regulate the marketing of breast-milk substitutes (e.g. infant formula), feeding bottles and teats (WHO, 2008a). Governments are urged to adopt the *Code* and subsequent relevant WHA resolutions into national legislation and to monitor its implementation (WHO, 1981).

Although complementary foods should complement rather than compete with breast milk in the diet, there are concerns that the inappropriate marketing of processed complementary foods could undermine optimal breastfeeding practices (Lutter, 2003; Piwoz *et al.*, 2003) by, for example, encouraging the early introduction of complementary foods or recommending an excessively large daily ration of the product that could interfere with continued breastfeeding (Quinn *et al.*, 2010). Incorrect use of complementary foods (such as excessive dilution, inadequate or excessive intake and unhygienic preparation) also has the potential to undermine rather than promote good infant and young child nutrition (Faber *et al.*, 2005; Lutter, 2003; PAHO, 2003). It is therefore crucial that manufacturers and distributors of complementary foods receive and implement guidance on how to market these products in a manner that protects and promotes exclusive and continued breastfeeding as well as the use of a variety of locally available and appropriate foods (Clark & Shrimpton, 2000). National governments should receive guidance on how to regulate, monitor and evaluate the marketing and distribution of processed complementary foods. Supporting optimal IYCF practices also requires ensuring that

complementary foods are nutritionally adequate – providing sufficient energy, protein and micronutrients to meet a growing child’s needs (WHO, 2003).

The *Code* offers little guidance on the marketing of complementary foods as they are not included in the scope of the *Code* unless marketed or represented as a partial or total breast-milk substitute (WHO, 2008a). The lack of formal guidelines from international normative bodies on the appropriate marketing of complementary food led the member states of the 65th WHA to request that the Director-General “provide clarification and guidance on the inappropriate promotion of foods for infants and young children cited in resolution WHA 63.23, taking into consideration the on-going work of the Codex Alimentarius Commission” (WHA, 2012).

In recognition of the need for interim guidance, the Maternal, Infant and Young Child Nutrition Working Group (MIYCN WG) of the 10 Year Strategy to Reduce Vitamin and Mineral Deficiencies developed a working paper titled *Using the Code of Marketing of Breast-Milk Substitutes to Guide the Marketing of Complementary Foods to Protect Optimal Infant Feeding Practices* (hereafter referred to as the *Draft Guide for Marketing Complementary Foods*) (Quinn *et al.*, 2010). The *Draft Guide for Marketing Complementary Foods* provides practical guidance on how the marketing of processed complementary foods and supplements can be guided by the *Code* and subsequent relevant WHA resolutions in a manner that supports optimal IYCF. This preliminary guidance, if field-tested, could lead to the generation of evidence on what is “appropriate” and “inappropriate” that can inform future guidelines (Quinn *et al.*, 2010). The formalisation of such evidence-based guidelines would assist governments in developing legislation protecting and promoting both optimal breastfeeding and complementary feeding practices.

The WHO plans to use country reviews of the *Draft Guide for Marketing Complementary Foods* (evaluating the usefulness and applicability of the *Code* to guide the marketing of complementary food) as part of an initial scoping of the process for developing a WHO framework for marketing of foods for children 6–23 months of age (FAO, 2011). It is hoped that such a framework will provide clarity on WHA resolution 63.23 which urges member states “to end inappropriate promotion of food for infants and young children” but fails to define inappropriate promotion (WHA, 2010).

The aim of this cross-sectional study was to describe the extent to which the labelling practices (as a sub-set of marketing practices) of processed complementary food sold in South Africa comply with current interim international guidance on the marketing of complementary foods that is fully aligned with the principles of the *Code* and subsequent relevant WHA resolutions (the *Draft Guide for Marketing Complementary Foods*). The study also aimed to generate

examples of existing complementary food labelling practices. Such information can be used to add to the body of evidence required to inform the development of formal guidelines on the marketing of complementary foods by international normative bodies, and assist in the development of South African legislation for the regulation of the marketing of foods for infants and young children.

1.2. PROBLEM STATEMENT AND RESEARCH QUESTION

WHA resolution 63.23 urges member states “to end inappropriate promotion of food for infants and young children” but fails to define “inappropriate promotion” (WHA, 2010). No international normative guidelines on the appropriate marketing of complementary foods are available, however the MIYCN WG have produced the *Draft Guide for Marketing Complementary Foods* that provides guidance on how the principles of the *Code* can inform the labelling and marketing of complementary foods in a manner that protects optimal IYCF (Quinn *et al.*, 2010). Additionally, the WHO intends to develop a framework for the marketing of foods for children 6–23 months of age but need to gather, or possibly generate, research on in-country labelling and marketing practices, including an evaluation of the usefulness and applicability of the approach taken by the MIYCN WG in the *Draft Guide for Marketing Complementary Foods* (FAO, 2011).

There is a lack of information on labelling practices of processed complementary foods for infants and young children sold in South Africa and their appropriateness in the context of the protection and promotion of optimal IYCF practices, i.e. exclusive breastfeeding for the first six months of life, followed by the introduction of safe and appropriate complementary foods together with continued breastfeeding to at least two years of age. The following research question was consequently formulated: To what extent do these labelling practices comply with current international guidance on the marketing of complementary foods, specifically the *Draft Guide for Marketing Complementary Foods*, which has yet to be field-tested in South Africa?

1.3. SIGNIFICANCE OF THE RESEARCH

1.3.1 Anticipated outcomes

- A cross sectional view of the South African processed complementary food market.
- A quantitative measure of the compliance of labels of complementary foods sold in South Africa with the *Draft Guide for Marketing Complementary Foods*.
- A record of current labelling practices of complementary foods sold in South Africa.

- Examples of complementary food labelling practices in South Africa that do/do not comply with international guidelines on the marketing of complementary foods, specifically the *Code* and subsequent relevant WHA resolutions as applied to complementary foods by the *Draft Guide for Marketing Complementary Foods*.
- Field-testing the *Draft Guide for Marketing Complementary Foods* (the sections pertaining to labelling only) as a tool for use by manufacturers/distributors of complementary foods in South Africa.
- Identification of shortfalls or gaps in the *Draft Guide for Marketing Complementary Foods* and recommendations for improvement, where applicable.

1.3.2 Value of the research

Field-generated information on “appropriate” and “inappropriate” complementary food labelling practices will add to a body of evidence that can be used to: clarify/define “inappropriate promotion of food for infants and young children” (WHA, 2010); inform the development of formal guidelines on the marketing of complementary foods by international normative bodies such as the WHO; and, inform the development of South African legislation for the regulation of the marketing of foods for infants and young children. Such guidelines and legislation are necessary to provide manufacturers/distributors of complementary foods with clear guidance on the appropriate labelling of complementary foods. Compliance with, and enforcement of, these regulatory measures is necessary to ensure that complementary food labels protect and promote optimal IYCF practices, provide consumers with adequate information for the correct, safe and timely use of the product, and ultimately contribute to the reduction of the under-five mortality rate in South Africa.

Such activities are of relevance in the South African context as a third draft of the *Regulations Relating to Foodstuffs for Infants and Young Children* (R184), which deals with the labelling, composition, packaging, manufacturing matters and promotion of foods for children from birth to three years of age and bottles, teats and cups, was published on 2 March 2012 by the South African National Department of Health (SA NDoH) for comment (South Africa, 2012). The findings of the research reported in this thesis, have provided evidence on complementary food labelling practices in South Africa as well as information on the appropriateness of these practices, which has been submitted to the SA NDoH to assist in finalising these regulations (see Addendum H).

This research is also of relevance in the international context. The WHO reported at the 33rd session of the Codex Committee on Nutrition and Foods for Special Dietary Uses (CCNFSDU)

in November 2011 that the *Draft Guide for Marketing Complementary Foods* is currently “being reviewed by countries to evaluate the usefulness and applicability of the *Code of Marketing of Breast-Milk Substitutes* to possibly guide the marketing of complementary foods as part of initial scoping of the process for developing a WHO framework for marketing of foods for children 6–23 months of age” (FAO, 2011). The results of this study will therefore add to the body of evidence required by the WHO to develop such guidelines/framework, thereby assisting in the fulfilment of its mandate to “provide clarification and guidance on the inappropriate promotion of foods for infants and young children”, as requested by the Member States of the 65th WHA (WHA, 2012). To the best of our knowledge, this study is the first to use the *Draft Guide for Marketing Complementary Foods* to assess the labels of complementary foods and to provide examples and quantitative data on complementary food labelling practices in a developing nation.

1.4. AIM, OBJECTIVES AND HYPOTHESIS

1.4.1 Aim

The aim of this cross-sectional study was to describe the extent to which the labelling practices (as a sub-set of marketing practices) of processed complementary food sold in South Africa comply with international guidance on the marketing of complementary foods that is fully aligned with the principles of the *Code* and subsequent relevant WHA resolutions (the *Draft Guide for Marketing Complementary Foods*).

1.4.2 Specific objectives

- 1) To critically analyse the labels of processed complementary foods sold in South Africa against labelling guidance provided in:
 - The MIYCN WG’s *Draft Guide for Marketing Complementary Foods*, which applies the principles of the *Code* and subsequent relevant WHA resolutions to the marketing of complementary foods; and
 - WHA Resolution 63.23, which was passed after the publication of the *Draft Guide for Marketing Complementary Foods*.
- 2) To generate examples of complementary food labelling practices by documenting existing practices of South African complementary food labels.

1.4.3 Hypothesis

This study will test the hypotheses that the labelling practices of processed complementary foods in South Africa do not fully comply with international guidance on the marketing of complementary foods (the *Draft Guide for Marketing of Complementary Foods*).

1.5. OVERVIEW OF THE DISSERTATION

This mini-dissertation is written in chapter format:

- Chapter 1 provides background information on the study, presenting the problem statement and research question, the significance of the research, aims, objectives and hypothesis and listing the affiliation and role of each co-worker in this study.
- Chapter 2 presents of a comprehensive literature study, covering relevant aspects of complementary feeding, the global and South African complementary food market, the potential role for processed complementary foods, international and national guidance on the marketing of complementary foods, and the labelling of processed complementary foods, including the function of food labels, the importance of appropriate labelling and as well as existing labelling practices.
- Chapter 3 provides a detailed methodology, describing the manner in which processed complementary food labels were obtained and analysed against the *Draft Guide for Marketing Complementary Foods*.
- Chapter 4 presents the results obtained from the analysis of the labels.
- Chapter 5 consists of the discussion, conclusion and recommendations related to the study findings.
- The addenda provide examples of letters requesting information for use in the study that were sent to manufacturers/distributors (Addendum A) and retailers/wholesalers (Addendum B) of complementary foods. The data capture key (Addendum C) provides clarification (examples, definitions of terms used and instructions) on the kind of label information to be captured in the data capture form. The labelling practices checklist (Addendum D) presents the questions, possible answers and criteria set for each of the possible answers against which labels of complementary foods were assessed. Addendum E is an alternate version of the article entitled “Field-testing of guidance on the appropriate labelling of processed complementary foods for infants and young children in South Africa” (Sweet *et al.*, 2012), which is based on the methodology and results of this mini-dissertation, and provides insight into the usefulness of the *Draft Guide for Marketing Complementary Foods* as a tool for use by manufacturers and national governments for guiding the appropriate labelling of complementary foods. The

version presented in Addendum E provides a more detailed methodology than was possible in the final published version. A full list of each kind of nutrition and health claim and non-nutrition/health claims found on the labels of complementary foods included in the study is provided in Addendum F and Addendum G, respectively. Addendum H provides the comments on the South African draft *Regulations Relating to Foodstuffs for Infants and Young Children* (R184), based on the results of this mini-dissertation, that were submitted to the SA NDoH in May 2012.

1.6. LIST OF CO-WORKERS

The affiliation and role of each co-worker in this study is provided in Table 1.1.

Table 1.1 Research team and their role in the study

Team Member	Affiliation	Role in Study
Mrs L Sweet (Dietitian)	Centre of Excellence for Nutrition, North-West University, Potchefstroom	Part-time M. Sc. student Designed and planned the study, obtained the literature, performed the pilot test, collected, analysed and interpreted data, and documented the study
Prof. JC Jerling (Nutritionist)	Centre of Excellence for Nutrition, North-West University, Potchefstroom	Supervisor of M. Sc. Mini-dissertation Provided guidance to the student at all stages of the study
Dr A van Graan (Dietitian)	Centre of Excellence for Nutrition, North-West University, Potchefstroom	Co-supervisor of M. Sc. Mini-dissertation Provided guidance to the student at all stages of the study and assisted with data collection
Miss JM Badham (Dietitian)	JB Consultancy, Johannesburg	Assistance with classification of claims made on complementary food labels
Mrs M Byers (Dietitian and Food Technologist)	Chill-e Food Consultants, Port Elizabeth	Assistance with classification of claims made on complementary food labels
Mrs D Powell (Nurse)	Freelancer, Johannesburg	Assistance with data capture

CHAPTER 2: LITERATURE REVIEW

2.1 INTRODUCTION

2.1.1 Trends in child mortality and progress toward MDG 4

Of the 7.6 million children under the age of five that died worldwide in 2010, nearly half (3.7 million) lived in Sub-Saharan Africa – a region which is home to only 12% of the world's population (UNICEF, 2012). Since 1990, the global under-five mortality rate has dropped by one third (35%) from 88 deaths per thousand live births to 57 in 2010, and the developed regions as well as many of the developing regions have seen at least a 50% reduction, with the exception of Caucasus and Central Asia, Southern Asia, Sub-Saharan Africa, and Oceania (UN IGME, 2011).

The Millennium Development Goals (MDGs), which were set and adopted by member states of the United Nations (UN) in 2001, reflect global commitment to improved infant and young child survival, health and nutrition status (UN, 2001). MDG 4 calls for the reduction by two-thirds, between 1990 and 2015, of the mortality rate of children under five years of age (UN, 2001). Despite the substantial progress made since 1990, the rate of decline in the under-five mortality rate at a global level is insufficient to meet the 2015 target (UN IGME, 2011).

In South Africa, the under-five mortality rate has decreased by a mere 5%, from 60 deaths per thousand live births in 1990 to 57 in 2010 (UNICEF, 2012), making the achievement of the 2015 target of 20 deaths per thousand live births highly unlikely. This lack of progress has been attributed primarily to the impact of HIV and AIDS (Republic of South Africa, 2010). In order to reverse this trend, there is an urgent need for the South African government to target the most important causes of mortality in children under the age of five years and to invest increasingly in interventions that maximise returns (Friberg *et al.*, 2010).

2.1.2 Infant and young child feeding and child mortality

Most under-five deaths are due to preventable causes, including diarrhoea, pneumonia, malaria, HIV/AIDS, injuries and measles, as well as a group of causes resulting in neonatal deaths (Black *et al.*, 2003; Black *et al.*, 2010). Although these conditions are considered the main cause of death, undernutrition is the underlying cause (including stunting, severe wasting, intrauterine growth restriction, micronutrient deficiencies and suboptimal child feeding practices) of about 35% of all under-five deaths (Black *et al.*, 2003; Black *et al.*, 2008). Poor breastfeeding and complementary feeding practices are the foremost immediate causes of undernutrition during the first two years of life, together with high rates of infectious diseases (PAHO, 2003).

Suboptimal breastfeeding, particularly non-exclusive breastfeeding for the first six months of life, is estimated to result in 1.4 million deaths and 10% of the disease burden in children younger than five years (Black *et al.*, 2008). Children who are not breastfed for the first five months of life are 14.4 times more likely to die (all-cause mortality) than children who are exclusively breastfed, while children who are not breastfed from 6-23 months of age are 3.7 times more likely to die than children who receive continued breastfeeding (Black *et al.*, 2008). And yet, only 37% of the world's infants are exclusively breastfed for the first six months of life (UNICEF, 2012). In Sub-Saharan Africa only 33% of infants are exclusively breastfed for the first six months (UNICEF, 2012), while in South Africa, the rate is 8% of infants – one of the lowest in the world (Department of Health, 2007). The reasons for this low rate in South Africa are complex, but are believed to include the lack of promotion of breastfeeding owing to high HIV prevalence, the provision of free formula milk through the PMTCT programme, longstanding cultural practices and the support of formula milk through the government protein-energy malnutrition scheme (Doherty *et al.*, 2011).

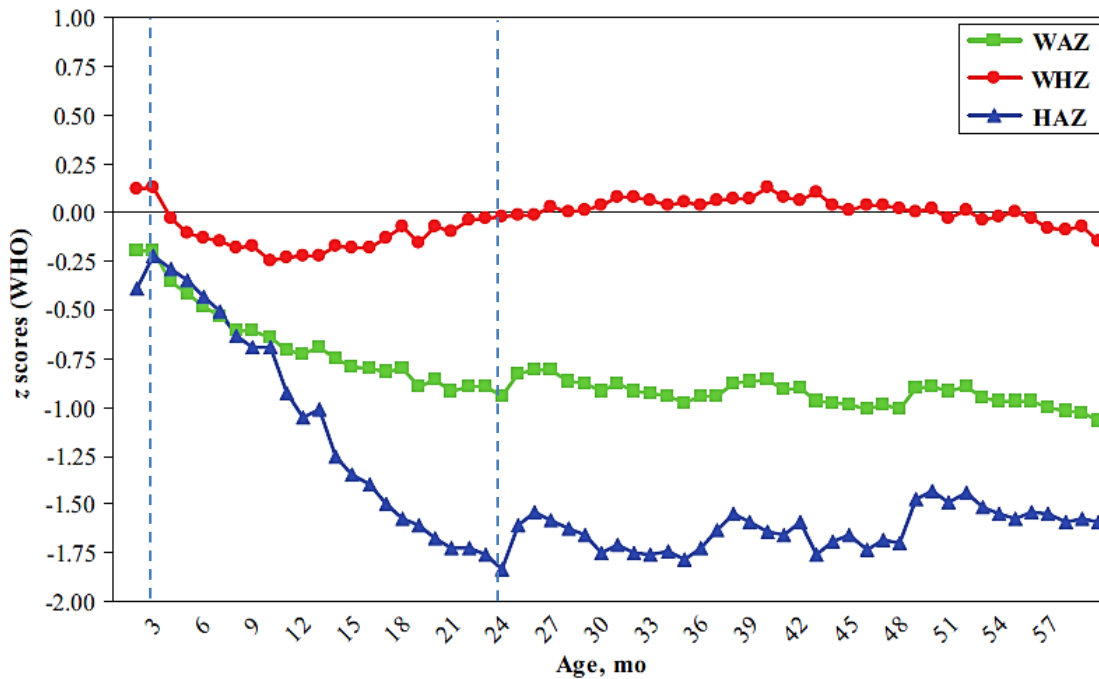
It is estimated that high rates of exclusive breastfeeding during the first six months of life followed by continued breastfeeding to at least two years of age, plus improved complementary feeding practices, have the potential to reduce under-five mortality rates by almost a fifth (13% and 6% respectively) annually (Jones *et al.*, 2003).

2.1.3 Infant and young child feeding and child growth, development and long-term outcomes

Optimal IYCF plays an important role not only in child survival, but also in growth, development, long-term health and a nation's economic development and productivity (UNICEF, 2011a). The period defined by pregnancy and the first two years of life represents a critical "window of opportunity" for preventing childhood undernutrition (Victora *et al.*, 2010). A recent analysis of growth-faltering patterns of children in 54 low- and middle-income countries confirmed that children from birth to six years are most vulnerable to undernutrition (manifested as stunting, wasting or underweight) between 3 and 18-24 months of age (Figure 2.1) (Victora *et al.*, 2010). After birth, children's ability to grow optimally is dependent on the adequacy of their dietary intake in meeting their high demand for nutrients, and their exposure to infectious diseases, such as diarrhoea, which have their peak incidence during the first two years (PAHO, 2003; UNICEF, 2011a). Stunting within the first two years of life leads to damage that is often irreversible, including lower attained schooling, shorter adult height, reduced adult income and decreased birth weight of offspring, thus impacting on future productivity, economic development and the next generation (Victora *et al.*, 2008). Children who are undernourished during the first two years of life and who gain weight rapidly later in childhood and in

adolescence are additionally at high risk of chronic diseases related to nutrition (Victora *et al.*, 2008). Therefore, interventions aimed at preventing undernutrition during the critical window period, by improving IYCF, need to be scaled up if sustainable achievements in child survival, growth and development as well as national economic development are to be attained (Dewey & Adu-Afarwuah, 2008; UNICEF, 2011a; Victora *et al.*, 2010).

Figure 2.1 Mean anthropometric z-scores according to age for 54 low- and middle-income countries (1994-2007), relative to WHO standards



HAZ, height-for-age; mo, months; WAZ, weight-for-age; WHO, World Health Organization; WHZ, weight-for-length. Adapted from Victora *et al.* (2010)

2.1.4 Interventions for improving infant and young child feeding

The *Global Strategy for Infant and Young Child Feeding* (WHO, 2003) defines optimal IYCF as exclusive breastfeeding for the first six months of life followed by the introduction of safe and nutritionally adequate complementary foods while breastfeeding continues for up to two years of age or beyond. Strategies aimed at promoting optimal complementary feeding practices include ensuring access to and promoting the use of a wide diversity of nutritionally adequate locally available foods as well as low-cost complementary foods prepared with locally available ingredients using suitable small-scale production technologies in community settings (WHO, 2003). Industrially processed complementary foods are also considered to be an option for some mothers who can afford them and have the knowledge and facilities to prepare and feed them safely, and fortified foods and nutrient supplements may be necessary in some

populations to meet the micronutrient needs of older infants and young children (UNICEF, 2011a; WHO, 2003).

2.1.5 The role of processed complementary foods

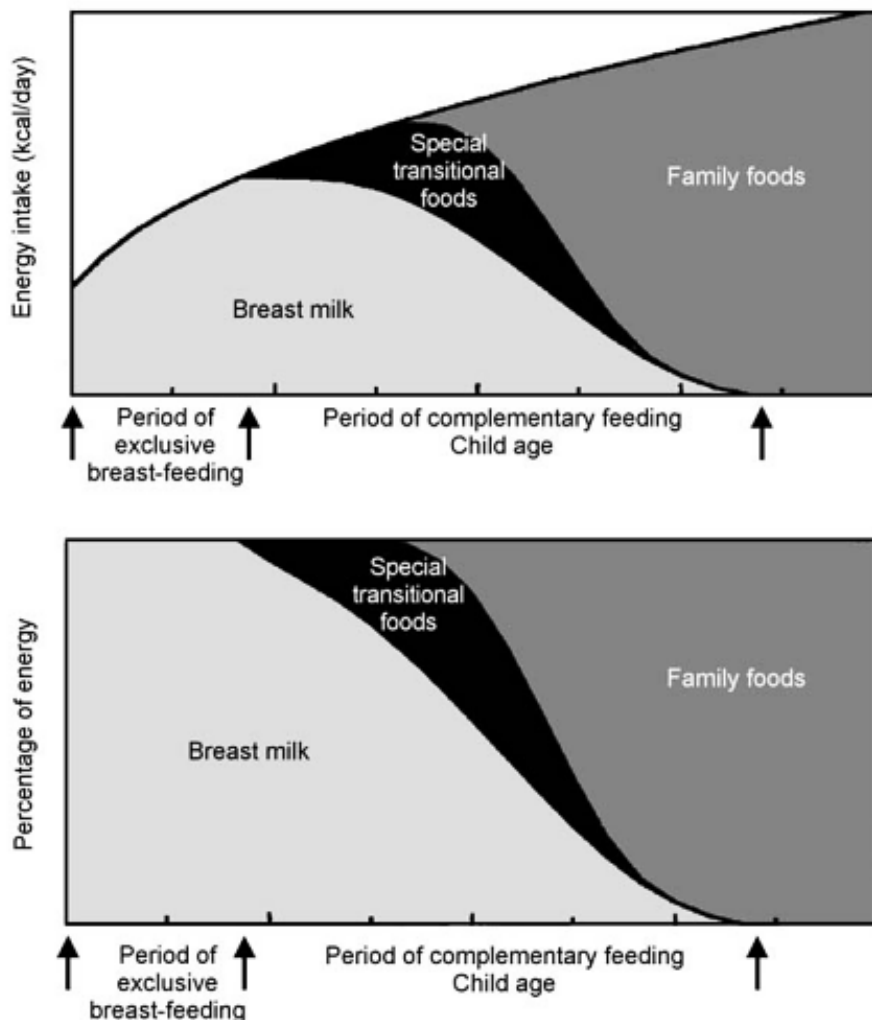
While high quality, safe and affordable processed fortified complementary foods and supplements have a role to play in filling the nutrient gaps in the diets of older infants and young children, it is important that they should form part of a broader strategy to improve infant and young child nutrition. A history of inappropriate marketing of breast-milk substitutes by the food industry (Aguayo *et al.*, 2003; Ergin *et al.*, 2012; Salasibew *et al.*, 2008; Taylor, 1998) has resulted in concern that the marketing of processed complementary foods will negatively impact on breastfeeding practices and undermine the use of local foods (Lutter, 2003; Piwoz *et al.*, 2003). Incorrect use of these products (such as excessive dilution, inadequate or excessive intake and unhygienic preparation) also has the potential to undermine rather than promote good nutrition (Faber *et al.*, 2005; Lutter, 2003).

It is therefore crucial that manufacturers and distributors of complementary foods receive and follow guidance on how to market these products in a manner that protects and promotes exclusive and sustained breastfeeding as well as the use of a variety of locally available foods (Clark & Shrimpton, 2000). On an international level, such guidance exists for breast-milk substitutes, feeding bottles and teats in the form of the *Code* and subsequent relevant WHA resolutions, but much less guidance is available for the appropriate marketing of complementary foods.

2.2 COMPLEMENTARY FEEDING

Complementary feeding is defined as “the process starting when breast milk alone or infant formula alone is no longer sufficient to meet the nutritional requirements of infants, and therefore other foods and liquids are needed, along with breast milk or a breast-milk substitute” (WHO, 2008b). The target range for complementary feeding is generally taken to be from 6-24 months of age, although breastfeeding may continue beyond two years (PAHO, 2003). Complementary feeding is thus a period of transition during which an infant progresses from a diet consisting only of breast-milk or infant formula to the family diet (see Figure 2.2).

Figure 2.2 Contribution of different food sources to young children’s energy intake (kcal/day and percentage of energy) in relation to age



Source: WHO (1998a)

2.2.1 Complementary foods

Complementary foods are defined as “any food, whether manufactured or locally prepared, suitable as a complement to breast milk or to infant formula, when either becomes insufficient to satisfy the nutritional requirements of the infant” (WHO, 2008b). Complementary foods may be specifically designed to meet the particular nutritional or physiological needs of the young child, in which case they may be described as special transitional foods (see Figure 2.2). Examples of special transitional foods include foods prepared specially for the infant by the mother, usual family foods that have been modified to make them suitable for infants and young children (WHO, 2000) as well as industrially processed complementary foods (also referred to as commercially produced complementary foods) that are manufactured and sold specifically for infants and young children. Complementary foods given to the young child that are the same as the foods consumed by rest of the family are considered to be family foods (WHO, 1998a).

At six months of age, infants are able to eat mashed, puréed and semi-solid foods. By eight months, most infants are also able to eat “finger foods” (snacks that children can eat alone), and by 12 months most infants can eat “family foods” (foods of a solid consistency as eaten by the rest of the family) (PAHO, 2003).

Processed complementary foods include a wide variety of products, such as:

- Beverages e.g. baby juices, teas, herbal drinks and mineral/bottled water (IBFAN, 2007; Quinn *et al.*, 2010);
- Foods e.g. cereals/porridges/gruels; biscuits and rusks; jarred/ready-to-eat fruit, vegetable, meat and/or fish-based purées; baby meals; and milk-based desserts (IBFAN, 2007; Quinn *et al.*, 2010).

Public health strategies for improving the nutritional status of older infants and young children include the following categories of products (Quinn *et al.*, 2010):

- Fortified blended foods: “Any prepared porridge or cereal fortified with micronutrients to help fulfil the nutritional needs of young children after the age of six months, in addition to breast milk. These foods are intended to replace traditional local porridges or paps when they are inadequate to fulfil nutritional needs, or to be given to children in addition to such foods, for example in government feeding programs”.
- Complementary food supplements: “Fortified food-based products meant to be added to other foods or eaten alone to improve macronutrient and micronutrient intake. Some examples include LNS (lipid-based nutrient supplements) such as fortified peanut spread, and fortified full fat soy powder”.

- Micronutrient powders (MNPs): “*Pre-packaged combinations of micronutrients intended to be added to local porridges, paps or family foods to address gaps in micronutrients and improve the nutritional status of children (after the age of six months)*”. Note that micronutrient powders do not fall under the definition of complementary foods under the *Code* (Quinn *et al.*, 2010).

It is clear from the *Code*'s definition of complementary foods (WHO, 1981) that infant formula is not classified as a complementary food. However, follow-up formula and the more recently introduced toddler milks/growing-up milks (GUMs)/first milks were not named as breast-milk substitutes by the *Code*, possibly because there were hardly any such products on the market when the *Code* was drafted (IBFAN, 2008). Subsequent to the adoption of the *Code*, WHA resolution 39.28 of 1986 (WHA, 1986) stated that “the practice being introduced in some countries of providing infants with specially formulated milks (so-called ‘follow-up milks’) is not necessary” but no further mention of these products has been made in subsequent WHR resolutions.

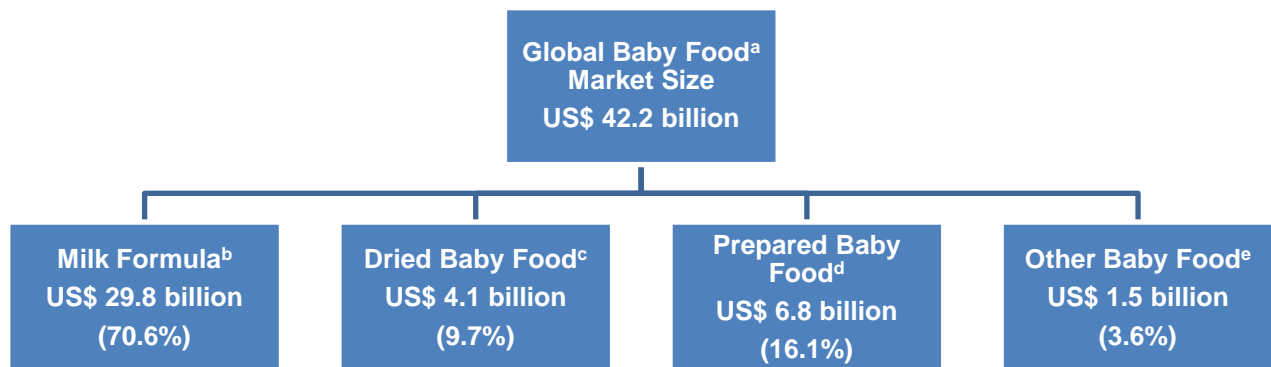
The *Codex Standard For Follow-Up Formula* (CODEX STAN 156-1987) defines said product as a food intended for use as a liquid part of the weaning diet for the infant from the sixth month on and for young children, and goes on to state that such products are not breast-milk substitutes and shall not be presented as such (Codex Alimentarius, 1987). However, some argue that, because infants should be breastfed for up to two years or beyond, any milk products (e.g. follow-up formula and GUMs) marketed or represented as suitable for use before two years of age will replace the part of the diet best fulfilled by breast milk and are thus breast-milk substitutes (Clark & Shrimpton, 2000; IBFAN, 2008). This controversy was highlighted by New Zealand at the thirty-third session of the CCNFSDU in November 2011 as one of the reasons why the *Codex Standard for Follow-Up Formula* should be opened for review (New Zealand, 2011). The CCNFSDU agreed to consider the revision of this standard at its next session in December 2012 (Codex Alimentarius, 2011). Additionally, the WHO briefing note on “Follow-Up Formula in the Context of the International Code of Breast-milk Substitutes”, which stated that follow-up formula was, strictly speaking, not a breast-milk substitute (WHO, 2001a), has been withdrawn and is currently being considered for revision by the WHO pending review of new and emerging information on the subject (WHO, 2012a). Thus it is unclear at the present time whether or not follow-up formula and toddler milks/GUMs/first milks marketed for children younger than two years of age should be classified as complementary foods.

2.2.2 Processed complementary food market

The global market

The size of the global baby food market (breast-milk substitutes and complementary foods) was US\$42.2 billion in 2011 (see Figure 2.3) and is forecast to reach US\$55 billion by 2015, with the highest compound annual growth rate (CAGR) expected from Eastern Europe, Asia Pacific, the Middle East and Africa (Euromonitor cited by Agriculture and Agri-Food Canada, 2011; Euromonitor International, 2011). Breast-milk substitutes account for 70.6% of the retail value of the global baby food market, while complementary foods account for the remaining 29.4%. As shown in Table 2.1, the global complementary food market grew between 6.9% and 9.5% in retail value during 2010–11, with the greatest growth seen in dried baby foods (products which require the addition of water before consumption), followed by prepared baby food (baby products sold in jars, cans or retort flexible pouches which do not require any cooking preparation other than heating) and other baby food (any other complementary foods marketed for babies) (Euromonitor International, 2011).

Figure 2.3 The global baby food market size (retail value in US Dollars) in 2011 by product category



Adapted from Euromonitor (2011)

^a Baby Food: The aggregation of milk formula, prepared, dried and other baby food.

^b Milk Formula: This is the aggregation of standard, follow-on, toddler and special milk formula.

^c Dried Baby Food: Products which require the addition of water before consumption, and which are usually sold in packets. Cereals and dehydrated soups are also included. Leading global brands include Nestlé (Nestlé), Cerelac (Nestlé), Mucilon (Nestlé), Milupa (Danone), Nestum (Nestlé), Heinz (Heinz), Quaker (PepsiCo), Nutricia (Danone).

^d Prepared Baby Food: Baby products sold in jars, cans or retort flexible pouches which do not require any cooking preparation other than heating. Includes puréed food, yoghurts, chilled desserts, soup, desserts, ice cream marketed for babies. Leading global brands include Gerber (Nestlé), Plasmon (Heinz), Blédina (Danone), Hipp (Hipp GmbH & Co Vertrieb KG), Nestlé (Nestlé), Heinz (Heinz), Mellin (Danone), Nipiol (Heinz).

^e Other Baby Food: Any other products marketed for babies are included here. Examples may include baby rusks, teething biscuits, baby fruit juices etc. Leading global brands include Gerber (Nestlé), Plasmon (Heinz), Milupa (Danone), Hipp (Hipp GmbH & Co Vertrieb KG), Nestlé (Nestlé), Alete (Nestlé).

Table 2.1 Year-on-year historic retail value growth (%) of the global and South African baby food market per product category

	2006-07	2007-08	2008-09	2009-10	2010-11
World					
Baby food ^a :	16.6	14.1	2.4	10.1	9.6
Dried baby food	17.2	14.9	-0.1	10.7	9.5
Prepared baby food	15.5	10.9	-3.9	4.5	8.2
Other baby food	16.6	10.9	-4.9	4.5	6.9
South Africa					
Baby food ^a :	11.1	17.7	13.4	14.0	10.0
Dried baby food	13.0	14.0	16.0	15.0	14.0
Prepared baby food	12.0	11.0	13.0	14.0	3.0
Other baby food	4.0	6.0	8.0	9.0	7.0

^aIncludes milk formula.

Source: Euromonitor International (2011)

Owing to low birth rates and static market conditions in developed countries, the baby food industry is increasingly reliant on emerging markets in developing economies such as Brazil, China, Argentina and Russia, which grew by more than 10% each in 2010 (Agriculture and Agri-Food Canada, 2011). A shift towards processed complementary foods both in developed and developing countries has been attributed to factors such as convenience and simplicity for time-constrained modern parents, as well as parents' awareness regarding the importance of nutrition and their desire to feed their children products that enhance their development during the early stages of life (Agriculture and Agri-Food Canada, 2011).

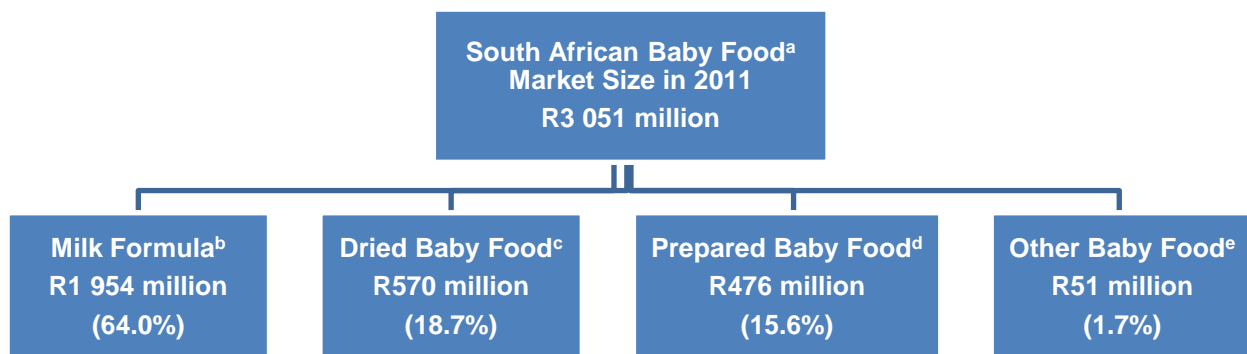
The South African market

In 2006 the baby food market was the fastest growing food sector in South Africa (RNCOS, 2007), and accounted for 1.6% of the total household expenditure on food and non-alcoholic beverage consumption (Stats SA, 2008; Euromonitor International, 2011). The trends data of the South African Advertising Research Foundation (SAARF) indicate that 10% of the South African adult population were purchasing infant cereal and other baby foods (excluding infant formula) in 2007 (BFAP, 2008).

The baby food market experienced strong growth (10% year-on-year growth for 2010-11) despite the recent economic downturn, to reach a value of R3.1 billion (Figure 2.4) in 2010-11, with breast-milk substitutes accounting for 64% of the market and complementary foods for 36% (Euromonitor International, 2011). Dried baby food experienced the fastest value growth of 14% in 2010-11, followed by other baby food and prepared baby food (Table 2.1) (Euromonitor International, 2011). South African baby food sales volumes for 2011 are presented in Table 2.2 (Euromonitor International, 2011). During 2010-11 both value and volume growth for baby foods were down by 4% and close to 3% respectively when compared with 2009-10, as

consumers are still experiencing the effects of the economic downturn and are more discerning when it comes to buying products that are considered “luxuries” (Euromonitor International, 2011). Prepared baby food experienced substantially slower growth in 2010–11 (Table 2.1) in comparison with the previous four years as consumers are either making their own home-cooked meals (replacing jars) or substituting these products with food that is suitable for the whole family (Euromonitor International, 2011).

Figure 2.4 The South African baby food market size (retail value in South African Rands) in 2011 by product category



Adapted from Euromonitor (2011)

^a Baby Food: The aggregation of milk formula, prepared, dried and other baby food.

^b Milk Formula: This is the aggregation of standard, follow-on, toddler and special milk formula.

^c Dried Baby Food: Products which require the addition of water before consumption, and which are usually sold in packets. Cereals and dehydrated soups are also included.

^d Prepared Baby Food: Baby products sold in jars, cans or retort flexible pouches which do not require any cooking preparation other than heating. Includes puréed food, yoghurts, chilled desserts, soup, desserts, ice cream marketed for babies.

^e Other Baby Food: Any other products marketed for babies are included here. Examples may include baby rusks, teething biscuits, baby fruit juices etc.

Table 2.2 Volume (tonnes) of sales of baby food in South Africa by product category in 2011

Product category	Volume (tonnes) of sales in 2011
Dried baby food ^a	9,697.8
Prepared baby food	10,102.7
Other baby food	1,001.6

^aVolumes are shown in terms of “as sold” volume and are not reconstituted volumes.

Source: Euromonitor International (2011)

Nestlé South Africa, the leading manufacturer of breast-milk substitutes in South Africa, held a value share of almost 40% of the South African baby food market in 2010, followed by Tiger Brands with a 25% value share, due to its Purity brand (complementary food only) (Euromonitor International, 2011).

An annual average constant value growth of 4% and an annual average volume growth of 3% are forecast for South African baby food between 2011 and 2016 (Euromonitor International, 2011). Health and wellness and convenience remain key trends in the South African baby food market and it is expected that, considering the increasing number of working mothers in South Africa, nutritious products that are quick and easy to use will fare best. Single-serve sachets and pouches are gaining popularity and it is anticipated that such packaging innovations will make baby food products more affordable across a wider range of consumers (Euromonitor International, 2011).

2.2.3 Defining optimal infant and young child feeding

The *Global Strategy for Infant and Young Child Feeding* (WHO, 2003) defines optimal IYCF as follows:

“As a global public health recommendation, infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health. Thereafter, to meet their evolving nutritional needs, infants should receive safe and nutritionally adequate complementary foods while breastfeeding continues for up to two years of age or beyond.”

Ensuring that the nutritional needs of infants are met during the vulnerable transition period from exclusive breastfeeding to family foods requires that complementary foods be:

- *timely* - introduced at six months of age when the need for energy and nutrients exceeds what can be provided by exclusive breastfeeding;
- *adequate* – given in amounts, frequency, consistency and using a variety of foods that, together with continued breastfeeding, provide enough energy, protein and micronutrients to meet the growing child’s nutritional requirements;
- *safe* - hygienically stored, prepared and fed (with clean hands and utensils and not bottles and teats), in order to minimise the risk of contamination with pathogens;
- *properly fed* - given according to a child’s signals of appetite and satiety, and ensuring that meal frequency and feeding method (using fingers, spoon or self-feeding) are suitable for the child’s age (WHO, 2012b; WHO, 2003).

The PAHO (2003) *Guiding Principles for Complementary Feeding of the Breastfed Child* identifies 10 “Guiding Principles” (Box 2.1) that are intended to guide policy and programmatic action at global, national, and community levels. These scientifically based guidelines, the result of several technical consultations and documents on complementary feeding, are intended to be adapted to local feeding practices and conditions and used by stakeholders in IYCF to promote an environment conducive to optimal breastfeeding and complementary feeding practices and to develop culturally appropriate messages for such practices. The *Guiding Principles for*

Complementary Feeding of the Breastfed Child target breastfed children during the first two years of life and apply to normal, full-term infants, including infants of low birth weight born after 37 weeks of gestation. A parallel set of *Guiding Principles for Feeding Non-Breastfed Children 6–24 Months of Age* is also available (WHO, 2005).

It follows then that sub-optimal or inappropriate IYCF practices are those that are not in compliance with the *Guiding Principles for Complementary Feeding of the Breastfed Child* and the *Global Strategy for Infant and Young Child Feeding* (WHO, 2003) and therefore undermine adequate nutrition during the first two years of life. Examples of poor feeding practices include: the early or late introduction of complementary foods; a lack of continued breastfeeding from 6–24 months; a lack of responsive feeding (e.g. passive feeding style, lack of supervision during feeding or force-feeding); poor hygiene and food handling during food preparation, feeding and storage; food consistency inappropriate for child's age; the use of feeding bottles; provision of inadequate or excessive amounts of complementary foods; provision of complementary foods too frequently or infrequently; and failure to adjust the diet of the ill child during and after illness (PAHO, 2003). The *Guiding Principles for Complementary Feeding of the Breastfed Child* also discuss the challenge of poor nutritional quality of the complementary diet, as characterised by diets with: too little variety; insufficient micronutrients (e.g. plant-based complementary diets without nutrient supplements or fortified products); insufficient fat, especially essential fatty acids; beverages with low nutrient value (e.g. tea, coffee, sugary drinks and excessive fruit juice consumption) (PAHO, 2003).

Box 2.1 *Guiding Principles for Complementary Feeding of the Breastfed Child* (PAHO, 2003)

1. **“Duration of exclusive breastfeeding and age of introduction of complementary foods:** Practice exclusive breastfeeding from birth to 6 months of age, and introduce complementary foods at 6 months of age (180 days) while continuing to breastfeed.
2. **“Maintenance of breastfeeding:** Continue frequent, on-demand breastfeeding until 2 years of age or beyond.
3. **“Responsive feeding:** Practice responsive feeding, applying the principles of psycho-social care. Specifically: a) feed infants directly and assist older children when they feed themselves, being sensitive to their hunger and satiety cues; b) feed slowly and patiently, and encourage children to eat, but do not force them; c) if children refuse many foods, experiment with different food combinations, tastes, textures and methods of encouragement; d) minimize distractions during meals if the child loses interest easily; e) remember that feeding times are periods of learning and love - talk to children during feeding, with eye to eye contact.
4. **“Safe preparation and storage of complementary foods:** Practice good hygiene and proper food handling by a) washing caregivers’ and children’s hands before food preparation and eating, b) storing foods safely and serving foods immediately after preparation, c) using clean utensils to prepare and serve food, d) using clean cups and bowls when feeding children, and e) avoiding the use of feeding bottles, which are difficult to keep clean.
5. **“Amount of complementary food needed:** Start at six months of age with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breastfeeding. The energy needs from complementary foods for infants with ‘average’ breast-milk intake in developing countries are approximately 200 kcal per day at 6-8 months of age, 300 kcal per day at 9-11 months of age, and 550 kcal per day at 12-23 months of age. In industrialized countries these estimates differ somewhat (130, 310 and 580 kcal/d at 6-8, 9-11 and 12-23 months, respectively) because of differences in average breast-milk intake.
6. **“Food consistency:** Gradually increase food consistency and variety as the infant gets older, adapting to the infant’s requirements and abilities. Infants can eat puréed, mashed and semi-solid foods beginning at six months. By 8 months most infants can also eat ‘finger foods’ (snacks that can be eaten by children alone). By 12 months, most children can eat the same types of foods as consumed by the rest of the family (keeping in mind the need for nutrient-dense foods, as explained in #8 below). Avoid foods that may cause choking (i.e., items that have a shape and/or consistency that may cause them to become lodged in the trachea, such as nuts, grapes, raw carrots).
7. **“Meal frequency and energy density:** Increase the number of times that the child is fed complementary foods as he/she gets older. The appropriate number of feedings depends on the energy density of the local foods and the usual amounts consumed at each feeding. For the average healthy breastfed infant, meals of complementary foods should be provided 2-3 times per day at 6-8 months of age and 3-4 times per day at 9-11 and 12-24 months of age, with additional nutritious snacks (such as a piece of fruit or bread or chapatti with nut paste) offered 1-2 times per day, as desired. Snacks are defined as foods eaten between meals - usually self-fed, convenient and easy to prepare. If energy density or amount of food per meal is low, or the child is no longer breastfed, more frequent meals may be required.
8. **“Nutrient content of complementary foods:** Feed a variety of foods to ensure that nutrient needs are met. Meat, poultry, fish or eggs should be eaten daily, or as often as possible. Vegetarian diets cannot meet nutrient needs at this age unless nutrient supplements or fortified products are used (see #9 below). Vitamin A-rich fruits and vegetables should be eaten daily. Provide diets with adequate fat content. Avoid giving drinks with low nutrient value, such as tea, coffee and sugary drinks such as soda. Limit the amount of juice offered so as to avoid displacing more nutrient-rich foods.
9. **“Use of vitamin-mineral supplements or fortified products for infant and mother:** Use fortified complementary foods or vitamin-mineral supplements for the infant, as needed. In some populations, breastfeeding mothers may also need vitamin-mineral supplements or fortified products, both for their own health and to ensure normal concentrations of certain nutrients (particularly vitamins) in their breast milk.
10. **“Feeding during and after illness:** Increase fluid intake during illness, including more frequent breastfeeding, and encourage the child to eat soft, varied, appetizing, favourite foods. After illness, give food more often than usual and encourage the child to eat more” (PAHO, 2003).

2.2.4 Measuring complementary feeding practices

In 2008 the WHO and partners released new and updated indicators for assessing IYCF practices, a set of simple, valid and reliable indicators that can be used in population-based surveys to assess both breastfeeding and complementary feeding practices (Daelmans *et al.*, 2009). The indicators reflect recommendations for optimal IYCF, including recommendations for the duration of exclusive breastfeeding (WHO, 2001b), the *Global Strategy for Infant and Young Child Feeding* (WHO, 2003) the *Guiding Principles for Complementary Feeding of the Breastfed Child* (PAHO, 2003), the *Guiding Principles for Feeding Non-Breastfed Children* (WHO, 2005), among others (WHO, 2008c). Before 2008 indicators focused mostly on breastfeeding practices, and so there has been limited knowledge of the nature, magnitude and distribution of inadequate complementary feeding practices and poor progress in the development of appropriate and effective programme responses (Daelmans *et al.*, 2009; WHO, 2008c). The eight core and seven optional indicators (Box 2.2) focus on selected food-related aspects of child feeding, but do not as yet include other aspects of optimal feeding dealt with by the *Guiding Principles for Complementary Feeding of the Breastfed Child* (PAHO, 2003), such as responsive feeding and food consistency or texture, which are more complex to assess (WHO, 2008c).

2.2.5 Global infant and young child feeding practices

In developing countries between 2006 and 2010 (Table 2.3), only 37% of children younger than six months were exclusively breastfed, while 56% (excluding China) of children were still breastfed at two years of age (20–23 months) and 60% of children aged six to eight months had received solid, semi-solid or soft foods (UNICEF, 2012). Data on complementary feeding practices for 46 developing countries, calculated using the new and updated indicators for assessing IYCF practices and based on demographic and health surveys conducted between 2002 and 2008, are presented in Table 2.4 (WHO, 2010). Seventy per cent of children aged six to eight months had been introduced to solid, semi-solid or soft foods. Just under 40% of all children aged 6–23 months met the criteria for minimum dietary diversity, while just over half of breastfed children of the same age category received the minimum meal frequency. When these indicators were combined for breastfed children, only 24% were found to have a minimum acceptable diet (WHO, 2010). These statistics illustrate that poor breastfeeding and complementary feeding practices are common in developing countries and need to be addressed in order to improve infant and young child nutrition, health, development and, ultimately, survival.

Box 2.2 Indicators for assessing infant and young child feeding practices**Core indicators**

1. Early initiation of breastfeeding
2. Exclusive breastfeeding under 6 months
3. Continued breastfeeding at 1 year
4. Introduction of solid, semi-solid or soft foods*: Proportion of infants 6–8 months of age who receive solid, semi-solid or soft foods.
5. Minimum dietary diversity*: Proportion of children 6–23 months of age who receive foods from four or more food groups of the seven food groups (grains, roots and tubers; legumes and nuts; dairy products; flesh foods; eggs; vitamin-A rich fruits and vegetables; other fruits and vegetables). This indicator is a proxy for adequate micronutrient-density of foods and liquids other than breast milk.
6. Minimum meal frequency*: Proportion of breastfed and non-breastfed children 6–23 months of age who receive solid, semi-solid or soft foods (but also including milk feeds for non-breastfed children) the minimum number of times or more. This indicator is a proxy for adequate energy intake from non-breast milk sources.
7. Minimum acceptable diet*: Proportion of children 6–23 months of age who receive a minimum acceptable diet (apart from breast milk).
8. Consumption of iron-rich or iron-fortified foods*: Proportion of children 6–23 months of age who receive an iron-rich food or iron-fortified food that is specially designed for infants and young children, or that is fortified in the home.

Optional indicators

9. Children ever breastfed
10. Continued breastfeeding at 2 years
11. Age-appropriate breastfeeding
12. Predominant breastfeeding under 6 months
13. Duration of breastfeeding
14. Bottle-feeding: Proportion of children 0–23 months of age who are fed any food or drink with a bottle.
15. Milk feeding frequency for non-breastfed children

*Indicators to measure complementary feeding.

Source: WHO (2008c); WHO (2010)

Table 2.3 Infant and young child feeding practices of the territories of the world

Territories	Percentage of children (2006–2010 ^a) who are:		
	Exclusively breastfed	Introduced to solid, semi-solid or soft foods	Breastfed at age 2
	<6 months	6–8 months	20–23 months
Africa	34	68	44
Sub-Saharan Africa	33	69	46
Eastern and Southern Africa	49	81	54
West and Central Africa	24	63	42
Middle East and North Africa	34	57	31
Asia	38	55	69 ^b
South Asia	45	56	76
East Asia and Pacific	29	54	44 ^b
Latin America and Caribbean	42	71	33
CEE/Commonwealth of Independent States	30	55	22
Industrialised countries	–	–	–
Developing countries	37	60	56 ^b
Least developed countries	42	68	61
World	37	60	55 ^b

CEE, Central Eastern Europe. ^aData refer to the most recent year available during 2006–2010. ^bExcludes China.

Source: UNICEF (2012)

Table 2.4 Complementary feeding status for 46 countries

Infant and young child feeding practice	Percentage of children (average of 46 countries)
Introduction of solid, semi-solid or soft foods ^a (6–8 months)	70
Minimum dietary diversity (All children 6–23 months) ^b	39
Minimum meal frequency (Breastfed children 6–23 months) ^c	53
Minimum acceptable diet (Breastfed children 6–23 months) ^c	24

Average of: ^a41 countries; ^b44 countries; ^c40 countries; ^d45 countries.

Adapted from WHO (2010)

2.2.6 Infant and young child feeding practices and the quality of the complementary diet in South Africa

There is a lack of current, nationally representative, and comprehensive data on IYCF practices in South Africa, with the most recent Demographic and Health Survey conducted almost a decade ago (in 2003). The results of this survey showed that breastfeeding practices in South Africa are sub-optimal, with exclusive and continued breastfeeding rates far below even the poor average rates for developing countries (Department of Health, 2007). While most infants are breastfed (82%), only 8% are exclusively breastfed for the first six months of life, as water, non-human milk, juices, other liquids and complementary foods are introduced from as early as the first two months, and so mixed feeding rather than exclusive breastfeeding is the norm (Department of Health, 2007). Only 49% of infants are introduced to complementary foods between the ages of 6–9 months and a mere 31% of infants continue to be breastfed at 20–23 months, with a median duration of breastfeeding of 16.6 months (Department of Health, 2007).

More recent provincial studies have confirmed that the early introduction of complementary foods is common practice in South Africa, with over 56% of infants in peri-urban Western Cape (Sibeko *et al.*, 2005), 61% in rural KwaZulu-Natal (Faber & Benadé, 2007) and 73% in rural Limpopo (Mushaphi *et al.*, 2008) having received complementary foods before four months of age. The average age of introduction of complementary foods is reported to be two to three months (Faber & Benadé, 2007; Ghuman *et al.*, 2009; Mushaphi *et al.*, 2008), although studies show that for some infants solids are introduced as early as the first week (Mamabolo *et al.*, 2004; Sibeko *et al.*, 2005). Soft maize meal porridge is the first solid food introduced in rural areas (Mushaphi *et al.*, 2008; Sibeko *et al.*, 2005) whereas processed infant cereals are introduced first in urban areas (Faber, 2006; Sibeko *et al.*, 2005).

The main reasons provided by mothers for the early introduction of complementary foods include the perceived inadequate production of breast milk and the belief that breast milk alone was not enough to satisfy the infant (Ghuman *et al.*, 2009; Kruger & Gericke, 2001; Sibeko *et al.*, 2005). Additional reasons cited include that the baby was hungry, crying or not sleeping, the

mother not coping well with breastfeeding and advice from relatives, friends or nurses (Ghuman *et al.*, 2009; Kruger & Gericke, 2001; Mushaphi *et al.*, 2008).

Cultural practices are partially responsible for the early introduction of solids. The practice of introducing Tshiunza, a traditional dish prepared from maize and roots and fermented to make a sour soft porridge, immediately after birth was noted by Mushaphi *et al.* (2008) in a study conducted in the Limpopo province. More than one third (36%) of mothers indicated that they gave their infants specific foods for cultural or medical reasons, specifically naming Tshiunza. This practice was encouraged by grandparents and was based on the belief that the infants were not getting enough breast milk, that Tshiunza gave babies energy, helped them to pass stools and to grow well (Mushaphi *et al.*, 2008).

Soft maize meal porridge, a bulky food of low nutrient density, is the most commonly used complementary food by South African mothers (Faber & Benadé, 2007; Kruger & Gericke, 2003; Mamabolo *et al.*, 2004; Mushaphi *et al.*, 2008). Maize meal is typically diluted with water to obtain a thin consistency (lowering the nutrient density even further) and is high in phytate, which inhibits iron and zinc absorption (Faber, 2006). MacIntyre *et al.* (2005) found that 61% of infants (eight weeks or younger, attending a clinic at Ga-Rankuwa Hospital on the border of the Gauteng and North-West provinces) included in the study received a thin maize meal porridge, and of these, 77% were fed by spoon and 33% were fed by bottle, necessitating thinner dilution. The porridge was made with an estimated proportion of 6–12g maize meal to 250ml water, and the mean intake was 35 ± 26 g per feed providing 30kJ or 1kJ/g, which is less than half the energy provided by breast milk (2.8kJ/g). A study conducted in KwaZulu-Natal reported that most (96%) of the mothers feeding porridge to their infants aged 6–12 months added one to four energy-rich food items (margarine, peanut butter, sugar, formula milk, fresh/powder milk and eggs) to the porridge (Faber, 2005). Less than 20% of the infants consumed animal products or vitamin A-rich fruit and vegetables, and only 26% consumed dairy products during the 24-hour recall period. Although the energy and protein intakes were adequate, the nutrient composition of this rural South African complementary diet was found to be insufficient, especially in iron, zinc and calcium. Infants who consumed processed infant products (fortified infant cereals/ready-to-eat bottled baby foods/formula milk powder) were found to have significantly higher intakes of micronutrients than infants who did not (Faber, 2005).

A study by Potgieter *et al.* (2005), conducted in the Venda region of the Limpopo Province, one of the poorest provinces in South Africa, investigated the bacterial contamination of a traditional maize-based complementary food (Vhuswa) fed to children younger than five years, and domestic drinking water stored in impoverished rural households. Enteric bacterial pathogens *E. coli*, *Salmonella*, *Shigella* and *C. jejuni*, which are a potential cause of diarrhoea in children,

were isolated from 70%, 5%, 5% and 2% of the 125 Vhuswa samples, respectively. In addition, all of the water samples used for drinking and preparation on Vhuswa were faecally contaminated, with bacterial counts much higher than the permissible minimum for safe drinking water. Sixty-eight per cent of the households reported frequent episodes of diarrhoea in children during the study period. The possible causes of contamination of the Vhuswa proposed by the authors included that: none of the households treated stored water before consumption to reduce the transmission of bacterial enteric pathogens; 96% of households stored prepared Vhuswa in closed containers at room temperature for more than 24 hours; 76% of the households did not reheat prepared Vhuswa before feeding; and only 40% of mothers reported washing their hands after visiting pit latrines despite mothers/caretakers of infants and young children using their bare hands to mash Vhuswa into a pap at feeding times (Potgieter *et al.*, 2005). Although more studies of this nature are needed in order to determine the practices of the broader South African population, this study raises concern regarding poor water quality, sanitation and inappropriate preparation and storage of complementary foods and associated health consequences for the infant and young child.

2.2.7 Malnutrition in South Africa and the complementary feeding period

A nationwide survey conducted in 1994 found a medium prevalence of stunting (20%) and a low level of underweight (8.3%) and wasting (3.6%) in infants 6–11 months of age (Labadarios & Middelkoop, *eds.*, 1995). The prevalence of stunting increased with age, with children aged 12–23 months showing a high prevalence of stunting (30.2%). Rural children were nutritionally at a greater disadvantage than urban children, as evidenced by a higher prevalence of underweight, stunting and wasting in rural children (Labadarios & Middelkoop, *eds.*, 1995). Just under a decade later, a similar progression of growth faltering during the first two years of life was displayed in a provincial study conducted in rural Eastern Cape and KwaZulu-Natal, where a medium prevalence of stunting in infants from 6–12 months of life (20.5%) increased to a high prevalence (30.9%) in the second year of life (Lesiapeto *et al.*, 2010). A higher prevalence of combined overweight and obesity of 20.3% was found in infants of 6–12 months, compared with 15% of children 12–24 months of age, with a low prevalence of underweight and wasting for all age groups (Lesiapeto *et al.*, 2010). It appears that little progress in improving the nutritional status of children has been made since South Africa became a democracy in 1994 (Iversen *et al.*, 2011; Smuts *et al.*, 2008), with high levels of stunting and the prevalence of overweight and obesity during the critical period of 6–24 months of life a matter of growing concern.

A secondary analysis of the 1999 National Food Consumption Survey using the 2006 WHO reference standards showed a medium prevalence of stunting (20.1%) for a broader age category of 12–60 months of age (Bosman *et al.*, 2011). The analysis also classified 30% of the

children as combined overweight and obese, leading the authors to conclude that overweight/obesity is the major nutrition problem facing South African children of 12–60 months, with stunting following closely (Bosman *et al.*, 2011). A study by Kimani-Murage *et al.* (2010) found that the co-existence of stunting and combined overweight and obesity in the same child was common in children younger than five years of age, presenting evidence of a worrying double burden of malnutrition in a South African community undergoing a nutrition transition. As stunting is indicative of chronic malnutrition (Labadarios & Middelkoop, *eds.*, 1995), it is reasonable to construe that the high prevalence of stunting during the second year of life is due in part to poor complementary feeding practices (Mamabolo *et al.*, 2004; Mamabolo *et al.*, 2006).

Considering the poor nutrient density of the South African complementary diet discussed previously, it is not surprising that the nationwide survey conducted in 1999 found that South African children's diets were deficient in calcium, iron, zinc and selenium as well as Vitamins A, D, C, E, riboflavin, niacin and B6 (Labadarios, *ed.*, 2000) while the most recent national survey conducted in 2005 highlighted a deterioration in vitamin A status and iron status in children aged 1–5 years and a high prevalence of poor zinc status in children aged 1–9 years (Labadarios *et al.*, 2007). These problem nutrients were further highlighted by a study in rural KwaZulu-Natal, where a high prevalence of anaemia (49%), vitamin A deficiency (20%), zinc deficiency (32%) and iron deficiency anaemia (35%) was reported in infants aged 6–12 months (Faber & Benadé, 2007). The high prevalence of overweight/obesity observed in young South African children (Bosman *et al.*, 2011), which often co-exists with stunting in the same child (Kimani-Murage *et al.*, 2010), is an additional concern when considering the quality of the South African complementary diet.

2.2.8 Role of processed complementary foods in infant and young child feeding

In urbanised populations

Over half the world's population (including over a billion children) now live in urban areas and it is predicted that by 2050, this proportion will increase to 70% of the global population (UNICEF, 2012). In 2010, 62% of the South African population (30.9 million people) lived in urban areas and it is estimated that urbanisation will increase at a rate of 1.2% annually from 2010–2015 (CIA, 2010; UNICEF, 2012). Urban populations purchase a larger proportion of their food than rural populations and are more reliant on a cash economy (Lutter, 2003). Women in urban areas are more likely than rural women to be the head of the household, to work outside of the home and earn wages for their work, all of which result in reduced time for child care, household maintenance, food preparation and child feeding, and possibly greater use of processed foods, street foods and ready-to-eat foods (Ruel, 2000). The increase in employment of women in

South Africa has led to a growing demand for precooked complementary foods that are less time-consuming to prepare (Euromonitor International, 2011; Van der Merwe *et al.*, 2007), and so it is not surprising that the South African processed complementary food market is experiencing strong growth, as already discussed. In a rural community in KwaZulu-Natal, 31% of infants 6–12 months of age were reported to have eaten processed infant cereals in a 24-hour recall (Faber *et al.*, 2005), whereas in disadvantaged urban communities in the Western Cape, over 80% of black infants and about 70% of coloured infants aged 6–12 months ate processed baby foods on a regular basis (Oelofse *et al.*, 2002).

In a predominantly plant-based complementary diet

Complementary diets in developing countries are often nutritionally inadequate due to their lack of diversity and a dependence on plant-based staples such as maize as the dominant food (Faber, 2006; Gibson *et al.*, 1998). Plant-based complementary foods are unable, by themselves, to meet the infant's needs for certain micronutrients such as iron, zinc and calcium (Faber *et al.*, 2005; PAHO, 2003).

The quality of the complementary diet should ideally be improved through the use of locally-available and acceptable foods (UNICEF, 2011a). This may be achieved by: identifying best combinations of locally available low-cost foods that are able to meet the child's needs (e.g. by using linear-programming); using traditional household techniques to improve the nutritional content of plant-based complementary foods (e.g. by soaking, fermentation and germination) and to increase energy density (e.g. adding amylase to cereal porridges); and including animal source foods in the diet (Dewey & Adu-Afarwuah, 2008; UNICEF, 2011a). However, when appropriate foods for complementary feeding with sufficient macronutrients are locally available and affordable but with inadequate micronutrients, or are unavailable and unaffordable, other strategies for improving the nutrient quality of complementary foods should be considered according to the local context (UNICEF, 2011a). Such strategies may include the provision of MNPs or complementary food supplements for home fortification or fortified blended foods, made available through commercial markets or government distribution, in combination with the counselling and education of mothers about optimal feeding and care practices and the use of locally available foods as well as strategies to increase the affordability and availability of quality local food (UNICEF, 2011a).

The *Global Strategy for Infant and Young Child Feeding* (WHO, 2003) thus states that “industrially processed complementary foods also provide an option for some mothers who have the means to buy them and the knowledge and facilities to prepare and feed them safely”. Infants 6–12 months old in rural KwaZulu-Natal who consumed fortified infant products were shown to have significantly higher intakes of most micronutrients compared with those who did

not (Faber, 2005), and low-cost fortified maize-meal porridge was shown to have a potentially significant effect in reducing anaemia and improving iron status of infants in poor settings (Faber *et al.*, 2005). Of all the strategies which can be used to improve the nutritional quality of a maize-based complementary diet, fortification of complementary foods or supplementation may be the most effective way to achieve an adequate iron intake (Faber, 2006). Although the fortification of maize has been mandatory in South Africa since 2003, it is not expected to impact significantly on infant nutrition because of the small amounts that infants consume (Faber, 2005).

Processed fortified complementary foods need to be affordable, commercially available, and promoted in order to generate market demand (UNICEF, 2011a). However there is a risk that excessive use of processed complementary foods may impact negatively on the practice of breastfeeding and the use of local complementary foods, and that they will be used in a manner (e.g. poor hygiene or excessive dilution) that undermines good nutrition (Lutter, 2003). Additionally, the aggressive marketing of breast-milk substitutes in the developing world by transnational companies in the 1970s, together with the continued promotion of these products by some companies in violation of the *Code*, has eroded the trust of the global health community in the private sector (Singh *et al.*, 2010). This distrust of companies manufacturing infant formula has been extended to companies manufacturing complementary foods, owing to suspicions that such companies will exploit the opportunity to promote complementary foods to promote products for infants younger than six months of age (Singh *et al.*, 2010). The distrust between stakeholders in the field of infant and young child nutrition is a significant barrier to ensuring the availability and promoting the consumption of high-quality, low-cost processed fortified complementary foods (Singh *et al.*, 2010), one of the key interventions in improving complementary feeding in young children (UNICEF, 2011a). A well balanced policy and legislative environment is needed that encourages the production and marketing of high-quality fortified complementary foods at affordable prices while ensuring that optimal breastfeeding is protected, foods are safely prepared and stored, and that consumers are not made to believe that local foods are not important or that only a particular brand of product can meet their child's needs (Lutter, 2003). Production and marketing of complementary foods by the private sector must follow ethical guidelines and provide appropriate messages on breastfeeding and complementary feeding that are consistent with the *Guiding Principles for Complementary Feeding of the Breastfed Child* (UNICEF 2011a).

2.3 FOOD LABELLING

2.3.1 Functions of food labels

A food label is defined as any tag, brand, mark, pictorial or other descriptive matter, written, printed, stencilled, marked, embossed or impressed on, or attached to, a container of food (Codex Alimentarius, 1985a). As the first point of contact, the food label is a crucial and direct means by which a manufacturer communicates product information to consumers, and allows consumers to differentiate between individual foods and brands to make informed purchasing choices (CFIA, 2011). By reading food labels, consumers can obtain information that will help them to maximise benefits and reduce the potential risks of inappropriate and uninformed use of the product (CIAI, 2007). The food label is also an important tool for regulators of fair competition, safe food handling and nutrition policy (Mackey & Metz, 2009).

According to the Canadian Food Inspection Agency (CFIA, 2011), a food label has three primary functions:

1. It provides basic product information (e.g. common name, list of ingredients, net contents etc.);
2. It provides health, safety, and nutrition information (e.g. instructions for safe storage and use, nutrition information, and specific information on products for special dietary use);
3. It acts as a vehicle for food marketing, promotion and advertising (via label vignettes, promotional information and the use of claims such as low fat, high in fibre, product of South Africa, organic, no preservatives added, etc.).

2.3.2 General requirements for food labels

The guiding principle for the labelling of pre-packaged foods is that labels should not mislead the public by describing or presenting the product in a manner that is false, misleading or deceptive or is likely to create an incorrect impression regarding its character (Codex Alimentarius, 1985a).

Food labels are typically required to provide the following “mandatory label information” while the provision of other label information is often optional: the name of the food; list of ingredients; net contents and drained weight; name and address of the manufacturer/distributor/importer; country of origin; lot identification; date marking and storage instructions; and instructions for use (Codex Alimentarius, 1985a). Foods for special dietary uses (including foods for infants and young children) may additionally be required to carry nutrition information (Codex Alimentarius, 1985b). Mandatory label information must be clear, prominent, visible (not obscured), indelible,

easy to understand and readily legible by the consumer and provided in a language that is acceptable to the consumer (Codex Alimentarius, 1985a; EU, 2000).

2.3.3 International and national structures regulating food labelling

Codex Alimentarius standards and guidelines

The Codex Alimentarius Commission (CAC) is an intergovernmental body which was established in the 1960s by the WHO and the Food and Agriculture Organization of the United Nations (FAO) to implement the Joint FAO/WHO Food Standards Programme (FAO, 2006). The commission's purpose is to protect the health of consumers, ensure fair practices in the food trade and promote coordination of all food standards work undertaken by international governmental and non-governmental organisations (FAO, 2006).

The Codex Alimentarius (Latin for "food code") is a collection of international food standards, guidelines and codes of practice, that are generally adopted by consensus at Codex meetings (international forums bringing together government regulators, scientists, technical experts, international consumer and industry groups) and are based on the best available technical and scientific knowledge (CCEURO, 2012). It consists of both general and specific texts, where general texts deal with matters such as hygiene, food additives or labelling whose application may extend across a number of commodities, and the specific texts deal with detailed requirements related to a food or group of foods, such as the essential composition of these foods (FAO, 2006). Codex texts are considered international benchmarks and as such have been partially or wholly incorporated into many national regulations or standards. They are particularly useful for developing countries that may not have the infrastructure or technical expertise to establish their own standards. The adoption of Codex texts, however, remains voluntary and non-binding but they are increasingly referred to as reference texts in international trade disputes by the World Trade Organization (CCEURO, 2012).

Regional and national food labelling laws, regulations and other measures

In an effort to protect and improve public health, governments may consider enacting laws, regulations or other measures to implement their labelling policy, and may also develop guidance for food manufacturers and educational materials for consumers to improve the effectiveness of these measures (FAO, 2012). There are many legal approaches to implementing labelling policy – for example, at provincial, national, regional or international level. Labelling laws may be developed by a single country or jointly by two or more countries and then incorporated into each country's national system (FAO, 2012). An example of a regional labelling measure is the *Directive 2000/13/EC of the European Parliament and of the Council of 20 March 2000 on the approximation of the laws of the Member States relating to the*

labelling, presentation and advertising of foodstuffs, which applies to all pre-packaged foods sold within the European Union but carries legal force only once implemented by the Member State (Europa, 2010).

As each government has its own priorities, national labelling laws may vary greatly by country, thus requiring manufacturers/distributors of food products to familiarise themselves with the regulations in each country in which they market their products. Governments should ideally create and maintain structures necessary to enforce these regulations, through industry training, inspection procedures and guidelines (FAO, 2012).

2.4 MARKETING OF COMPLEMENTARY FOODS

This section provides an overview of the international and national instruments that, to a greater or lesser extent, provide guidance on the appropriate marketing of complementary foods. The information on international instruments is summarised in Table 2.5.

Table 2.5 International instruments guiding the marketing of complementary foods

International Instruments	Scope of the instrument includes guidance on the marketing, and practices related thereto, of complementary foods and supplements	Fully aligned with the Code and WHA resolutions
The International Code of Marketing of Breast-milk Substitutes (the Code) (WHO, 1981)	Only when complementary foods are represented as suitable, with or without modification, for use as a partial or total replacement of breast milk.	NA
Subsequent relevant WHA resolutions* *Only the most (but not all) relevant resolutions are listed.	Yes - limited guidance. <ul style="list-style-type: none"> • WHA Res. 63.23: Urges Member States “to end inappropriate promotion of food for infants and young children and to ensure that nutrition and health claims shall not be permitted for foods for infants and young children, except where specifically provided for, in relevant Codex Alimentarius standards or national legislation” (WHA, 2010); • WHA Res. 55.25: Urges Member States “to ensure that the introduction of micronutrient interventions and the marketing of nutritional supplements do not replace, or undermine support for the sustainable practice of, exclusive breastfeeding and optimal complementary feeding” (WHA, 2002); • WHA Res. 49.15: Urges Member States “to ensure that complementary foods are not marketed for or used in ways that undermine exclusive and sustained breast-feeding” (WHA, 1996); • WHA Res. 39.28: requests the Director-General to direct the attention of Member States and other interested parties to the following: “any food or drink given before complementary feeding is nutritionally required may interfere with the initiation or maintenance of breastfeeding and therefore should neither be promoted nor encouraged for use by infants during this period” (WHA, 1986). 	NA
Codex Alimentarius Standards/Guidelines* *Only commodity standards and guidelines for complementary foods/supplements are listed, while relevant general Codex texts are not.	Yes - limited guidance on product labelling. <ul style="list-style-type: none"> • Codex standard for canned baby foods (CODEX STAN 73-1981. Amendment 1983, 1985, 1987, 1989) (Codex Alimentarius, 1981). • Codex standard for processed cereal-based foods for infants and young children (CODEX STAN 74-1981, REV. 1-2006) (Codex Alimentarius, 2006) • Guidelines on formulated supplementary foods for older infants and young children (CAC/GL 8-1991) (Codex Alimentarius, 1991) 	No
Draft Guide for Marketing Complementary Foods (Quinn <i>et al.</i> , 2010)	Yes, with guidance on: product labelling; advertising and retail sales promotion to the general public and mothers outside of the health care system; the sale or use of complementary foods and supplements within the healthcare system; provision of information on complementary foods and supplements to health workers; avoiding conflict of interest between companies that produce and distribute complementary foods and supplements and government health authorities.	Yes
Guidelines for the Marketing of Ready-to-Use Supplemental Foods for Children (NGO/CSO Constituency UNSCN, 2010)	Only for Ready-to-Use Supplemental Foods (RUSF).	Yes

NA, not applicable; WHA, World Health Assembly.

2.4.1 International instruments guiding the marketing of complementary foods

The *International Code of Marketing of Breast-milk Substitutes*

The *International Code of Marketing of Breast-milk Substitutes* (the *Code*) is a global public health recommendation that was drafted by WHO and UNICEF, with the involvement of all concerned parties, and adopted on 21 May 1981 by the World Health Assembly with 118 votes, three abstentions and one negative vote by the USA (WHA, 1981; WHO, 1981). It was created in response to concern that a decline in breastfeeding in many parts of the world, together with increases in infant malnutrition, morbidity and mortality in the developing world, was associated with the aggressive marketing of infant formula (Brady, 2012; WHO, 1981).

The *Code* recognises breastfeeding as an unparalleled way of providing ideal food necessary for the healthy growth and development of infants, and so aims to protect and promote breastfeeding by ensuring the appropriate marketing of breast-milk substitutes (including infant formula), feeding bottles and teats (WHO, 1981; WHO, 2008a). The *Code* applies to the marketing of these products as well as any other food or beverage product when marketed or otherwise represented as suitable for use as a partial or total replacement of breast milk (WHO, 1981). Because optimal breastfeeding practices are described as six months of exclusive breastfeeding followed by continued breastfeeding until two years or beyond (WHO, 2003), it follows that complementary foods (or any other food or beverage product) marketed or otherwise represented as suitable for use during the first six months of life or for replacing the part of the diet best satisfied by breast milk from six to two years of age would be considered breast-milk substitutes and therefore fall within the scope of the *Code* (Clark & Shrimpton, 2000; Quinn *et al.*, 2010; WHO, 2008a).

Marketing is defined by the *Code* as product promotion, distribution, selling, advertising, product public relations, and information services (WHO, 1981). The articles of the *Code* prohibit advertising and other forms of promotion of products within its scope to the general public, to health workers and in healthcare settings. They provide guidance on the content, provision and distribution of informational and educational equipment and materials on IYCF, as well as the appropriate labelling and quality of breast-milk substitutes.

Because of the *Code*'s status as a WHA recommendation, it is not legally binding at a national level but carries "moral and political weight" as it constitutes the judgement of the collective membership of the highest international health body (Bang *et al.*, 2011). However, governments are urged by the WHA to adopt the *Code* into national legislation as a minimum requirement and to monitor compliance with the *Code* (WHA, 1981). Manufacturers and distributors of products within the scope of the *Code* are responsible for complying with the *Code* and for

monitoring their marketing practices according to the principles and aims of the *Code*, irrespective of actions taken by governments to implement the *Code* (WHO, 1981).

Subsequent relevant WHA resolutions

The World Health Assembly is the decision-making body of the WHO and is attended by delegations from all 194 WHO Member States (WHO, 2011). Every second year, the WHA focuses on IYCF, and where necessary, adopts resolutions which serve to clarify, strengthen or extend the provisions of the *Code* (Clark & Shrimpton, 2000), close loopholes and address emerging marketing tactics that undermine breastfeeding (Quinn *et al.*, 2010). As the *Code* was adopted by a WHA resolution, these subsequent resolutions adopted since 1981 that refer to the marketing and distribution of breast-milk substitutes have the same status as the *Code* and must be considered together with the *Code* in interpreting and incorporating the *Code* into national legislation (WHO, 2008a).

The WHA resolutions have begun to address not only issues pertaining to the marketing of breast-milk substitutes, but also the wider category of foods for infants and young children. WHA resolutions pertaining specifically to the marketing of complementary foods (see Table 2.5) urge member states to ensure that complementary foods are not marketed or used in ways that undermine exclusive breastfeeding for the first six months of life (for example, by promoting or encouraging the use of complementary foods during this period) nor continued breastfeeding until two years or beyond. WHA resolution 63.23 (2010) urges member states “to end inappropriate promotion of food for infants and young children and to ensure that nutrition and health claims shall not be permitted for foods for infants and young children, except where specifically provided for, in relevant Codex Alimentarius standards or national legislation”, but fails to define “inappropriate promotion”. Outside of the limited guidance provided by the *Code* and the WHA resolutions discussed, there are no international guidelines or recommendations on the appropriate marketing of complementary foods. In recognition of this gap, the most recent WHA resolution 65.6 (2012) calls on the Director-General of the WHO to “to provide clarification and guidance on the inappropriate promotion of foods for infants and young children cited in resolution WHA63.23, taking into consideration the on-going work of the Codex Alimentarius Commission”.

The Codex Alimentarius Commission (CAC)

Background information on the CAC is presented in the Food Labelling section of this literature review. A number of general Codex texts, pertaining to a wide category of products (e.g. all pre-packaged foods, foods for special dietary uses or foods for infants and young children), provide standards for hygiene, food additives and limited aspects of marketing such as general labelling, nutrition labelling and claims that are applicable to complementary foods. Specific

Codex texts (commodity standards and guidelines) providing detailed requirements specifically related to categories of complementary foods are presented in Table 2.5.

These texts largely provide standards or guidelines for the essential composition and quality or formulation of food products, maximum amounts of permitted food additives, limits for contaminants, hygiene, labelling, packaging and methods of analysis and sampling (Codex Alimentarius, 1981; Codex Alimentarius, 1991; Codex Alimentarius, 2006).

The WHA called on the CAC in 2002 and 2005 to improve/establish standards, guidelines and recommendations on foods for infants and young children, and to ensure that such texts reflect WHO policy, in particular the WHO *Global Strategy for Infant and Young Child Feeding*, the *Code* and subsequent relevant resolutions of the WHA (WHA, 2002; WHA, 2005). However, concerns have been raised that the influence of the high level of industry representation on the delegations of industrialised nations at CAC meetings on the Codex standards has weakened the scope and application of the *Code* (Clark & Shrimpton, 2000). While Codex Alimentarius texts provide some guidance on the appropriate marketing of complementary foods (specifically around labelling and claims), they are not always fully aligned with the *Code* and its aim to protect and promote breastfeeding.

An example of how Codex Alimentarius texts undermine the *Code* is found in the *Codex Standard for Canned Baby Foods* (Codex Alimentarius, 1981), which requires that "For canned beets (beetroot) and spinach, the following statement shall appear on the label "use after the age of 12 weeks". As infants should be exclusively breastfed for the first six months of life (WHO, 2001b; WHO, 2003) the required statement for beets and spinach provides an age of introduction that is too early, and also seems to imply that for all other canned baby foods there is no minimum age limit (Clark & Shrimpton, 2000). The standard goes on to state that canned baby foods "are not breast-milk substitutes and shall not be represented as such" (Codex Alimentarius, 1981) but the very fact that the canned beet and spinach are required to carry a minimum age of introduction that is less than six months means that they are classified as breast-milk substitutes. This standard has yet to be revised to reflect WHO policy. Another example is found in the *Codex Guidelines on Formulated Supplementary Foods for Older Infants and Young Children* (Codex Alimentarius, 1991), which recommends 100 grams of product as an appropriate daily ration for children six months to three years of age and requires this amount of product to provide at least 400kcal/100g. This amount of energy is too high as it exceeds the energy needs from complementary foods for a breastfed child 6–12 months of age (PAHO, 2003). These guidelines are in the process of being revised to address these and other issues.

Draft Guidelines for the Marketing of Ready-to-Use Supplemental Foods for Children

In October 2010 members of the Non-governmental Organization/Civil Society Organization Constituency of the United Nations System Standing Committee on Nutrition, together with expert contributors, drafted guidelines (NGO/CSO Constituency USCN, 2010) pertaining to the regulation of marketing of ready-to-use supplemental foods (RUSFs) for children. These guidelines were published on the Emergency Nutrition Network website (ENN, 2011) during April 2011 for comment.

The scope of these guidelines includes the provision, use, marketing, quality, availability and information concerning the use of RUSFs, as well as ready-to-use therapeutic foods (RUTFs) when used for any other purpose than the treatment of severe acute malnutrition (NGO/CSO Constituency USCN, 2010). It does not cover complementary foods which, unlike RUSFs, are defined by the guidelines as a necessary part of the diet of older infants and young children.

Closely modelled on the *Code*, these guidelines aim to protect and support recommended breastfeeding and complementary feeding practices by ensuring the proper use of RUSFs and by eliminating inappropriate marketing and distribution methods (NGO/CSO Constituency USCN, 2010).

RUSFs may be considered by some to fall within the umbrella of complementary foods, but in this case it appears that RUSFs are intentionally distinguished from complementary foods. Additionally, the scope of products covered may also extend past the age range associated with complementary feeding as they apply to RUSFs for children (not only older infants and young children).

The Draft Guide for Marketing Complementary Foods

The MIYCN WG of the Ten-Year Strategy to Reduce Vitamin and Mineral Deficiencies (the Ten Year Strategy) developed a working paper titled *Using the Code of Marketing of Breast-Milk Substitutes to Guide the Marketing of Complementary Foods to Protect Optimal Infant Feeding Practices* (the *Draft Guide for Marketing Complementary Foods*) (Quinn *et al.*, 2010), which aims to assist commercial enterprises, relevant government offices and other interested groups to market complementary foods and supplements appropriately, in a manner that promotes and supports optimal breastfeeding during the first two years of life.

There has been increased attention given to, and investment in, processed complementary foods and supplements over the past few years as one of a range of strategies to improve the adequacy of complementary feeding of infants of 6–24 months of age (Quinn *et al.*, 2010). Because commercial enterprises are already producing and marketing complementary foods

and supplements in parts of the world where infant feeding practices are poor and undernutrition rates are high, the MIYCN WG felt an urgent need for preliminary guidance on the appropriate marketing of complementary foods and supplements that would ensure the protection and promotion of optimal IYCF practices.

Although the *Code* offers little guidance on the appropriate marketing of complementary foods (unless such foods are marketed or otherwise represented as partial or total replacements for breast milk), its principles can inform the marketing of these products in a manner that supports optimal IYCF (Quinn *et al.*, 2010). In an effort to take “a ‘first step’ in a longer and more formal, future process which will be guided by evidence on what constitutes ‘appropriate’ and ‘non-appropriate’ marketing of complementary foods and supplements”, the MIYCN WG developed the *Draft Guide for Marketing Complementary Foods* (Quinn *et al.*, 2010). This document provides clarification on how the marketing of processed complementary foods and supplements can conform to the *Code* and subsequent relevant WHA resolutions. The MIYCN WG expressed the hope that this interim guidance would be field-tested, leading to the generation of field experiences and lessons learned on the marketing of these products that could inform future guidelines (Quinn *et al.*, 2010).

The Ten-Year Strategy, comprised of UN partners, non-governmental organisations, donors and private sector companies, was an initiative working towards better alignment and a more strategic approach to ending malnutrition, particularly micronutrient malnutrition. The MIYCN WG, one of nine working groups mobilised under the Ten-Year Strategy, was established in 2007 and is made up of an interdisciplinary group of members from numerous organisations, with the Global Alliance for Improved Nutrition (GAIN) serving as secretariat. The structure, membership and scope of the group has evolved over time and has grown to a virtual network of over 100 global scientists and technical experts committed to a comprehensive lifecycle approach to nutrition programming, with a focus on the 1000-day period of development from a child’s conception to his or her second birthday. Participating members contribute their time to the MIYCN WG, while most consultant and publication costs have in the past been funded by GAIN (Zehner, 2012).

One of the MIYCN WG’s specific objectives is to enhance the integration of breastfeeding and the other guiding principles of young child feeding with the promotion of fortified complementary foods and supplements, which led to the formation of the Integration Sub-group. MIYCN WG members elected to participate in the sub-group and Hellen Keller International (HKI) was invited to be the sub-group chair. Several members of the Integration Sub-group (individuals from HKI, GAIN and John Snow, Inc.), in response to the need identified by the MIYCN WG during their first meeting held in Beijing on 28 November 2007, participated in writing the *Draft*

Guide for Marketing Complementary Foods, while other members of the Sub-group and the MIYCN WG provided comment on the document (Zehner, 2012).

The *Draft Guide for Marketing Complementary Foods* offers guidance on key elements of the appropriate marketing of complementary foods and supplements, namely: product labelling; advertising and retail sales promotion to the general public and mothers outside of the healthcare system; the sale or use of complementary foods and supplements within the healthcare system; provision of information on complementary foods and supplements to health workers; and avoiding conflict of interest between companies that produce and distribute complementary foods and supplements and government health authorities. The Draft Guide does not provide compositional standards for complementary foods and supplements nor guidance pertaining to the nutritional quality of such products.

2.4.2 National instruments regulating the marketing of complementary foods

Since the *Code* was adopted in 1981, 84 countries have passed legislation implementing all or many of the provisions of the *Code* and subsequent relevant WHA resolutions, and an additional 14 countries have draft legislation awaiting final approval (UNICEF, 2011b). While all of these national measures apply to breast-milk substitutes, there are some that also extend their scope to include complementary foods, for example in Bangladesh, Brazil, Cambodia, the Philippines, Vietnam, Botswana and India (Quinn *et al.*, 2010).

The *Regulations Relating to Foodstuffs for Infants, Young Children and Children* (GNR.1330/1984, amended in 2006 and 2010) were published in terms of section 15(1) of the *Foodstuffs, Cosmetics and Disinfectants Act* (Act 54 of 1972) in South Africa during June 1984. These regulations deal with compositional and safety requirements but provide little guidance on the marketing of complementary foods other than a small number of labelling requirements for “canned foodstuffs” and “cereal-based foodstuff” for infants and young children and any other foodstuff “purporting or represented to be intended for consumption by children” (South Africa, 1984). They are supplementary to the other labelling requirements laid down by the *Regulations Relating to the Labelling and Advertising of Foodstuffs* (R.146, 1 March 2010).

The *Code* has not been implemented as law in South Africa. However, new *Regulations Relating to Foodstuffs for Infants and Young Children* were published in draft form for comment in March 2012 and will, when promulgated, replace GNR.1330 of 1984 (South Africa, 2012). These draft regulations will incorporate many provisions of the *Code* and are also expected to prescribe the manner in which all foods for infants and young children up to the age of three years, not only breast-milk substitutes, may be marketed in South Africa (South Africa, 2012).

According to Lynn Moeng, the Director of Nutrition at the SA NDoH, the draft regulations are currently awaiting final approval (Bega, 2012).

2.5 LABELLING OF COMPLEMENTARY FOODS

2.5.1 Available evidence on inappropriate complementary food labelling practices

To our knowledge, there are no published studies that provide quantitative data on labelling practices of complementary foods. A small number of studies designed to assess the compliance of breast-milk substitutes with the *Code* provide some information on complementary food labelling practices – but only because such products are marketed for use before six months of age and are therefore classified as breast-milk substitutes, together with infant formula and other breast-milk substitutes (Aguayo *et al.*, 2003; Ergin *et al.*, 2012). A study by Aguayo *et al.* (2003) found that, of the 40 breast-milk substitutes identified at distribution points surveyed in Togo and Burkina Faso whose labels violated one or more provisions of the *Code*, 29 (72.5%) were complementary foods recommending an age of introduction before six months of age.

The International Baby Food Action Network (IBFAN), in its report *Breaking the Rules, Stretching the Rules 2010 (BTR STR 2010)*, document violations of the *Code* and subsequent relevant WHA resolutions by manufacturers over the three years from end 2007 to end 2010 (IBFAN, 2010). IBFAN is an international network comprised of public interest groups working around the world to protect, promote and support breastfeeding and optimal infant feeding practices through universal and full implementation of the *Code* (IBFAN, 2012).

BTR STR 2010 was compiled using evidence (reports and pictures) gathered by IBFAN groups and individuals on an ad-hoc basis in 46 countries, and sent to IBFAN's International Code Documentation Centre, where the information was reviewed, checked and used to compile the report (IBFAN, 2010). It presents both *Code* violations of products under the scope of the *Code* (the "Breaking the Rules" component) as well as practices involving products not under the scope of the *Code* but which undermine breastfeeding (the "Stretching the Rules" component). The report documents a number of inappropriate complementary food labelling practices, examples of which include (note that quantitative data are not provided):

- Bottled water labels that carry a picture of a baby and an accompanying message stating that the product "is recommended for preparing bottles";
- Recommending an age of introduction before six months of age;
- Carrying a statement that the product is "suitable for all ages";

- Carrying nutrition and health claims that are not permitted by national legislation;
- Failing to provide label information in the appropriate language of the country in which the product is sold;
- Using images of young infants;
- Use of images of infants reflecting stages or “growth milestones”, which may be reached before six months (e.g. when baby begins to sit up);
- Porridge labels that recommend feeding the product in a bottle and use an image of a feeding bottle.

2.6 CONCLUSION

The provision of safe and nutritionally adequate complementary foods to infants 6- 24 months of age is one of the pillars of optimal IYCF, together with exclusive and continued breastfeeding. Improved breastfeeding and complementary feeding are the most effective nutrition interventions in reducing under-five mortality, and play a crucial role in growth, development, long-term health and a nation’s economic development and productivity. The promotion and protection of optimal IYCF practices in South Africa is therefore of paramount importance, considering the nation’s high under-5 mortality rate, the double burden of stunting and overweight/obesity, as well as the presence of micronutrient deficiencies in young children, which are attributable in part to poor breastfeeding and complementary feeding practices.

Increasing urbanisation, reliance on a cash economy, and employment of women outside of the home has contributed to a growing demand for processed complementary foods that are quick and easy to prepare. Such products are an important option for some mothers who have the means to buy them and the knowledge and facilities to prepare and feed them safely. The nutritional quality of complementary diets in developing countries such as South Africa are often poor due to their lack of diversity and a dependence on plant-based staples such as maize as the dominant food. The provision of high-quality, safe and affordable processed fortified complementary foods and supplements, made available through commercial markets or government distribution, is one of the key strategies for improving the nutrient quality of the complementary diet. The success of this strategy depends on generating market demand for processed fortified complementary foods, which requires the products to be affordable, commercially available and to be promoted. However, concerns exist regarding the effect of inappropriate marketing and use of complementary foods on breastfeeding, the use of local complementary foods and nutritional status. Such risks must be mitigated by a well-balanced policy and a legislative environment that encourages the production and marketing of high-

quality fortified complementary foods at affordable prices while ensuring that optimal breastfeeding is protected and foods are safely prepared, used and stored.

Food labels function as a vehicle for food marketing, promotion and advertising, as well as providing basic product information and health, safety and nutrition information. Failure of complementary food labels to perform these functions adequately and in an appropriate manner can undermine the nutritional status of the child by increasing the risk of inappropriate use of the product and by undermining optimal IYCF practices. Limited normative guidance is available on the appropriate marketing (including labelling) of complementary foods. The scope of the *Code* extends only to complementary foods that are represented as total or partial breast-milk substitutes, while subsequent WHA resolutions provide broad but non-specific guidance. Codex Alimentarius texts provide some guidance on the labelling of complementary foods and supplements, but are not always supportive of the *Code*. The only international guidance currently providing detailed recommendations on the appropriate marketing of complementary foods that is fully aligned with the principles of the *Code* and subsequent relevant WHA resolutions is the MIYCN WG's *Draft Guide for Marketing Complementary Foods*. This guidance has yet to be formalised by normative bodies such as the WHO.

The aim of this cross-sectional study was to describe the extent to which the labelling practices (as a sub-set of marketing practices) of processed complementary food sold in South Africa comply with international guidance on the marketing of complementary foods that is fully aligned with the principles of the *Code* and subsequent relevant WHA resolutions (the *Draft Guide for Marketing Complementary Foods*).

CHAPTER 3: METHODOLOGY

3.1. INTRODUCTION

This chapter describes how processed complementary food labels for infants and young children in South Africa were critically analysed against international marketing guidance, specifically the *Draft Guide for Marketing Complementary Foods*. Within this chapter the study design, research setting and store selection, product selection, ethical considerations, pilot test, the process of data collection and data analysis are discussed.

3.2. STUDY DESIGN

The study was a cross-sectional survey. A three-pronged approach was employed in order to include as many processed complementary food labels available to consumers on the South African market as possible, and to limit the risk of missing significant manufacturers or distributors and their brands:

- Scoping the South African processed complementary food market (see section 3.4.1): Distributors and manufacturers of processed complementary foods and their brands were identified by:
 - A preliminary scoping during the planning phase of the study;
 - The Nielsen Company's list (compiled using scanning data from retail chains and information generated from audits conducted by Nielsen field workers in the bottom-end of the trade) of key active manufacturers/distributors of complementary foods in South Africa and their brands; and
 - Internet searches.

A master-list of processed complementary foods was compiled by manufacturer, distributor, brand and product.

- Product purchasing (see section 3.4.2): Wholesale and retail grocery chain stores at which South Africans spend the most on groceries, as well as major retail baby and pharmacy stores, were included in the study. Stores from these national chains in three provinces were selected according to their turnover, as described in section 3.3.2. Processed complementary foods were purchased from these stores.
- Cross-checking purchased versus scoped products (see section 3.4.2): After the products were purchased in the selected provinces, they were compared with the products listed on the master-list that was created during the scoping of the South African complementary food market. If any of the products listed on the master-list were not found in the Gauteng, KwaZulu-Natal and Western Cape stores visited, the manufacturers of these products were contacted to determine where the products are sold. These products were then purchased from whichever province and store was most

convenient for the researcher. If the manufacturer did not provide information on where the missing product could be purchased, the product was excluded from the study.

3.3. RESEARCH SETTING AND STORE SELECTION

3.3.1 Selection of provinces

The study was conducted primarily in the Gauteng province as it has the largest population (over 11 million people, representing 22.4% of the total population), the highest population density (615.7 per km²) and is the largest contributor (35.1%) to the gross domestic product and to household expenditure on food (33.7%) of the nine provinces in South Africa (GEDA, 2011; Martins, 2012; Stats SA, 2010). It was therefore anticipated to have the greatest variety of processed complimentary foods available. As shown in Table 3.1, KwaZulu-Natal is home to the largest “Black African” and “Indian/Asian” populations, the Western Cape to the largest “Coloured” population and Gauteng to the largest “White” population of the nine South African provinces (Stats SA, 2010). Thus “cross-check” (described in section 3.4.2) were performed in KwaZulu-Natal and the Western Cape as the cultural diversity these provinces represent may impact on the complementary food products available in the province. Additionally, KwaZulu-Natal and the Western Cape follow Gauteng as the major contributors to household food expenditure in South Africa (Martins, 2012).

Table 3.1 South African population by province and population group: 2001

Province	Black African		Coloured		Indian or Asian		White		Total	
	Number	%	Number	%	Number	%	Number	%	Number	%
Eastern Cape	5 635 079	15,9	478 807	12,0	18 372	1,6	304 506	7,1	6 436 763	14,4
Free State	2 381 073	6,7	83 193	2,1	3 719	0,3	238 791	5,6	2 706 775	6,0
Gauteng	6 522 792	18,4	337 974	8,5	218 015	19,5	1 758 398	41,0	8 837 178	19,7
KwaZulu-Natal	8 002 407	22,6	141 887	3,6	798 275	71,6	483 448	11,3	9 426 017	21,0
Limpopo	5 128 616	14,5	10 163	0,3	8 587	0,8	126 276	2,9	5 273 642	11,8
Mpumalanga	2 886 345	8,1	22 158	0,6	11 244	1,0	203 244	4,7	3 122 990	7,0
Northern Cape	293 976	0,8	424 389	10,6	2 320	0,2	102 042	2,4	822 727	1,8
North West	3 358 450	9,5	56 959	1,4	9 906	0,9	244 035	5,7	3 669 349	8,2
Western Cape	1 207 429	3,4	2 438 976	61,1	45 030	4,0	832 901	19,4	4 524 335	10,1
South Africa	35 416 166	100,0	3 994 505	100,0	1 115 467	100,0	4 293 640	100,0	44 819 778	100,0

Source: Stats SA (2004)

3.3.2 Selection of stores

In order to obtain a cross sectional view of the South African processed complementary food market, complementary foods were purchased from stores (in Gauteng, KwaZulu-Natal and the Western Cape) selected in the manner described below.

National chains selling processed complementary foods were stratified into the following categories, and stores were selected from each stratum as described in the remainder of this section:

- Retail grocery chain stores;
- Wholesale grocery chain stores;
- Retail pharmacy chain stores;
- Retail baby chain stores.

Retail grocery chain stores

According to the SAARF All Media and Products Survey (AMPS) data (Eighty20, 2010), 64.3% of South Africans do most of their food and groceries spending at five retail grocery chain stores (Table 3.2) – Shoprite, Pick ‘n Pay, Spar, Checkers and Boxer. Table 3.3 shows that together these stores also cover the major grocery purchases of all income brackets in South Africa, as reflected by Living Standard Measures (LSMs) (Eighty20, 2010). Three stores from each of these chains (one per province) were included in the study:

- Shoprite;
- Pick ‘n Pay;
- Spar;
- Checkers;
- Boxer (only two stores, in Gauteng and KwaZulu-Natal, were included as there are no Boxer stores in the Western Cape);
- Woolworths (despite only 0.3% of South Africans purchasing most of their groceries at Woolworths, as shown in Table 3.2, three Woolworths Food Stores were included in the study as they carry their own house brand of complementary foods).

Table 3.2 Percentage of the total South African population by the food and grocery store at which they spend the most money and the ranking of the store within strata

Groceries – spend most at	Percentage of total population	Ranking within strata		
		Retail Grocery Chains	Wholesale Grocery Chains	Retail Pharmacy Chains
Shoprite	27.55%	1		
Pick 'n Pay Supermarket / Pick 'n Pay Hypermarket / Pick 'n Pay Family Store / Pick 'n Pay Mini Market*	15.37%	2		
Spar / SuperSpar / KwikSpar*	9.64%	3		
Local / Neighbourhood Supermarket / Township Supermarket / Spaza Shop*	7.71%			
Checkers / Checkers Hyper*	6.92%	4		
Boxer Superstores	4.86%	5		
<i>Any other outlet</i>	3.33%			
OK Grocer / OK Foods / OK MiniMark*	0.94%			
U Save	0.62%			
Makro	0.41%		1	
Woolworths	0.31%			
<i>None</i>	0.24%			
Friendly Supermarket / Friendly Everyday*	0.12%			
Score Supermarket	0.10%			
7 Eleven / Friendly 7 Eleven*	0.08%			
Trade Centre	0.08%		2	
Metro Cash & Carry	0.06%		3	
Multisave	0.05%			
Lucky Seven	0.04%			
Super Value	0.04%			
Clicks	0.03%			1
Sentra Stores	0.03%			
Buy Rite	0.02%			
Pop-In	0.02%			
Dis-Chem	0.01%			2
Discom	0.01%			
Price Club / Friendly Price Club	0.01%			

*Stores separated by a forward slash (/) were grouped and their percentages were summed.

Adapted from Eighty20 (2010)

Table 3.3 Percentage of the total South African population and the top three food and grocery stores at which they spend the most money by LSM category

LSM Category	Ranking			Percentage of total population
	1st	2nd	3rd	Total
LSM 1 – 3 ^a (Low income bracket)	Local/Neighbourhood Supermarket/Township Supermarket/Spaza Shop ^b	Shoprite	Boxer Superstores	
	23.4%	14.8%	14.4%	52.6%
LSM 4 – 7 ^a (Medium income bracket)	Shoprite	Pick 'n Pay Supermarket/ Pick 'n Pay Hypermarket/ Pick 'n Pay Family Store/ Pick 'n Pay Mini Market ^b	Spar/SuperSpar/ KwikSpar*	
	35.1%	12.8%	9.6%	57.5%
LSM 8 – 10 ^a (High income bracket)	Pick 'n Pay Supermarket/ Pick 'n Pay Hypermarket/ Pick 'n Pay Family Store/ Pick 'n Pay Mini Market ^b	Checkers / Checkers Hyper*	Shoprite	
	33.1%	16.7%	11.5%	61.3%

LSM, living standards measure.

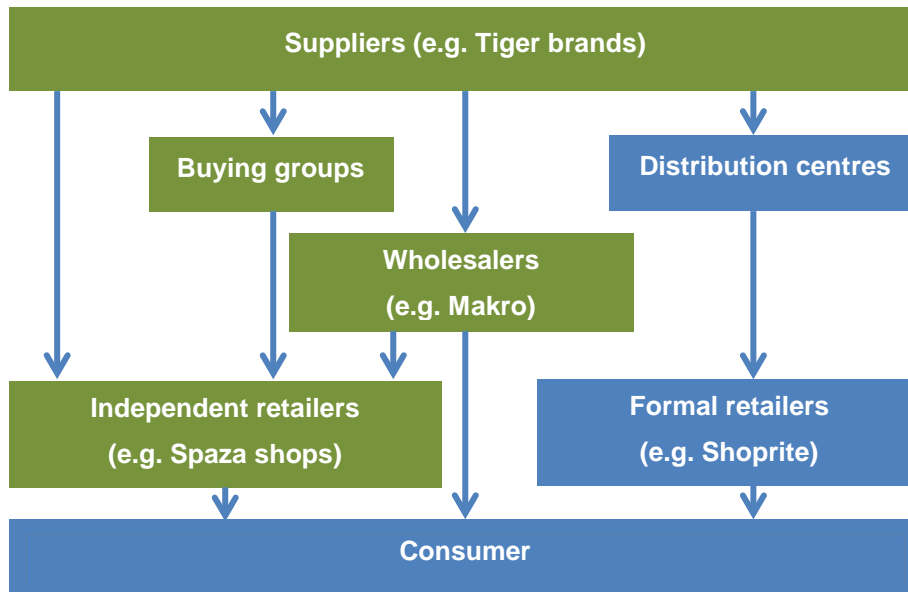
^aThe percentage of the total population per shop, as shown for each of the LSM categories, is the average of the percentages of the individual LSM's of which the LSM category is comprised.

^bStores separated by a forward slash were grouped and their percentages were summed.

Adapted from Eighty20 (2010)

Wholesale grocery chain stores

South Africans in LSM 1-3 do most of their food and groceries spending at independent retailers including local/neighbourhood supermarkets, township supermarkets or spaza shops (Table 3.3). As shown in Figure 3.1, independent retailers typically source stock from wholesalers, and have also begun to source stock directly from suppliers (Ravhugoni & Ngobes, 2010). Therefore, these independent stores were represented in this study by thoroughly scoping the suppliers of processed complementary foods to the South African market (see section 3.4.1) and by including three Makro stores (wholesale grocery chain stores that South Africans buy the majority of their groceries from within the wholesale grocery chain category, as shown in Table 3.2) in the study.

Figure 3.1 Supply chain of grocery products

Adapted from Ravhugoni and Ngobes (2010)

Retail pharmacy chain stores

Table 3.2 shows that groceries are also purchased from retail pharmacies such as Clicks and Dis-Chem, even though they are not a major source of groceries for South Africans. During the preliminary scoping of the South African processed complementary food market (section 3.4.1), it was found that Dis-Chem sold processed complementary food brands not found at the major retail grocery chains and thus one Dis-Chem store in each province was included in the study. Clicks stores did not sell any brands not already found at the major retail grocery chains at the time of the preliminary scoping, and were therefore not included in the study.

Retail baby chain stores

Retail baby chain stores, as expected, were not an important source of groceries for the majority of South Africans (Table 3.2), but because they target infants and young children it was believed that their inclusion in the study would be valuable. One store (Baby City) in each province was included in the study.

Selection of stores from national chains in each province

The store with the highest turnover (information obtained for Gauteng, KwaZulu-Natal and the Western Cape from the retail / wholesale chains) from each of the selected national chains was included in the study. One retailer would not provide the names of stores with the highest turnover, but was willing to suggest appropriate stores to visit. A total of 26 stores were included, as summarised in Table 3.4.

Table 3.4 Stores included in the study per province

National chain	Stores included in study	Store type	Number of stores included per province		
			Gauteng	KwaZulu-Natal	Western Cape
Shoprite Holdings	Shoprite	Supermarket	1	1	1
	Checkers Hyper	Supermarket	1	1	1
Pick n' Pay	Pick n' Pay Hyper	Supermarket	1	1	1
	Boxer Superstore	Supermarket	1	1	0
Spar (SA)	SuperSpar	Supermarket	1	1	1
Woolworths	Woolworths food	Supermarket	1	1	1
Massmart	Makro	Warehouse Club	1	1	1
Dis-Chem	Dis-Chem	Retail pharmacy	1	1	1
Baby City	Baby City	Retail baby	1	1	1
			9	9	8
Total number of stores included in the study:			26		

3.4 SELECTION AND SAMPLING OF PRODUCTS

3.4.1 Scoping the South African complementary food market

A preliminary scoping of the South African processed complementary food market was conducted in Gauteng before the commencement of the study to identify distributors of imported products and local manufacturers of complementary foods, their brands and products. A Pick 'n Pay, Checkers, Dis-Chem, Clicks and Baby City store were included in the scoping exercise.

In order to ensure that the scope of products included in the study was as complete as possible, a list of key active manufacturers/distributors of complementary foods in South Africa and their brands was obtained from the Nielsen Company, a market research company. This list was compiled using scanning data (from retail chains) and information generated from audits conducted by Nielsen field workers in the bottom-end of the trade (independent trade). The manufacturers/distributors were contacted and asked to provide a complete list of all complementary foods sold by the manufacturer/distributor through retail and wholesale channels in South Africa if this information was not already available on South African corporate websites/Facebook pages.

An internet search, using the search terms "baby food" and "frozen baby food", was also performed using www.google.co.za. The first 15 pages of search results for each search term were checked. Complementary food manufacturers and their brands found online were only included in the scoping if their products were sold in retail or wholesale stores and not if they were sold online only.

The list of processed complementary food products available on the South African market compiled during the preliminary scoping was completed using the information obtained from the manufacturers/distributors and corporate websites/Facebook pages. This master-list was then used to cross-check purchased versus scoped products, identifying products that were not found in store and therefore still needed to be purchased. Where the information was not available online and manufacturers/distributors declined or failed to provide the requested information, only those products identified during the purchasing phase (described in section 3.4.2) were included in the study as performing a cross-check was not possible.

3.4.2 Purchasing products for inclusion in the study

The aim was to purchase as many of the complementary foods available on the South African retail/wholesale market as possible, according to the method presented below and the inclusion/exclusion criteria provided in section 3.4.3.

Products included in the study were purchased from the stores listed in Table 3.4 in the following manner:

- One variant (of all available flavour and size variants) of each product found was purchased from a Shoprite supermarket in Gauteng.
- Each of the remaining eight stores selected in Gauteng were cross-checked for products not found at Shoprite, and one variant of each new product found was purchased.
- Cross-checks were also performed in eight stores in the Western Cape and nine stores in KwaZulu-Natal, and one variant of each product not found in previously visited stores was purchased.
- Products were purchased from the 26 selected stores in Gauteng, Western Cape and KwaZulu-Natal during June 2011.
- Products purchased in the selected provinces were then cross-checked against the master-list created during the scoping of the South African complementary food market (section 3.4.1). Any missing products were then purchased during July and August 2011 from the store and province most convenient to the researcher.
- Products carrying the same brand name but indicated for different age groups/developmental stages were considered to be different products.
- Products carrying the same brand name but different sub-brand names or descriptive names (excluding flavour descriptions) were considered to be different products.
- Products carrying the same brand name but available in a single/double serving size were considered to be different products. This is because it was anticipated that the

content/text size of a label of a small package (single/double serving) may differ from a large package of the same product due to limited space availability.

3.4.3 Inclusion and exclusion criteria

Products were selected according to the following inclusion and exclusion criteria. All products that met these criteria were purchased for inclusion in the study in accordance with section 3.4.2.

Inclusion criteria:

- Food/beverage products found in the non-perishable section of the store designated for infant and young child foods.
- Food/beverage products found in the refrigerated or frozen sections of the store whose labels indicate that the product is intended for children younger than three years of age by making use of the words baby/babe/infant/toddler/young child (in the context of age, not product descriptor e.g. baby potato), or by recommending an age of introduction less than three years on the label.

Exclusion criteria

- Food/beverage products whose labels state that they are intended for pregnant women or mothers.
- Food/beverage products whose labels state that they are intended for children three years and older.
- Infant formula, follow-up formula, infant or follow-up formula for special dietary or medical purposes, and other milk or milk-like products (in liquid or powdered form) marketed or otherwise represented as suitable for young child feeding (e.g. GUMs, toddler milks and first milks).
- Meal replacements, nutritional supplements (not including complementary food supplements) and micronutrient supplements.
- Food/beverage products not available in South Africa to customers through retail/wholesale outlets (e.g. products only distributed through government/humanitarian programs or products only available for purchase online).

3.5 ETHICAL CONSIDERATIONS

An ethical approval process was not necessary for this study, however the following actions were considered appropriate:

- The study protocol was sent to the SA NDoH for critical input before initiation of the study.
- When manufacturers/distributors/retailers/wholesalers of processed complementary foods were requested to provide information for use in this study, the letter of request included a brief description of the study, details on how the requested information would be used and a statement that the provision of such information by the recipient was on a voluntary basis (see Addendum A and B for sample letters).
- Once the data capture form (discussed in section 3.7.1) was completed for each product, product names were replaced with a product code (an alpha-numeric string created by a random code generator), product identifiers such as manufacturer/distributor name, brand and sub-brand name, descriptive name and variant were hidden and the order of the products randomly shuffled. This was done to “blind” the completed data capture forms for use during completion of the labelling practices checklist (discussed in section 3.7.2) in order to minimise bias. Data analysis was also conducted using product codes as the sole product identifier.
- The study will not disclose the names of manufacturers/distributors nor their brands or product names, as anonymity was the condition upon which manufacturers/distributors provided requested product information. The manufacturers/distributors may be provided, on request, with the decoded data for their products only.
- The group names of national chain stores and the relevant province (e.g. Shoprite Gauteng) were used when reporting on where the products included in the study were purchased, rather than using individual store names. This was the agreement with the national chain stores that consented to provide the names of the individual stores in each of the selected provinces that had the highest turnover.

3.6 PILOT TEST

After the purchasing phase of the study was completed, a pilot study was conducted using 20 of the purchased product labels (five cereal/porridge; three fresh/frozen food; one gravy/soup; three homogenised/puréed; one milkshake powder; four tea/juice/water; and three snacks/finger food) in order to:

- Test and finalise the data capture form (discussed in Section 3.7.1) used to gather label information from each product label;

- Test and finalise the labelling practices checklist (discussed in Section 3.7.2) against which each label was assessed;
- Generate definitions, examples and/or criteria for each of the data capture form's fields and each of the labelling practices checklist's questions, where necessary.
- Train the research assistant on completing the data capture form and labelling practices checklist.

The products used in the pilot study were also included in the full study.

3.7 DATA COLLECTION

3.7.1 Data capture form and key (Addendum C)

This form was designed to capture information from each product label included in the study, to be used to:

- Provide a description of the types of processed complementary foods included in the study;
- Record label information and practices of interest;
- Provide the information required by researchers to complete the labelling practices checklist (see section 3.7.2). The manufacturer/distributor, product and brand name as well as other product identifiers captured in the data capture form were either replaced with a random code or hidden so that the labelling practices checklist was completed in a blinded manner. This was done to minimise bias, which would not have been possible if the label analysis was performed directly from the product labels.

The form was accompanied by a data capture key (Addendum C), which provided clarification on the kind of information to be captured under each field (text or numeric), examples, definitions of terms used and instructions.

3.7.2 Labelling practices checklist (Addendum D)

Selection of international marketing guidance against which labelling practices were analysed

The MIYCN WG's *Draft Guide for Marketing Complementary Foods* was selected as the primary instrument against which processed complementary foods would be assessed in this study as:

- Limited normative guidance is available on the appropriate marketing (including labelling) of complementary foods;

- The scope of the *Code* only extends to complementary foods that are represented as total or partial breast-milk substitutes, while subsequent WHA resolutions provide broad but non-specific guidance;
- Codex Alimentarius texts provide some guidance on the labelling of complementary foods and supplements, but are not always supportive of the *Code*;
- The only international guidance currently providing detailed recommendations on the appropriate marketing of complementary foods that is fully aligned with the principles of the *Code* and subsequent relevant WHA resolutions is the MIYCN WG's *Draft Guide for Marketing Complementary Foods* (see section 2.4 for a detailed review of the above-mentioned instruments).

Because this paper was printed in March 2010, it does not provide guidance on the latest WHA resolution published in May 2010 that contains the following text pertaining to complementary foods:

WHA Resolution 63.23, Section 1(4): "To end inappropriate promotion of food for infants and young children and to ensure that nutrition and health claims shall not be permitted for foods for infants and young children, except where specifically provided for, in relevant Codex Alimentarius standards or national legislation" (WHA, 2010).

Additional questions were added to the labelling practices checklist to ensure that WHA Resolution 63.23 formed part of the product label analysis.

Creating the labelling practices checklist

The labelling guidance provided by the *Draft Guide for Marketing Complementary Foods* was used to create questions 1-15, and WHA 63.23 was used to create questions 16-19 of the labelling practices checklist (Addendum D) to be used as a tool to critically analyse the labels of processed complementary foods. All of the labelling guidance provided by the *Draft Guide for Marketing Complementary Foods* was included except for the recommendation to "comply with national laws, regulations and standards for what is permitted and not permitted in a country", as assessment against country specific laws was outside the scope of this study. The wording used in the checklist questions was taken directly from the *Draft Guide for Marketing Complementary Foods*. Changes were made (See Addendum E) to the original text only when necessary for the sake of clarity, ease of use and checklist design, without straying from the intended meaning of the guidance. Criteria were set for each of the possible answers as shown in Addendum D in order to minimise the subjective interpretation of the checklist questions.

Rationale for checklist questions and criteria set for each possible answer

Addendum D provides the checklist of labelling practice questions, based on the labelling guidance (original text) from the *Draft Guide for Marketing Complementary Foods*, and the criteria for selecting predefined answers. The rationale for the selection of these criteria for each question is presented in Addendum E.

3.7.3 Documenting labelling practices

After the products were purchased as described in section 3.4.2, all product labels were scanned or photographed. The data capture form was then completed for each product label, from the scans/photos of the label, in the following manner:

- All label information required by the data capture form was captured in Microsoft Excel 2010 (Microsoft Corporation, Johannesburg, South Africa, 2010) by a research assistant and checked by the researcher (for both the pilot and the full study), or vice versa.
- Any disagreements regarding the information captured were resolved by consensus.
- Where consensus could not be reached, a third researcher made the final decision in consultation with the first and second researchers.

Once the data capture form was completed, product names were replaced with a product code created by a random code generator, product identifiers such as manufacturer/distributor name, brand and sub-brand name, descriptive name and variant were hidden and the order of the products randomly shuffled in order to “blind” the completed data capture form for use during completion of the labelling practices checklist.

3.7.4 Measuring compliance with international guidelines

Following the completion of the data capture form, the labelling practices checklist was completed for each product label in the following manner:

- The checklist was completed independently by two researchers (for both the pilot and the full study), using the information in the completed data capture form.
- The checklists completed by each researcher were then compared and disagreements solved by consensus.
- Where consensus could not be reached, a third researcher made the final decision in consultation with the first and second researchers.

3.8 DATA ANALYSIS

The qualitative data captured in the data capture form were reviewed for commonalities and then categorised according to a set of generalisations that covered the consistencies discerned in the data. The categorised qualitative data together with the quantitative data captured in the data capture form were then imported into Statistica Version 10 (StatSoft Inc., Tulsa, Oklahoma, USA, 2011) and simple frequencies calculated for each possible category under each field in the form. These frequencies, together with some of the original qualitative data were used to present:

- A record of current complementary food labelling practices in South Africa;
- A discussion on complementary food labelling trends of interest; and
- Examples and prevalence of:
 - Inappropriate labelling practices;
 - Practices that may be inappropriate but where not picked up by the labelling practices checklist; and
 - Practices that are particularly commendable.

Data captured in the labelling practices checklist were imported into Statistica Version 10 (StatSoft Inc., Tulsa, Oklahoma, USA 2011) and simple frequencies were calculated for each possible answer to the 19 questions in the checklist. These frequencies were then used to describe the extent to which the labels comply with international guidance on the marketing of complementary foods, as previously defined.

CHAPTER 4: RESULTS

4.1 INTRODUCTION

This chapter presents the results of the study, and is divided into the following sections: product sampling, selection and characteristics; and complementary food labelling practices.

4.2 PRODUCT SAMPLING, SELECTION AND CHARACTERISTICS

Characteristics of the 160 processed complementary food products included in the study are presented in Table 4.1. These products, of which 101 (63.1%) were locally manufactured and 59 (36.9%) imported, represent 35 manufacturers, 11 importers and 36 brands. The majority of products (78.8%) were food products including cereals/porridges, homogenised/puréed foods, fresh/frozen foods, snack/finger foods and gravy/soups, while the remaining 21.3% of products were beverages including teas, juices, water and milkshake powders. The most varied product category was the snacks/finger food category which included biscuits, rusks, puffed snacks, rice cakes, dried fruit and cereal/dried fruit bars. Juices included diluted, concentrated or regular fruit juice, fruit nectar, fruit juice and tea blends and fruit juice and vegetable juice blends, while only one water product (flavoured) was found and included in the study. All of the teas were herbal teas, with nine rooibos teas, one honeybush and one mixed herbal tea.

A total of 121 complementary food products were purchased from Gauteng, the Western Cape and KwaZulu-Natal during the purchasing phase in June 2011, of which two products were excluded (see Table 4.2, excluded products not reflected). Products excluded from the study after the purchasing phase included:

- A product described by the label as both a juice and a multivitamin supplement was excluded as inspection of the manufacturer's website revealed that the primary intended use of the product is as a multivitamin supplement.
- A cereal product was excluded as, although it was found in the non-perishable section of the store designated for infant and young child foods, the label (with no age recommendation) had games involving reading and writing printed on it, thus indicating that the product is intended for older children. This was confirmed by the manufacturer.

The remaining 119 products were cross-checked against the master-list of products, compiled during the scoping the South African processed complementary food market, and 44 missing products identified. Three of the missing products were out of stock in South Africa and thus could not be included in the study, while the remaining 41 missing products were purchased during July and August 2011 as presented in Table 4.2, bringing the final number of products included in the study to 160.

Table 4.1 Characteristics of the processed complementary food products included in the study (n=160)

Product Characteristics	Number of products	Percentage of products
Number of product labels (n)	160	
Product origin:		
Locally manufactured products	101	63.1
Imported products	59	36.9
Imported by authorised dealers	54	
Imported by unauthorised dealers ("Grey" products)	5	
Number of importers represented	11	
Number of manufacturers represented:	35	
Local, or multinational with local operations	22	
Foreign	13	
Number of brands represented	36	
Single/Double Serving:		
Single	17	10.6
Double	0	0.0
Multiple servings (>2 servings)	58	36.3
Information not provided	85	53.1
Intended use of product:		
Food	126	78.8
Beverage	34	21.3
Product category:		
Cereal/Porridge	41	25.6
Homogenised/Puréed food	38	23.8
Tea/Juice/Water	31	19.4
Fresh/Frozen food	24	15.0
Snacks/Finger food	22	13.8
Milkshake powder	3	1.9
Gravy/Soup	1	0.6
Storage:		
Shelf stable	136	85.0
Frozen	19	11.9
Fresh	5	3.1

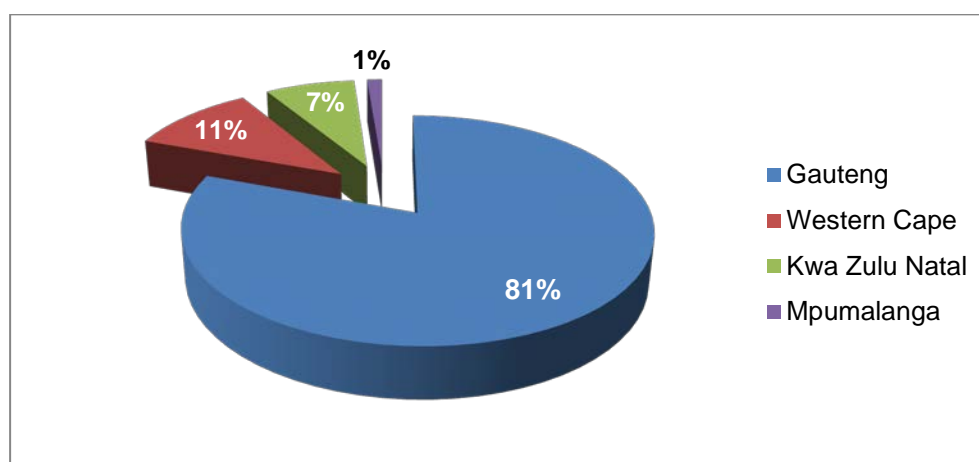
The majority of products (80.7%) were purchased in Gauteng, the first province visited during the purchasing phase (see Figure 4.1). Over half of the products (61.3%) were purchased from retail grocery chain stores (Shoprite, Checkers, Spar, Woolworths and Pick n' Pay), 16.9% from retail baby chain stores (Baby City), 12.6% from retail pharmacy stores (Dis-Chem and Clicks), 5.6% from other (independent) stores and 3.8% from wholesale grocery chain stores (Makro) (see Table 4.2).

Table 4.2 Number of processed complementary food products included in the study by province and store at which they were purchased during the purchasing and cross-checking phase of the study

Product purchased per store	Shoprite	Baby City	Checkers	Spar	Woolworths	Dis-Chem	Makro	Pick 'n Pay	Clicks	Other (Independent)	Total (% of total)
Product purchasing (June 2011) - products purchased from selected stores in Gauteng, Western Cape and KwaZulu-Natal:											
GAUTENG											
	49	13	9	7	7	5 ^a	5	4			99 (61.9)
WESTERN CAPE											
				3		5					8 (5.0)
KWAZULU-NATAL											
		4	5	0 ^a	1		1	1			12 (7.5)
Subtotal per store	49	17	14	10	8	10	6	5			119 (74.4)
Cross-checking purchased versus scoped products (July - August 2011) - missing products purchased from stores in Gauteng, Western Cape and Mpumalanga^b:											
GAUTENG											
		10		9				1	10		30 (18.8)
WESTERN CAPE											
										9	9 (5.6)
MPUMALANGA											
				2							2 (1.3)
Subtotal per store		10		11				1	10	9	41 (25.6)
Total per store (% of total)	49 (30.6)	27 (16.9)	14 (8.8)	21 (13.1)	8 (5.0)	10 (6.3)	6 (3.8)	6 (3.8)	10 (6.3)	9 (5.6)	160

^aExcluded products not reflected. ^bMissing products were purchased from the province which was most convenient for the researcher, regardless of whether the province was one of the three selected for the study.

Figure 4.1 Percentage of products purchased per province (n=160)



As presented in Table 4.3, 25 manufacturers of processed complementary foods and their products were identified during the scoping of the South African market and an additional 10 manufacturers during the product purchasing phase. The five manufacturers identified using an internet search all sold frozen complementary foods both via the internet and in selected stores. Each of the 35 manufacturers were represented in this study by between one and 40 products, with four manufacturers accounting for 51.3% of the products included in the study.

Table 4.3 Number of manufacturers of processed complementary foods identified during the scoping and product purchasing phase of the study

Study Phase	Number of manufacturers/ distributors identified
Scoping the South African processed complementary food market:	
Preliminary scoping (planning phase)	16
Nielsen Company's list of key active manufacturers/distributors of complementary foods in South Africa	4 ^a (plus 2 which are no longer active in South Africa)
Internet search	5 ^a
Product purchasing phase:	
Gauteng, KwaZulu-Natal and Western Cape stores	10 ^a
Total number of manufacturers/distributors	35

^aNumber of manufacturers/distributors identified that had not already been identified during the preceding study phase.

Per kilogram or litre, the most expensive "ready-to-eat/drink" product category was snacks/finger foods (R440.57) followed by fresh/frozen food (R85.40) and homogenised/puréed food (R84.05), as presented in Table 4.4. Imported products were between 1.8 (for tea/water/juice) and 3.1 (snacks/finger foods) times more expensive than locally manufactured products. The mean cost per net weight/volume of a complementary food in South Africa across all product categories was R18.65, ranging from a minimum of R2.16 to a maximum of R65.99 per product.

Table 4.4 Costs of products per unit (kg or l) and net weight/volume by product category (n=160)

Product Category	Number of products	Mean cost/kg or l	Minimum cost/kg or l	Maximum cost/kg or l	Mean cost/net wt. or vol.	Minimum cost/net wt. or vol.	Maximum cost/net wt. or vol.
Cereal/Porridge	41	R 127.35	R 13.99	R 527.92	R 21.11	R 2.16	R 65.99
Add milk	23	R 128.25	R 27.48	R 429.90	R 18.27	R 2.16	R 42.99
Add water	13	R 134.93	R 57.80	R 527.92	R 23.75	R 2.89	R 65.99
Add milk or water	5	R 103.52	R 13.99	R 219.84	R 27.28	R 7.00	R 54.96
Imported	12	R 230.70	R 74.98	R 527.92			
Locally manufactured	29	R 84.59	R 13.99	R 249.90			
Homogenised/Puréed food	38	R 84.05	R 37.16	R 199.88	R 11.81	R 4.79	R 44.95
Imported	23	R 105.09	R 49.95	R 199.88			
Locally manufactured	15	R 51.79	R 37.16	R 79.50			
Snacks/finger food	22	R 440.57	R 99.95	R 1 428.21	R 30.69	R 10.45	R 59.99
Imported	19	R 485.41	R 179.93	R 1 428.21			
Locally manufactured	3	R 156.59	R 99.95	R 249.90			
Gravy/Soup	1	R 173.33	R 173.33	R 173.33	R 5.20	R 5.20	R 5.20
Locally manufactured	1	R 173.33	R 173.33	R 173.33			
Fresh/Frozen food	24	R 85.40	R 31.15	R 116.67	R 19.38	R 6.95	R 40.00
Locally manufactured	24	R 85.40	R 31.15	R 116.67			
Milkshake powder (Add milk)	3	R 110.61	R 89.95	R 151.92	R 18.32	R 17.99	R 18.99
Locally manufactured	3	R 110.61	R 89.95	R 151.92			
Tea/Water/Juice	31	R 175.99	R 10.99	R 1 183.33	R 15.15	R 4.89	R 40.99
Imported	5	R 283.84	R 37.32	R 1 183.33			
Locally manufactured	26	R 155.25	R 10.99	R 731.67			
TOTAL	160	R 163.24	R 10.99	R 1 428.21	R 18.65	R 2.16	R 65.99
Imported	59	R 268.26	R 37.32	R 1 428.21			
Locally manufactured	101	R 101.89	R 10.99	R 731.67			

4.3 COMPLEMENTARY FOOD LABELLING PRACTICES

In this section the results of the labelling practices checklist (Table 4.5) are presented together with data generated by the data capture form, which documents current complementary food labelling practices in South Africa. The full labelling practices questionnaire with the criteria set for each possible answer is provided in Addendum D. Of the 160 labels assessed, none were found to be compliant with all of the labelling practices checklist requirements.

Table 4.5 Results of labelling practices checklist (n=160)

	Labelling practice questions	Potential answers	Number of labels	Percentage of labels	Percentage of labels (excl. "NA")
1	Is the product label written in the appropriate language(s) of the country in which the product is sold?	Yes ^a	160	100.0	
		Partial	0	0.0	
		No	0	0.0	
2	Is the product label easy to read?	Yes ^a	58	36.3	
		No	102	63.8	
3	Does the insert contain any required label information that is NOT present on the label?	Yes	2	1.3	22.2
		No ^a	7	4.4	77.8
		NA	151	94.4	
4	Does the product label specify a recommended age of introduction that is less than 6 months of age?	Yes	17	10.6	14.0
		No ^a	104	65.0	86.0
		NA	39	24.4	
5	Does the product label give instructions indicating how to feed the product to infants younger than six months?	Yes	1	0.6	
		No ^a	159	99.4	
6	Does the product label include phrases such as "from the start"; "for the whole family" or "first stage"?	Yes	32	20.0	
		Partial	27	16.9	
		No ^a	101	63.1	
7	Does the product label include the following messages:				
7.1	An appropriate age of introduction that is six months (180 days) or more?	Yes ^a	104	65.0	
		No	56	35.0	
7.1.1	Is the message relegated to small print that cannot easily be seen?	Yes	4	2.5	3.8
		No ^a	101	63.1	96.2
		NA	55	34.4	
7.2	The importance of exclusive breastfeeding for the first six months of life?	Yes ^a	20	12.5	
		No	140	87.5	
7.2.1	Is the message relegated to small print that cannot easily be seen?	Yes	8	5.0	40.0
		No ^a	12	7.5	60.0
		NA	140	87.5	
7.3	The importance of the addition of complementary foods from six months of age with continued breastfeeding up to two years or beyond?	Yes ^a	0	0.0	
		Partial	52	32.5	
		No	108	67.5	
7.3.1	Is the message relegated to small print that cannot easily be seen?	Yes	2	1.3	3.8
		No ^a	50	31.3	96.2
		NA	108	67.5	

	Labelling practice questions	Potential answers	Number of labels	Percentage of labels	Percentage of labels (excl. "NA")
7.4	Instructions for safe and appropriate preparation and use?	Yes ^a	110	68.8	
		Partial	44	27.5	
		No	6	3.8	
7.4.1	Is the message-relegated to small print that cannot easily be seen?	Yes	45	28.1	29.2
		No ^a	109	68.1	70.8
		NA	6	3.8	
7.5	A recommendation to feed the product with a spoon?	Yes ^a	22	13.8	20.6
		Partial	16	10.0	15.0
		No	69	43.1	64.5
		NA	53	33.1	
7.5.1	Is the message relegated to small print that cannot easily be seen?	Yes	8	5.0	33.3
		No ^a	16	10.0	66.7
		NA	136	85.0	
7.6	A proposed daily ration and serving (or recommended number of servings per day and serving)?	Yes ^a	12	7.5	
		Partial	67	41.9	
		No	81	50.6	
7.6.1	Is the message relegated to small print that cannot easily be seen?	Yes	21	13.1	26.6
		No ^a	58	36.3	73.4
		NA	81	50.6	
7.7	Instructions for safe and appropriate storage?	Yes ^a	150	93.8	
		No	10	6.3	
7.7.1	Is the message relegated to small print that cannot easily be seen?	Yes	24	15.0	16.0
		No ^a	126	78.8	84.0
		NA	10	6.3	
8	Does the product label recommend feeding the product in a bottle?	Yes	8	5.0	
		No ^a	152	95.0	
9	Does the product label show an image of a feeding bottle?	Yes	2	1.3	
		No ^a	158	98.8	
10	Does the product label recommend feeding the product in a soft or semi-soft form?	Yes ^a	1	0.6	2.3
		Partial	7	4.4	15.9
		No	36	22.5	81.8
		NA	116	72.5	
11	Does the product label recommend feeding the product in a liquid form?	Yes	1	0.6	0.8
		Partial	2	1.3	1.6
		No ^a	122	76.3	97.6
		NA	35	21.9	
12	Does the daily ration (or a recommended serving size combined with a recommended frequency of feeds per day) included on the product label exceed the recommended energy intake from complementary foods for a breastfed child provided below?				
12.1	6 - 8.9 months : 837 kJ/day (200 Kcal/day)	Yes	17	10.6	12.4
		No ^a	1	0.6	0.7
		Insufficient Information	119	74.4	86.9
		NA	23	14.4	

	Labelling practice questions	Potential answers	Number of labels	Percentage of labels	Percentage of labels (excl. "NA")
12.2	9 - 11.9 months : 1,255kJ/day (300 Kcal/day)	Yes	11	6.9	7.4
		No ^a	1	0.6	0.7
		Insufficient Information	136	85.0	91.9
		NA	12	7.5	
12.3	12 - 23.9 months : 2301kJ/day (550 Kcal)	Yes	0	0.0	
		No ^a	12	7.5	
		Insufficient Information	148	92.5	
		NA	0	0.0	
13	Does the product label include stipulated warnings?	Yes ^a	133	83.1	
		No	27	16.9	
14	Does the product label include images of babies appearing to be older than six months of age?	Yes ^a	16	10.0	25.4
		Unclear	10	6.3	15.9
		No	37	23.1	58.7
		NA	97	60.6	
15	Is the product labelled in a way that also promotes the company's infant or follow up formula by using similar: <ul style="list-style-type: none"> • Colour schemes or designs; • Names; • Slogans, mascots or other symbols; as used for their infant formula or follow up formula brands?	Yes	32	20.0	100.0
		No ^a	0	0.0	0.0
		NA	128	80.0	
16	Does the product label make any nutrient content claims?	Yes	126	78.8	
		No	34	21.3	
17	Does the product label make any nutrient comparative claims?	Yes	8	5.0	
		No	152	95.0	
18	Does the product label make any nutrient function/other function claims?	Yes	117	73.1	
		No	43	26.9	
19	Does the product label make any reduction of disease risk claims?	Yes	10	6.3	
		No	150	93.8	

NA, not applicable. ^aThe answer indicating compliance with the *Draft Guide for Marketing Complementary Foods*.

4.3.1 Languages

All labels assessed were written in the appropriate language(s) of South Africa - the only checklist question for which all labels were in compliance with the *Draft Guide for Marketing Complementary Foods* (**Question 1**, Table 4.5). As indicated in Table 4.6, all labels provided all label information in English, whereas only 13 (8.1%) labels also provided some information in other official South African languages. Some or all label information was provided in foreign languages by 24 (15.9%) labels. Of the 32 (20%) labels providing some label information in one or more additional languages (additional to English), 26 (81.3%) provided preparation/use instructions, 8 (28.1%) provided warnings, and 8 (25%) provided the best before date, daily ration/serving size/frequency of feeds and ingredients in more than one language. Other label

information provided in more than one language by a small number of products included storage instructions, the country of origin, the descriptive name or product variant, the manufacturer's name, nutrition information and "other" information. The labels in the study were found to carry between one and nine languages, with 125 (78.1%) labels carrying only one language, 16 (10%) carrying three languages and 8 (5%) carrying two and four languages.

Table 4.6 Languages in which label information was provided on complementary food labels (n=160)

Label information provided in the following language(s)	ALL information provided in:		SOME information provided in:	
	Number of labels	Percentage of labels	Number of labels	Percentage of labels
English	160	100.0	0	0
Other official SA languages	0	0.0	13	8.1
Other languages (not official SA languages)	3	1.9	21	13.1
Not applicable	0	0	128	80.0

SA, South African.

4.3.2 Easy to read

The results of **question 2** (Table 4.5) indicate that 102 (63.8%) labels were not considered "easy to read" - providing any of the required label information (as defined in Addendum D, question 2) in letters smaller than 1mm in height for lower case vowels. The percentage of single serving product labels that were not "easy to read" was 82.4% (14 out of 17 labels). Only 35 (21.3%) labels had no text smaller than 1mm in letter height. The letter height of the smallest text on each label as a percentage of the largest text on the label ranged from 0.9 to 57.9%, with a mean of 10%. This indicates that on average, the largest text on a label was 10 times taller than the smallest text.

4.3.3 Inserts

Relegating required label information to an insert (printed information - excluding the product label - that is inserted into the product or affixed to it), and in fact including any insert at all, did not appear to be a common practice. Only nine (5.6%) products contained inserts (as defined in Addendum C, data field 23), of which two (1.3%) contained required label information not provided on the label, while the remaining seven (4.4%) inserts contained non-required information (**Question 3**, Table 4.5). The latter inserts provided information regarding an online rewards scheme where the customer earns points by buying the products, and these points can be redeemed in exchange for rewards.

4.3.4 Age related recommendations, feeding instructions and phrases

From the results of both **question 4 and 7.1** (Table 4.5) we see that only 104 (65%) labels specified an appropriate age of introduction of six months or more, while 17 (10.6%) labels recommended an age of introduction of less than six months and 39 (24.4%) labels did not provide an age of introduction at all. Of the labels that did not provide an age of introduction in months/years, 33 (84.6%) labels provided an age category in words only (e.g. baby, kids, toddler), and 6 (18.2%) labels provided neither an age of introduction in months/years nor an age category in words, but were included in the study because they were found in the non-perishable section of the store designated for infant and young child foods.

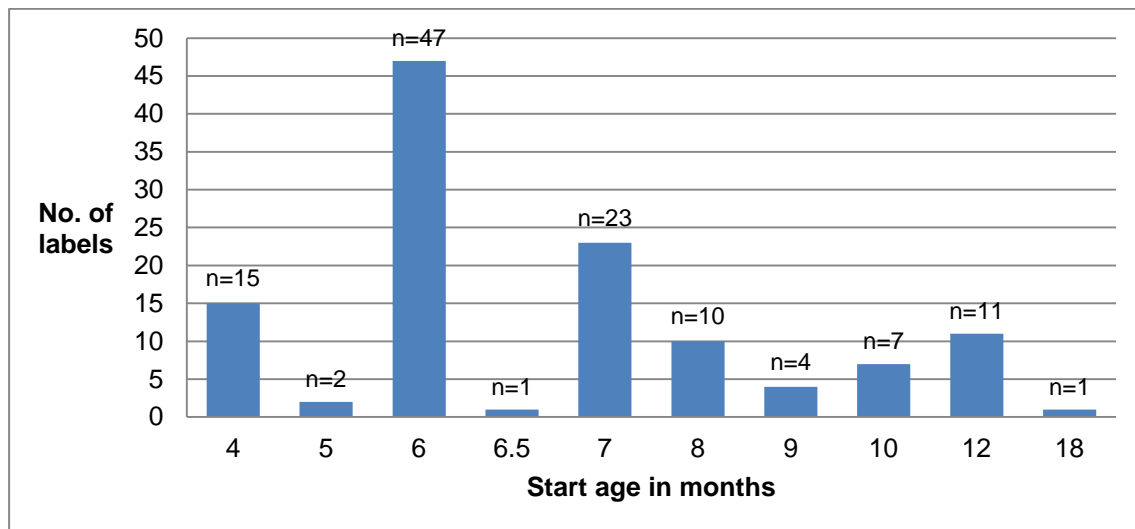
Table 4.7 shows that, of the 121 labels providing an age recommendation in months/years, 53 (43.8%) labels used the wording “From x months”, while 30 (24.8%) used the wording “From x to y months” when recommending an age of introduction. The most commonly recommended starting age was from six months (see Figure 4.2). All 15 of the labels recommending an age of introduction from four months were imported products, but the two labels that recommend introduction from five months were locally manufactured.

Table 4.7 Wording used for the recommended age of introduction on complementary food labels (n=121)

Recommended age of introduction ^a	Number of labels	Percentage of labels
From x months	53	43.8
From x to y months	30	24.8
x+ months	7	5.8
From x+ months	5	4.1
x months onwards	4	3.3
x to y months onwards	4	3.3
From x months to y years	4	3.3
From x year	3	2.5
x months and up	2	1.7
x to y months	2	1.7
From about x months	2	1.7
Suitable from x months	2	1.7
After x months	1	0.8
After x to y months	1	0.8
Suitable from x months +	1	0.8
Total	121	100.0

^a Wording used, where x = start age and y = end age

Figure 4.2 Recommended age of introduction (from x months, where x = start age) provided on complementary food labels (n=121)



The practice of providing instructions indicating how to feed the product to infants younger than six months was very uncommon (**Question 5**, Table 4.5), with only one product label carrying a feeding table with an indication of the quantities to be fed to infants “4 months +”, “5 months +”, and “6 months +”.

Phrases that indicate or imply that the product may be suitable for infants younger than six months (such as “from the start”; “for the whole family” or “first stage”) were used on 32 (20%) labels in the absence of an appropriate age of introduction, while 27 (16.9%) labels used such phrases and recommended an age of introduction equal to or greater than six months (**Question 6**, Table 4.5). Examples of phrases that imply suitability of use before six months of age used on these 59 (36.9%) complementary food labels are listed in Table 4.8.

Table 4.8 Phrases that imply suitability of use before six months of age used on complementary food labels (n=59)

Phrases implying suitability of use before six months of age	Number of labels	Percentage of labels
Stage 1 / Step 1	21	35.6
Baby(ies) / Babes ^a	16	27.1
Best start in life / Healthy start for life	14	23.7
1 (One)	6	10.2
First / First foods / 1st tastes	6	10.2
For the whole family / For all the family	5	8.5
Starter / Starter food / For starter eaters	3	5.1
All ages	2	3.4
Junior	2	3.4
From an early age	1	1.7
Tots	1	1.7

^aOnly captured as a “phrase indicating suitability of use before six months” if the product label did not provide a recommended age of introduction in months/years.

4.3.5 Feeding practices

Messages explicitly stating the importance of exclusive and continued breastfeeding were not commonly included on labels. Only 20 (12.5%) labels included a message indicating the importance of exclusive breastfeeding for the first six months of life (**Question 7.2**, Table 4.5), of which eight (40%) labels relegated the message to small print. None of the labels included a message stating the importance of the addition of complementary foods from six months with continued breastfeeding up to two years or beyond (**Question 7.3**, Table 4.5).

Messages or recommendations regarding feeding practices for infants and young children were provided on 91 (56.9%) labels, including messages on breastfeeding and complementary feeding, and have been categorised in Table 4.9 and examples provided. Of these labels, 69 (75.8%) mentioned breastfeeding but only 20 (22%) recommend exclusive breastfeeding for the first six months of life. Only 14 (15.4%) recommend that breastfeeding should continue after complementary foods are introduced at six months, and 38 (41.8%) recommended breastfeeding for up to two years. Twenty-three (25.3%) labels recommended introducing complementary foods from six months of age.

Table 4.9 Messages/Recommendations regarding feeding practices for infants and young children used on complementary food labels (n=91)

Categories of messages regarding feeding practices for infants and young children	Number of labels	Percentage of labels	Example text from labels
Breastfeeding / Milk Feed Messages:			
Recommended for up to 24 months	38	41.8	<i>Breastfeeding is recommended for up to 24 months.</i>
Recommendation: WHO	16	17.6	<i>The World Health Organization recommends exclusive breastfeeding for the first six months of life.</i>
Recommendation: DoH	12	13.2	<i>The Department of Health and the World Health Organization recommend exclusive breastfeeding for the first 6 months.</i>
Breast milk / infant formula is insufficient from 6 months	9	9.9	<i>Infant cereal may be introduced from 6 months when breast milk alone or infant formula can no longer totally fulfil your baby's increasing nutritional requirements.</i>
Is best for your baby	6	6.6	<i>Breastfeeding is best for your baby.</i>
Milk feeds should continue as long as possible	6	6.6	<i>Milk feeds, ideally breastfeeding, should continue for as long as possible.</i>
Should continue as long as possible	5	5.5	<i>Breastfeeding should continue for as long as possible after introduction of complementary foods.</i>
Continue while introducing solids	3	3.3	<i>It is beneficial to continue breastfeeding whilst introducing solid food.</i>
Duration: Ask healthcare professional	3	3.3	<i>The World Health Organization recommends exclusive breastfeeding for the first six months of life. However every baby is different and you may want to speak to your healthcare professional on what is best for your baby.</i>

Categories of messages regarding feeding practices for infants and young children	Number of labels	Percentage of labels	Example text from labels
Milk feeds still most important	3	3.3	<i>Milk feeds should still be the most important part of your baby's diet.</i>
Benefits	1	1.1	<i>The wonderful gift a mother gives her baby when breast-feeding goes beyond love and nourishment. You're also providing them with protection from infections and many different diseases.</i>
Recommended for up to 6 months	1	1.1	<i>Breastfeeding is recommended for up to 6 months.</i>
Complementary Feeding Messages:			
Readiness: Age	39	42.9	<i>From 6 months onwards, in addition to milk and cereals, it is also appropriate to give your baby other foods like vegetables and fruit etc.</i>
Readiness: Ask health professional	28	30.8	<i>Since babies' growth rates are different consult your health professional for advice on when to introduce complementary foods.</i>
Readiness: Too early introduction	24	26.4	<i>Too early introduction of this food must be done under guidance of your healthcare professional.</i>
Type: Vegetables	17	18.7	<i>Vegetables are a good food to start off with, not only are they rich in fibre and antioxidants, they also are not all sweet. This encourages the acceptance of a variety of flavours.</i>
Use: Not a breast milk substitute	16	17.6	<i>Juice should never replace a breastfeed.</i>
Type: Fruit	15	16.5	<i>From 6 months onwards gradually add fruit and vegetables to supplement your baby's diet.</i>
Readiness: Developmental milestones	14	15.4	<i>On average your baby is ready for solids when he or she: Can lift head and place weight on forearms when lying on stomach; Has doubled birth weight; Can hold head steady when sitting fully supported.</i>
Type: Cereals	14	15.4	<i>Baby cereals and fruit can be used to complement vegetables in early weaning.</i>
Type: Home prepared foods	12	13.2	<i>Home prepared foods are also suitable for infants from 6 months and young children.</i>
Ingredients suitable from 4 months	9	9.9	<i>The Department of Health and the World Health Organization recommend exclusive breastfeeding for the first 6 months. However, if you choose to wean earlier, our ingredients are suitable from 4 months.</i>
Type: Other foods	9	9.9	<i>From 6 months onwards, in addition to milk and cereals, it is also appropriate to give your baby other foods like fruit and vegetables etc.</i>
Readiness: Dietary milestones	6	6.6	<i>All babies develop differently and at different times, some will be ready for finger foods before others. Only give your baby (product name) if he/she: Is chewing other solid foods; Can mash it with their gums without choking or gagging.</i>
Don't start solids before 4 months	5	5.5	<i>Unless otherwise advised by your health professional solid food should not be started any earlier than 4-6 months.</i>
Type: Range of tastes	5	5.5	<i>Once your baby is comfortable with eating starter foods, he or she needs to start learning about new flavours. It is important to introduce variety to your baby's diet to provide your baby with extra vitamins and minerals from various food sources and to encourage the acceptance of new foods.</i>
Frequency: Snacking (Toddlers)	4	4.4	<i>Toddlers should eat 2-3 between-meal snacks a day.</i>
Type: Liquids	4	4.4	<i>Thirsty babies need healthy drinks. Your baby gets thirsty just like an adult, especially in warm weather. When your baby is in the weaning stage, liquids are an important part of the diet, so make sure your baby gets enough of the correct fluids. Milk feeds should still be the most important part of your baby's diet.</i>

Categories of messages regarding feeding practices for infants and young children	Number of labels	Percentage of labels	Example text from labels
Type: Texture	4	4.4	<i>Introducing texture helps develop speech skills. Textured food teaches your baby to chew. If you miss this stage, your baby could refuse to eat table food unless it is smooth, which can result in feeding problems later. Introducing texture is also important for the development of babies' speech skills.</i>
Use: Part of a balanced diet	4	4.4	<i>Use as part of a varied weaning diet.</i>
Type: Variety	3	3.3	<i>Introduce your toddler to a variety of foods that are rich in vitamins and minerals.</i>
Toddler feeding tips	2	2.2	<i>Let your toddler participate in family meals even if he has already been fed so he can learn the skills required for eating with the rest of the family.</i>
Type: Fish	2	2.2	<i>From 6 months onwards, in addition to milk and cereals, it is also appropriate to give your baby other complementary foods like meat, fish, vegetables etc.</i>
Type: Meat	2	2.2	<i>From 6 months onwards, in addition to milk and cereals, it is also appropriate to give your baby other complementary foods like meat, fish, vegetables etc.</i>
Frequency: Regular meals	1	1.1	Small children need to eat regularly as their digestive systems can only tolerate small quantities of food at a time, that are easy to eat and easy to digest.

Of the 20 labels that explicitly stated the importance of exclusive breastfeeding for the first six months of life, 15 (75%) labels undermined or weakened this message by adding one of the following qualifying statements:

- “The World Health Organization recommends exclusive breastfeeding for the first six months of life. However every baby is different and you may want to speak to your healthcare professional on what is best for your baby.”
- “The Department of Health recommends exclusive breastfeeding for the first six months. Unless otherwise advised by your health professional solid food should not be started any earlier than 4-6 months.”
- “The Department of Health recommends exclusive breastfeeding for the first 6 months. If you choose to wean earlier our ingredients are suitable after 4 months.”
- “From about 4 months*. *Consult your Health Visitor. The Department of Health recommends exclusive breastfeeding for first six months.”

Of the 23 labels that recommend introducing complementary foods from six months of age, 100% expanded upon this message with the addition of one of the following messages:

- “Since babies' growth rates are different consult your health professional for advice on when to introduce complementary foods.”
- “Introduction of this food earlier than is recommended must be done under the guidance of your healthcare professional.”
- “Since babies vary in their needs, consult your healthcare professional for advice on when to introduce this product to your child.”
- “Too early introduction of this food must be done under the guidance of your healthcare professional.”

4.3.6 Preparation and use

Although almost all of the product labels provided instructions for the appropriate preparation and use of the product, only 110 (68.8%) labels included safety messages in the preparation and use instructions (**Question 7.4**, Table 4.5). Table 4.10 presents the categorised preparation and use instructions provided on 154 (96.3%) labels, while Table 4.11 provides the categorised safety messages (as a subset of the instructions for the preparation and use of the product) provided on 110 labels.

Table 4.10 Preparation and use instructions used on complementary food labels (n=154)

Categories of preparation/use instructions	Number of labels	Percentage of labels
Add: Milk (optional/additional to water)	4	2.6
Add: Sugar / fruit juice / honey	5	3.2
Consistency: Adjust as desired	4	2.6
Consistency: Smooth / Avoid lumps	26	16.9
Feeding table	24	15.6
How often: As many times per day as desired	1	0.6
How to feed: Feed child	21	13.6
How to feed: Self feed / Finger foods	13	8.4
How to feed: Keep drinking times short	10	6.5
How to feed: Use a cup	16	10.4
How to feed: Use a sipper cup	10	6.5
How to feed: Use straw	5	3.2
Mixing: Milk but no water	9	5.8
Mixing: Milk or water	4	2.6
Prep: Dilute	8	5.2
Prep: Don't dilute / Already diluted	2	1.3
Prep: Microwave	29	18.8
Prep: Shake before use	15	9.7
Prep: Stir before use	16	10.4
Quantity: Gradually increase	19	12.3
Serving suggestions: Other	18	11.7
Type of milk: Baby's usual milk	20	13.0
Type of milk: Breast milk / formula milk / usual milk / milk / fresh milk	6	3.9
Type of milk: Fresh milk	1	0.6
Type of milk: Milk	11	7.1
Use as advised by HP	15	9.7
When: Any time of day	4	2.6
When: Before sleep time	1	0.6
When: Between meals	4	2.6
When: In between playtime / Playtime	2	1.3
When: Only at snack / meal times	11	7.1

Table 4.11 Safety messages used on complementary food labels (n=110)

Categories of safety messages	Number of labels	Percentage of labels
Use clean/wash surfaces/equipment/utensils	51	46.4
Wash hands	28	25.5
Use as advised by health professional	27	24.5
Test temperature before feeding	26	23.6
Use boiled/clean water	24	21.8
Allow to cool	23	20.9
Child sitting while eating	16	14.5
Supervision during feeding	16	14.5
Microwave with care	12	10.9
Open just before heating	4	3.6
Feed from bowl not bottle	3	2.7
Use boiled/pasteurized milk	3	2.7
Child sitting supported while eating	2	1.8
Cup feed	1	0.9
Feed slowly	1	0.9
Introduce one variety at a time	1	0.9
Remove lid before microwaving	1	0.9

Half of the products included in the study were “ready-to-eat/drink”, more than a third (35.6%) were “instant” products (add water/milk/water or milk), and just less than a third (31.8%) required heating/defrosting/defrosting and heating. Only a small percentage of products required cooking (3.9%), and 21.3% of products could be prepared/used in more than one way.

Of the six (3.8%) labels that did not provide preparation and use instructions, all were ready-to-eat/drink products (three fruit purees in a foil pouch with nozzle; one fresh fruit puree in a bottle; one yoghurt; one flavoured water). Of the 50 products that didn't provided safety associated preparation and use messages, 17 (34%) were fresh or frozen foods, 16 (32%) were homogenised or puréed foods, and 11 (22%) were teas, waters of juices, with a smaller percentage of snacks or finger foods, cereals or porridges and milkshake powders.

4.3.7 Consistency

While a recommendation to feed the product with a spoon was not applicable for 53 (33.1%) labels, only 22 (20.6%) of the applicable labels included the recommendation and 16 (15%) “Partially” included this recommendation by using an image of a feeding spoon and thus implying the recommendation (Question 7.5, Table 4.5). Eight (5%) labels recommended feeding the product in a bottle (Question 8, Table 4.5), of which one was porridge and seven were teas. As only nine tea products were included in the study, this means that 77.8% of tea

products recommended feeding the product in a bottle. Two (1.3%) labels carried an image of a feeding bottle (Question 9, Table 4.5) – a porridge and a tea.

Applicable only to the 44 cereal/porridge labels, just one (2.3%) cereal/porridge recommended feeding the product in a soft or semi-soft form (Question 10, Table 4.5) by providing the instruction to “mix into a smooth paste”. Seven (15.9%) cereal/porridge labels qualified for a partial answer, three labels by using the descriptive name “baby’s soft porridge” and four labels by using an image of the product heaped on a spoon. Only one (0.6%) label (a cereal/porridge) provided instructions on how “to prepare as a drink”, and two (1.3%) labels used an image of the product pouring off the spoon (Question 11, Table 4.5).

4.3.8 Daily Ration

None of the labels recommended a daily ration, however it could be calculated for 12 (7.5%) labels as both a serving size and recommended number of servings a day was provided for these products (**Question 7.6**, Table 4.5). In total, 75 (46.9%) labels provided a serving size, while only 16 (10%) provided a recommended number of servings a day, of which 11 recommended two servings, four recommended three servings and one recommended one serving a day.

Most labels (74.4 to 92.5%) did not provide sufficient information to determine if a daily ration of the product exceeded the recommended energy intake from complementary foods for a breastfed child (**Question 12**, Table 4.5). For children 6-8.9 months and children 9-11.9 of age, only one (0.6%) label per age group clearly specified a daily ration providing energy within the recommended energy intake from complementary foods for a breastfed child. This figure increased marginally to 12 (7.5%) for children 12-23.9 years of age. Nineteen (12%) labels suggested a daily ration too large for a breastfed child for either the 6-8.9 months age category, the 9-11.9 months age category, or both.

4.3.9 Storage

One hundred and fifty (93.8%) labels provided instructions for safe and appropriate storage (**Question 7.7**, Table 4.5). Table 4.12 provides more information on the kind of storage instructions provided per product category. Cereal/Porridge, snack/finger food and fresh/frozen food labels provided mainly general storage instructions, and fresh/frozen foods were the most common source of general length of storage instructions. Homogenised/Puréed food and tea/juice/water focused on storage after opening of the product (both manner and length of storage) – with 100% of fruit juice labels having providing such instructions. Gravy/Soup and

milkshake powder commonly provided both general storage instructions and instructions on storage after opening the product.

Table 4.12 Types of storage instructions provided per product category on complementary food labels (n=160)

Categories of storage Instructions	C/P n=41 (%) ^a	H/P n=38 (%) ^a	S/F n=22 (%) ^a	G/S n=1 (%) ^a	F/F n=24 (%) ^a	MP n=3 (%) ^a	T/J/W n=31 (%) ^a	Total n=160 (%) ^a	Example text from labels
Storage after opening	21 (51.2)	35 (92.1)	9 (40.9)	1 (100.0)	6 (25.0)	2 (66.7)	21 (67.7)	95 (59.4)	<i>Reseal bag after use.</i>
General storage	36 (87.8)	0	16 (72.7)	1 (100.0)	17 (70.8)	3 (100.0)	18 (58.1)	91 (56.9)	<i>Store in a cool dry place.</i>
Length of storage after opening	14 (34.1)	38 (100)	8 (36.4)	0	6 (25.0)	0	21 (67.7)	87 (54.4)	<i>Use within 4 weeks of opening.</i>
Storage before opening	0	8 (21.1)	0	0	6 (25.0)	0	1 (3.2)	15 (9.4)	<i>Store unopened jars in a cool dry place.</i>
General length of storage	3 (7.3)	0	0	0	12 (50.0)	0	0	15 (9.4)	<i>Can be frozen for up to 2 months.</i>
None	2 (4.9)	0	3 (13.6)	0	1 (4.2)	0	4 (12.9)	10 (6.3)	
Storage conditions to avoid	0	0	1	0	1 (4.2)	0	0	2 (1.3)	<i>Avoid exposure to direct sunlight and humidity.</i>

C/P, Cereal/Porridge; H/P, Homogenised/Puréed food; S/F, Snacks / Finger Food; G/S, Gravy/Soup; F/F, Fresh/Frozen Food; MP, Milkshake Powder; T/J/W, Tea/Juice/Water.

^aPercentage of (n).

4.3.10 Warnings

One hundred and thirty-three (83.1%) labels provided one or more warning, which highlighted the health hazards/potential risks of inappropriate preparation, use and storage of the product or cautioned against certain practices (preparation, use or storage practices) (**Question 13**, Table 4.5). Table 4.13 presents a list of warnings that have been categorised into themes, with the most commonly provided warning being to “Never leave a child alone with food or drink”, which was used by 49 (36.8%) of the labels carrying warnings.

Table 4.13 Warnings used on complementary food labels (n=133)

Categories of warnings	Number of labels	Percentage of labels
Warnings related to use/feeding		
Never leave child alone with food or drink	49	36.8
Do not use if safety button is up	24	18.0
Too early introduction of this food must be done under guidance of your healthcare professional	21	15.8
Juice / sweetened liquids can cause tooth decay	21	15.8
Dental care	20	15.0
Not to be used as a milk substitute	15	11.3
Ensure child is sitting while feeding	14	10.5
Do not feed directly from the container	13	9.8
Not suitable for children under x months	8	6.0
Keep cap away from children	8	6.0
Do not use if seal is broken	7	5.3
Not intended as a meal replacement	3	2.3
Ensure jar and cap are undamaged	3	2.3
Never force feed your baby	3	2.3
Every care has been taken but (fruit) stone fragments may remain	2	1.5
Only feed to children accustomed to chewing solid food	1	0.8
Only give to babies when they are developmentally ready	1	0.8
Feed from a clean spoon (never a bottle)	1	0.8
Keep to the recommended dosage	1	0.8
	215	161.7
Warnings related to storage		
Discard unfinished food/drink	35	26.3
Do not reheat	12	9.0
Do not refreeze	4	3.0
Since this product contains viable bacteria follow the instructions as per storage	2	1.5
	53	39.8
Warnings related to preparation		
If microwaving take care	12	9.0
Do not sweeten	10	7.5
Do not microwave in packaging	8	6.0
Your baby's milk but no water shall be used for mixing in accordance with medical advice	7	5.3
Do not add salt	5	3.8
Do not heat in the microwave	3	2.3
Heat breast milk with care	2	1.5
Use of a wet spoon could result in powder clumping	2	1.5
Follow the preparation instructions exactly	2	1.5
Do not cook or use boiling water	1	0.8
	52	39.1

4.3.11 Images

Images of infants or young children were used on 63 (39.4%) labels, of which 37 (58.7%) used images of infants that appeared to be younger than six months, and 10 (15.9%) used images classified as “unclear” (as defined in Addendum D, Question 14) (**Question 14**, Table 4.5). The physical or developmental milestones displayed by these images of infants/young children are listed in Table 4.14, the most common of which were “hands-and-knees crawling” and “sitting with support”.

Table 4:14 Physical or developmental milestones displayed by images of infants/young children used on complementary food labels (n=63)

Physical or developmental milestones	Number of labels	Percentage of labels
Hands-and-knees crawling ^a	12	19.0
Sitting with support ^b	12	19.0
Other/unclear milestones:	11	17.5
Self-feeding - grasping food with whole hand and bringing to mouth	5	7.9
Toddler ^c sitting without support	3	4.8
Toddler ^c sitting with support	2	3.2
Toddler ^c head shot	1	1.6
Toddlers ^c holding straws and drinking	1	1.6
Toddler ^c holding up oversized vegetables	1	1.6
Toddler ^c jumping	1	1.6
Toddler ^c standing with assistance	1	1.6
Head shot - in mothers arms ^b	8	12.7
Standing with assistance ^a	8	12.7
Head shot ^b	6	9.5
Heavily stylized image ^b	6	9.5
Lying on stomach and pushing up on elbows ^b	5	7.9
Standing alone ^a	5	7.9
Sitting without support ^b	4	6.3
Peddling a tricycle ^a	2	3.2
One or more teeth ^a	1	1.6
Standing on tip toes ^a	1	1.6

^aPhysical or developmental milestones clearly reached after six months of age. ^bPhysical or developmental milestones commonly associated with infants 0-6 months of age. ^cChild one to 3 years old.

The most commonly used images on the complementary food labels included images of the product ingredients/composition (77.5%), images of animals or insects (45.0%) and images of the ready-to-eat/prepared product (40.6%), although many other types of images were used (see Table 4.15).

Table 4.15 Images used on the labels of complementary foods (n=160)

Images	Number of labels	Percentage of labels
Ingredients / Composition	124	77.5
Animals / Insects	72	45.0
Ready-to-eat / Prepared product	65	40.6
Infant/young child	55	34.4
Design elements: Leaves / Trees / Plants / Flowers / Landscapes / Shells	52	32.5
Bowl	44	27.5
Preparation / Use illustrations	37	23.1
Brand mascots	29	18.1
Telephone / Computer Mouse / Email Envelope	28	17.5
Design elements: Hearts	23	14.4
Design elements: Stars / Moon / Sun / Clouds / Rainbow	18	11.3
Jug of milk	18	11.3
Other products	13	8.1
Animals: Babies displaying stages of development	11	6.9
Animals: Mother and babies	11	6.9
Toys	10	6.3
Foods that are not ingredients	9	5.6
Mother's arms embracing	9	5.6
Mother and child	8	5.0
Raw product	8	5.0
Characters / Stick figures	7	4.4
None	6	3.8
Design elements: Traditional pots / Animal Spoor / Clock	4	2.5
Cup / Glass	3	1.9
Staff member	3	1.9
Feeding bottle	2	1.3
Other products: Infant Formula	2	1.3
Sippy cup	1	0.6

4.3.12 Cross promotion

The question of whether products were labelled in a manner that also promoted the company's infant or follow-up formula was only applicable to 32 (20%) labels (**Question 15**, Table 4.5). However, all applicable labels shared similarities with the breast-milk substitute labels manufactured by the same company and were therefore found to cross-promote these products. The most common similarity was a shared brand name, as noted for 21 of the labels. The complete list of similarities is presented in Table 4.16.

Table 4.16 Similarities between the labels of complementary foods and breast-milk substitutes manufactured by the same companies (n=32)

Similarities	Number of labels	Percentage of labels
Similar colour schemes/designs	12	37.5
Similar names:	21	65.6
Brand name	21	65.6
Sub brand name	5	15.6
Similar slogans/mascots/symbols:	29	90.6
Branded ingredients	11	34.4
Brand logo	11	34.4
Brand mascot	4	12.5
Tagline	2	6.3
Symbol: USDA Organic	2	6.3
Symbol: Feeding bottle	1	3.1
Symbol: Gluten free	1	3.1

4.3.13 Nutrition and health claims

Nutrition or health claims were made by 141 (88.1%) labels: 126 (78.8%) labels made nutrient content claims; 117 (73.1%) made nutrient function/other function/IMPLIED health claims; 10 (6.3%) made reduction of disease risk claims; and eight (5.0%) made nutrient comparative claims, as defined in Addendum C field 98-101 (**Question 16-19**, Table 4.5). A full list of each kind of nutrition or health claim found on the labels, with examples, is provided in Addendum F.

The most common nutrient content claims made were for sugar (57 labels), salt (42 labels), vitamin C (38 labels) and iron (28 labels), followed by an equal number of claims (19 labels) made for energy, calcium, zinc and “vitamins and minerals”. The most common nutrient function/other function/IMPLIED health claims were made around the following concepts: “goodness/good” (44 labels); “nutrition” (44 labels); “growth” (39 labels); “health” (31 labels); “development” (29 labels) and “easy to digest” (28 labels). Branded ingredients (as defined in Addendum C field 97) were used on 15 (9.4%) labels, of which 12 were probiotics and three were a combination of vitamins and minerals. The most common reduction of disease risk claims were for eczema (5 labels), followed by an equal number of claims (4 labels) for asthma, diabetes, hyperactivity and obesity.

Non-nutrition/health claims (as defined in Addendum C field 102) were made by 153 (95.6%) labels. The most common claims were regarding additives (114 labels), allergens (90 labels), organic claims (65 labels) and agricultural certification (59 labels). The brand names of 70 labels were also considered to make non-nutrition/health claims. A full list of each kind of non-nutrition/health claim is found in Addendum G.

4.3.14 Other

One hundred and one (63.1%) labels carried an endorsement or text conveying expertise (as defined in Addendum C field 92), a full list of which is provided in Table 4.17.

Table 4.17 Endorsements/Text conveying expertise used on complementary food labels (n=101)

Categories of endorsements/ text conveying expertise	Number of labels	Percentage of labels	Example text from labels
Manufacturer represented as expert	49	48.5	<i>With over 50 years' experience (Manufacturers name) are the pioneers of organic foods and drinks for babies.</i>
Manufacturer endorsement	28	27.7	<i>The (Brand name) logo is our symbol of guaranteed freshness and quality.</i>
Employee endorsement	13	12.9	<i>"Made with organic maize our (Product Name) are a light tasty treat for your growing baby... Our (Product Name) lets your baby interact with different shapes as he develops." (Employee's name), our food developer.</i>
Health practitioner / practice endorsement	12	11.9	<i>We work with (Doctor's name) to come up with tasty recipes using only natural nutrition and yummy organic ingredients. (Doctor's name) recommended.</i>
Research body endorsement	11	10.9	<i>Benefits from (Research institutes name).</i>
Award recipient	5	5.0	<i>Baby and Pregnancy, Best Buy, Readers Award (Year).</i>
"Buy South African" endorsement	1	1.0	<i>Buy South African.</i>
Health foundation endorsement	1	1.0	<i>Approved as part of the (Foundation's name) eating plan.</i>
Individual endorsement	1	1.0	<i>Mum's Own Recipe. Inspired by (Mother's name) for her own baby (Baby's name).</i>

One hundred and fifty-nine (99.4%) labels provided a means by which the consumer could interact with the manufacturer, of which 134 (84.2%) labels provided a website address, 87 (54.7%) labels provided a customer care line and 67 (42.1%) labels provided a regular telephone number. The different types of invitations to interact are listed in Table 4.18.

Table 4.18 Type of invitation to interact with the manufacturer used on complementary food labels (n=159)

Invitation to interact	Number of labels	Percentage of labels
Website address	134	84.2
Customer care line	87	54.7
Telephone number	67	42.1
Postal Address	49	30.8
Email address	25	15.7
Fax number	6	3.8
SMS number	6	3.8
Baby club (join via website)	2	1.3

Rewards were offered on 17 (10.6%) labels, of which 13 labels provided points to be collected towards a reward, two labels offered free gifts upon joining a baby club, one label carried a craft activity on the packaging and one label offered free educational resources. The two products offering free gifts (a free “weaning pack”) upon joining a baby club were manufactured by companies that also manufacture breast-milk substitutes. None of the other rewards were offered by companies manufacturing breast-milk substitutes.

CHAPTER 5: DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1. INTRODUCTION

This chapter presents the discussion, conclusion and recommendations related to the study findings. The results are discussed with reference to the aim of the study, which was to describe the extent to which the labelling practices (as a sub-set of marketing practices) of processed complementary food sold in South Africa comply with international guidance on the marketing of complementary foods that is fully aligned with the principles of the *Code* and subsequent relevant WHA resolutions (the *Draft Guide for Marketing Complementary Foods*).

5.2. MAIN FINDINGS

The labelling practices checklist enabled us to assess the labels of complementary foods against the *Draft Guide for Marketing Complementary Foods* and WHA Resolution 63.23. The checklist results revealed that the labels of complementary foods sold in South Africa do not fully comply with current international guidance on the marketing of complementary foods (the *Draft Guide for Marketing Complementary Foods*), and therefore do not sufficiently protect and promote optimal infant feeding practices. Varied levels of compliance (from 0% to 100% compliance) were observed for the labelling practices checklist questions, and none of the labels were found to be in full compliance with all 19 of the questions. The study hypothesis was therefore accepted.

The extent to which labels on complementary foods sold in South Africa comply with the *Draft Guide for Marketing Complementary Foods*, as well as existing labelling practices in South Africa, will be discussed in section 5.4.

5.3. SAMPLING AND SELECTION OF COMPLEMENTARY FOODS

A three-pronged approach (scoping of the South African processed complementary food market; product purchasing; and cross-checking purchased versus scoped products and purchasing missing products) was employed by this study (as described in section 3.2) in order to include as many processed complementary food labels available to consumers on the South African market as possible. This proved to be necessary as a quarter of the products included in the study would have been missed if the methodology had consisted of a purchasing phase only (see Table 4.2).

The majority (81%) of the products included in the study were purchased in Gauteng (the first province visited), and so it appears that the processed complementary food market in Gauteng

is a good representation of the market in the three study provinces. More than a third of the products included in the study were imported and sold at a premium of between 1.8 and 3.1 times the average price of locally manufactured products. Locally manufactured complementary cereals/porridges cost on average R84.59/kg (ranging from R13.99 to R249.90 per kg), which is 14–16 times more expensive than maize meal (R5.94/kg and R5.28/kg for rural and urban populations respectively, as recorded in South Africa in January 2012) – a staple food for South Africans of all ages (NAMC, 2012).

5.4. COMPLEMENTARY FOOD LABELLING PRACTICES IN SOUTH AFRICA

The results of the labelling practices checklist (Table 4.5) revealed multiple areas where labelling practices for complementary foods in South Africa are not in compliance with the *Draft Guide for Marketing Complementary Foods*. The *Draft Guide for Marketing Complementary Foods* addresses inappropriate complementary food labelling practices, which can be grouped into practices that interfere with optimal breastfeeding practices and practices that increase the risk of inappropriate use of the product (see Table 5.1). The results of the assessment of complementary food labels in South Africa will be discussed with reference to these two groups of practices.

Table 5.1 Inappropriate complementary food labelling practices addressed by the *Draft Guide for Marketing Complementary Foods*^a

1	Practices that interfere with optimal breastfeeding practices by:
1.1	Undermining/discouraging exclusive breastfeeding for the first six months of life / Encouraging the early introduction of complementary foods:
	<ul style="list-style-type: none"> • Recommended age of introduction precedes six months of age (4; 7.1) • Use of images of infants younger/appearing younger than six months of age (14) • Words/phrases implying that the product is suitable for infants younger than six months of age (6) • Instructions on how to feed the product to infants younger than six months of age (5) • Lack of/incorrect/incomplete messages on optimal IYCF practices (7.2; 7.3)
1.2	Encouraging/Neglecting to discourage the use of complementary food as a breast-milk substitute:
	<ul style="list-style-type: none"> • Recommendation to feed with a feeding bottle (8) • Use of an image of a feeding bottle (9) • Recommendation/instructions on how to feed as a liquid, or no recommendation to feed in a soft/semi-soft form (where applicable) (10; 11) • No recommendation to feed with a spoon (where applicable) (7.5)
1.3	Undermining/discouraging breastfeeding:
	<ul style="list-style-type: none"> • Cross-promotion of breast-milk substitutes (15)
1.4	Undermining/discouraging continued breastfeeding after six months and up to two years or beyond:
	<ul style="list-style-type: none"> • Recommending a daily ration that exceeds the energy requirements from complementary foods for a breastfed child (12)^b
2	Practices increasing the risk of inappropriate use of the product:
2.1	Neglecting to ensure good understanding of the label:
	<ul style="list-style-type: none"> • Inappropriate language use (1) • Not making the label easy to read (2; 7.1.1-7.7.1)
2.2	The label not providing “required” label information or providing “required” label information in an insert only (3; 7)
2.3	Lack of instructions for safe and appropriate preparation and use (7.4; 7.6)
2.4	Lack of instructions for safe and appropriate storage (7.7)
2.5	Lack of necessary warnings (13)

^aThe numbers provided in brackets indicate corresponding questions in the labelling practices checklist.

^bThis practice may also reduce a child’s appetite for other local foods forming part of the diet.

5.4.1 Practices that interfere with optimal breastfeeding practices

Undermining exclusive breastfeeding/encouraging early introduction of complementary foods

The global public health recommendation of the 54th WHA (2001) and the *Global Strategy for Infant and Young Child Feeding* (WHO, 2003) to breastfeed exclusively for the first six months of life has been challenged by a number of publications (EFSA NDA, 2009; Fewtrell *et al.*, 2011; Prescott, 2008; Prescott *et al.*, 2008). However, the recently updated systematic review by Kramer and Kakuma (2012) concludes that, although infants should still be individually managed in order to deal appropriately with insufficient growth and other adverse outcomes, the available evidence demonstrates no apparent risks in recommending, as a general policy, exclusive breastfeeding for the first six months of life in both developing- and developed-country settings. The systematic review highlights that infants who are breastfed for three to four months followed by mixed breastfeeding experience greater morbidity from gastrointestinal infections than infants exclusively breastfed for six months, in both developing and developed

countries. Additionally, no benefits of the early introduction of complementary foods (between four and six months) were found, with the exception of improved iron status in one developing-country setting. In such settings, where maternal iron status (and therefore neonate iron stores) may be suboptimal, exclusive breastfeeding for six months without iron supplementation may compromise hematologic status. As medicinal iron supplementation is more effective at improving iron status among infants at risk than the early introduction of complementary feeding prior to six months, the potential benefits of waiting to introduce complementary foods at six months outweigh the potential risks (Kramer & Kakuma, 2012).

Recommending an appropriate age of introduction is one of the most important ways a label can assist caregivers in selecting complementary food products appropriate for their child's age, while reducing the risk of early introduction of complementary foods. However, more than a third of the labels assessed did not provide an appropriate recommended age of introduction, either neglecting to provide a recommendation at all or recommending an age of introduction before six months of age. Failure to provide a clear age recommendation in months or years leaves it to the caregiver to decide on the appropriate age of introduction, neglecting to underscore the importance of linking the child's age to product choice and thus perpetuating the "status quo", while a recommended age of introduction before six months of age undermines exclusive breastfeeding. The fact that almost 90% of the labels that recommended an age of introduction under six months were imported products highlights the need for national legislation that empowers national authorities to exert tighter control over imported complementary foods.

The wording used on labels to convey the recommended age of introduction provided either a starting age or an age range (Table 4.7). Where x is six, use of the wording "From about x months" is inappropriate as such a recommendation indicates that the product may be introduced before six months. Additionally, use of the wording "After x months" or "After x to y months" is not recommended as it is unclear whether x months refers to months of life or age in months. This is significant as a child is five months old during the sixth month of life. It is also uncertain whether the use of a "plus" sign (e.g. "x+ months") is well understood by South African caregivers. Considering the various ways in which the age recommendation can be provided, and the fact that some are clearer than others, it may be beneficial for national governments to prescribe a wording format for complementary food labels that has been tested for understanding among consumers in their country.

Other practices noted that may lead to the early introduction of complementary foods included the use of inappropriate phrases that imply that the product is suitable for infants younger than six months of age, such as "best start in life", "first foods", "for the whole family" and "for starter eaters". Of the words or phrases implying or indicating suitability of use before six months of

age (see Table 4.8), age descriptors (e.g. baby, junior and tots) as well as words or phrases that divide a product line into numbered stages (e.g. stage 1, 2, and 3; step 1, 2 and 3) are only potentially phrases that indicate suitability of use before six months if the product label does not provide an appropriate recommended age of introduction in months or years. As the *Draft Guide for Marketing Complementary Foods* already requires an appropriate age of introduction to be provided, advising against the use of such age descriptors and numbered stages is probably not necessary, although the use of numbered stages using numbers only (e.g. 1, 2, and 3) is not advised as it may not be clear to the consumer that the number reflects a stage rather than an age. However, the use of the remaining terms in Table 4.8 are always inappropriate and should be advised against, and can be added to “from the start”, “for the whole family” or “first stage” (examples provided by the *Draft Guide for Marketing Complementary Foods*) as examples of phrases not to be used on complementary food labels.

The use of stages by a line of complementary food product labels to reflect an increase in food consistency and variety, as appropriate for infants as they grow older (PAHO, 2003), may be a useful way to educate consumers on the need to increase food consistency gradually with age and to assist them in doing so. If used, such stages should support globally accepted public health recommendations such as to progress from puréed, mashed and semi-solid foods at six months, to the addition of “finger foods” by eight months, to family foods of a solid consistency by 12 months (PAHO, 2003).

One label provided a stage and corresponding developmental milestone (“2nd Foods. Sitter”) without providing a recommended age of introduction in months or years (results not shown). The use of stages characterised by physical or developmental milestones to reflect the appropriate time at which to introduce a complementary food product is troublesome as such milestones do not reflect a clear age and may occur before six months of age, thus increasing the risk of early introduction of complementary foods. Such stages may also conflict with the age recommendation provided on the label.

Although only 39% of labels used images of infants, the majority (59%) of these images depicted infants showing physical or developmental milestones commonly associated with infants younger than six months of age, or infants not showing any clear physical or developmental milestone. Such images may undermine exclusive breastfeeding by encouraging the early introduction of complementary foods. The use of appropriate images of infants on complementary food labels, where allowed by national legislation, may be especially important in countries where literacy rates are low.

Low-literacy consumers, although attempting to read relevant text, rely heavily on pictorial information when making purchasing decisions (Jae & Delvecchio, 2004; Jae *et al.*, 2008). A study by Jae *et al.* (2008) on picture-text incongruence in printed advertisements found that, when pictures and accompanying text are incongruent, low-literacy consumers (at or below a sixth-grade reading level) misinterpret advertisements more regularly than high-literacy readers do and are more likely to reflect errors in comprehension based on picture-based processing. A study by Barennes *et al.* (2008) provides a good example of picture-text incongruence. The use of a logo of a cartoon baby bear held by its mother in the breastfeeding position on the front panel of Bear Brand coffee creamer in Laos led nearly half of the adults surveyed to believe that the product is “good for infants” or “a replacement for breast milk”, despite a written warning to the contrary and a picture of a bottle with a cross through it being provided on the back panel (Barennes *et al.*, 2008). Thus it is important that images used on complementary foods are aligned with the textual messages in order to assist low-literacy consumers in correctly comprehending labelling messages, for example, ensuring that a product recommended for use from six months of age does not use a picture of an infant clearly younger than six months. This is a complex matter, and our understanding of the possible unintended negative consequences of, for example, using images of infants appearing much older than six months on complementary food products intended for infants from six months are limited. Literacy rates in South Africa are discussed later in this chapter.

The early introduction of complementary foods is common practice in South Africa, with the average age of introduction reported to be two to three months of age (Faber & Benadé, 2007; Ghuman *et al.*, 2009; Mushaphi *et al.*, 2008). Complementary food labels provide an excellent opportunity to educate the consumer on optimal IYCF practices, however, few labels (12.5%) were found to provide correct and complete messages regarding the importance of exclusive breastfeeding for the first six months of life, while none provided correct and complete messages regarding the introduction of complementary foods from six months combined with continued breastfeeding until two years or beyond.

Many incomplete or incorrect messages were found on the labels included in the study, such as (Examples from Table 4.9):

- “Breastfeeding should continue for as long as possible after introduction of complementary foods”. Breastfeeding self-efficacy (maternal confidence) is significantly related to breastfeeding duration and level (Blyth *et al.*, 2002). This message may subtly undermine a mother’s confidence by calling into question whether it will be possible to breastfeed for an extended period, and should rather recommend continued breastfeeding to at least two years.

- “Breastfeeding is recommended for up to 6 months”. This message, by omitting the term “exclusive breastfeeding” and incorrectly using “up to”, recommends that breastfeeding should be stopped before or by six months of age.
- “Milk feeds should still be the most important part of your baby's diet”. This message recommends “milk feeds” when it should be recommending optimal IYCF practices, and therefore breastfeeding.
- “On average your baby is ready for solids when he or she: Can lift head and place weight on forearms when lying on stomach; Has doubled birth weight; Can hold head steady when sitting fully supported”. Infants generally achieve the first milestone listed by two months of age, the second by five months and the last by four months (WHO; CDC) and therefore such a message encourages the early introduction of complementary foods.
- “Use as part of a varied weaning diet”. The term weaning is understood in many countries to mean the complete cessation of breastfeeding, and so its use should be avoided so as not to imply that complementary foods are intended to replace breast milk instead of complementing it (Monte & Giugliani, 2004).

These examples again highlight the need for messages regarding feeding practices for infants and young children used on complementary food labels to be harmonised with globally accepted public health recommendations that have been endorsed by normative bodies. National Governments may wish to prescribe the messages to be provided on complementary food labels to ensure that the messages provided are correct and well understood. These messages could form part of the national paediatric food-based dietary guidelines if such guidelines exist. The benefit of food-based dietary guidelines is that they are ideally tested for cultural acceptability and comprehension by the target market (WHO, 1998b).

Some of the messages provided by complementary food labels regarding feeding practices for infants and young children were found to be in line with normative guidance (see Box 2.1) and are examples of how complementary food labels can be used to educate caregivers on optimal IYCF. Examples from Table 4.9 include:

- “Juice should never replace a breastfeed”.
- “Home prepared foods are also suitable for infants from 6 months and young children”.
- “From 6 months onwards, in addition to milk and cereals, it is also appropriate to give your baby other complementary foods like meat, fish, vegetables etc.” Note that in this example, “milk” should be replaced by “continued breastfeeding”.

Encouraging/not discouraging the use of complementary foods as a breast-milk substitute

Discouraging the use of complementary foods as breast-milk substitutes is important, especially in nations such as South Africa where cereals and porridges are commonly over-diluted (Kruger & Gericke, 2003) and added to feeding bottles (Chopra *et al.* 2009), and tea is given to infants from as early as the first month of life (Mamabolo *et al.*, 2004) .

Although only a small number of labels (8 labels, 5%) recommended feeding the product in a bottle, it was concerning to note that most (77.8%) tea products carried this recommendation. Such a recommendation may reinforce the erroneous perception held by some South African caregivers that tea is suitable for young infants. The use of feeding bottles also poses a much higher safety risk to the infant (to be discussed in greater detail under “Lack of instructions for safe and appropriate preparation, use and storage and lack of necessary warnings”).

One of the ways in which labels can discourage the use of cereals and porridges in liquid form/as a breast-milk substitute is for labels to recommend that the product be fed in a soft or semi-soft form. This practice was found to be uncommon in South Africa, with only one product label providing this recommendation. A recommendation to feed complementary foods with a spoon may also discourage the use of the product in liquid form, but only a fifth of products which could be fed with a spoon provided this recommendation.

Undermining/discouraging breastfeeding

It was concerning to note that all complementary foods sold by companies that also sell infant or follow-up formula on the South African market were labelled in a way that potentially also promoted the company’s formula products, sharing the same or similar brand names or logos, colour schemes or designs, slogans, mascots or symbols. As the promotion of breast-milk substitutes often negatively affects a mother’s choice and ability to breastfeed her infant optimally, the *Code* bans the promotion of infant formula and other breast-milk substitutes (WHO, 2008a). In many countries complementary foods may be promoted whereas infant and follow-up formula may not. Therefore responsible manufacturers should ensure that their complementary foods and formula products do not share brand identities (the visible elements of a brand), to avoid using their complementary foods to indirectly promote their formula products and thus violate the *Code*.

It is unclear whether using the same or similar branded or trademarked ingredients on complementary food product labels, as was the case for 34% of the products manufactured by infant formula companies (Table 4.16), has the effect of cross-promoting infant or follow-up formula from the same manufacturer. Consumer research is required to answer this question

before further recommendations can be made. The use of the same official certification symbols (e.g. USDA organic, Table 4.16) for all products for infants and young children should be allowed if permitted by national legislation, as such symbols are not uniquely used by one manufacturer. Other symbols created by the manufacturer should not be used on both infant or follow-on formulas and complementary foods.

Undermining/discouraging continued breastfeeding from six months to two years or beyond

The energy needs from complementary foods for infants with “average” breast milk intakes in developing countries are provided in Table 5.2 (PAHO, 2003). These values were calculated by estimating children’s total energy requirements at different ages and subtracting the average energy intake from breast milk (PAHO, 2003). Any feeding recommendations that lead to a greater energy intake from complementary foods are likely to result in reduced consumption of breast milk, and so recommendations regarding intakes of complementary foods should be calculated to provide sufficient but not excessive amounts of energy (Islam *et al.*, 2008). Complementary food labels should, therefore, recommend a daily ration that does not exceed the energy needs from complementary foods, in order to discourage overconsumption of the product which could result in the partial or total displacement of continued breastfeeding as well as other locally available and appropriate foods forming part of the diet (Quinn *et al.*, 2010). From six months of age, caregivers should feed their child a variety of foods to ensure that their nutrient needs are met (PAHO, 2003). Although not required by the *Draft Guide for Marketing Complementary Foods*, it follows that complementary food products should also not recommend a daily ration that provides 100% or near to 100% of the energy needs from complementary foods, in order to allow for variety in the complementary diet. Future work on the development of international guidelines on the marketing of complementary foods should include strengthening the guidance provided on this issue.

Table 5.2 Daily energy needs from complementary foods for the breastfed child

Age (months)	Daily energy needs from complementary foods for the breastfed child [kJ/day (kcal/day)]
6-8	837 (200)
9-11	1,255 (300)
12-23	2301 (550)

Adapted from PAHO (2003)

Over 90% of the labels assessed did not provide a proposed daily ration (or serving and recommended number of servings per day). Thus, for most labels it was impossible to determine whether the recommended daily ration provided energy in excess of the recommended energy intake from complementary foods for the breastfed child. In addition, one

of the functions of a food label is to reduce the potential risks of inappropriate and uninformed use of the product (CIAI, 2007), and so failure to provide a daily ration (or serving and recommended number of servings per day) leaves it up to the consumer to decide on the appropriate use of the product.

Labels should recommend a number of servings a day in line with best practice recommendations, as a meal frequency that is higher than necessary may result in excessive displacement of breast milk (PAHO, 2003). The *Guidelines for Complementary Feeding of the Breastfed Child* (PAHO, 2003) recommends that the average healthy breastfed infant should receive complementary foods 2–3 times a day at 6–8 months of age and 3–4 times a day at 9–11 and 12–24 months, plus 1–2 nutritious snacks per day. Of the small percentage of labels that provided a recommended number of servings a day, one cereal product recommended feeding the product “as many times per day as desired”, which is inappropriate.

5.4.2 Practices increasing the risk of inappropriate use of the product

Neglecting to ensure that the label can be read

Labelling practices that increase the risk of the inappropriate use of a complementary food product, and associated health/safety risks, include: neglecting to ensure that the label can be read by the consumer; not providing “required label information”, or providing it in an insert only; a lack of instructions for safe and appropriate preparation, use and storage; and a lack of necessary warnings.

To be readable, a label needs to be provided in the appropriate language(s) of the country in which the product is sold (Quinn *et al.*, 2010). All labels included in this study were written in at least one official South African language (English), while only 8% of the labels provided some information in more than one official language. Statistics South Africa (Stats SA, 2011) reports that 91.9% of South African adults are literate, which is defined as survey respondents indicating that they have “no difficulty” or “some difficulty” in reading (e.g. books, magazines and newspapers) and writing a letter in at least one language (as opposed to “a lot of difficulty” or “unable to”). However, the data do not specify the language in which the speaker is proficient. As it is likely that individuals over-report or over-estimate their ability to read and write (Posel & Zeller, 2011), the self-reported ability to read and write “very well” in their home language (using a four-graded response option from “not at all” to “very well”) may provide the most accurate measure of adult literacy in a country (Posel, 2011).

South Africa is a multilingual country with 11 official languages, of which nine are African languages, plus English and Afrikaans (Posel & Casale, 2011). English is, however, the

dominant language of public life and business, as well as the language of instruction for most African children (Posel & Casale, 2011). As displayed in Table 5.3, English is the home language of only 9% of all South Africans, while African languages are the home language of 78% of the population (Posel & Casale, 2011). A review of data from the 2008 National Income Dynamics Study (NIDS) by Posel and Zeller (2011) shows that approximately 65% of South African adults are proficient in their home language (the self-assessed ability to read and write “very well” in that language), while only 47% are proficient in the English language. There is a large racial gap in self-assessed language ability, with 42% and 48% of African and Coloured adults respectively reported to be able to read very well in English, while Indian and White adults reported corresponding percentages that are close to double (85% and 83% respectively) (Posel & Zeller, 2011). It is therefore questionable whether the provision of all complementary food label information in English alone is sufficient to ensure that the label can be read by the majority of South African adults who are proficient in at least one language. The addition of one or more official South African languages, together with English, is recommended for at least some complementary food label information, potentially giving priority to IsiZulu, IsiXhosa and/or Afrikaans as the top three home languages in South Africa (Table 5.3). Where space on the label is limited, the use of an insert could be considered. Consideration should also be given to how low-literacy consumers process information so that marketers can better tailor communications and policy makers can ensure that low-literacy consumers receive proper protection (Jae *et al.*, 2008).

Table 5.3 Home language and race in South Africa among adults (15+) in 2008 (percentages)

	African (%)	Coloured (%)	Indian (%)	White (%)	All (%)
IsiNdebele	1.67	0.23	0.06	0.00	1.34
IsiXhosa	22.64	0.91	0.94	0.00	17.98
IsiZulu	29.41	1.11	1.96	0.13	23.38
Sepedi	13.09	0.09	0.00	0.20	10.36
Sesotho	12.32	0.13	0.36	0.03	9.75
Setswana	9.66	0.57	0.00	0.70	7.74
SiSwati	3.04	0.00	0.00	0.00	2.40
Tshivenda	1.95	0.01	0.00	0.02	1.54
Xitsonga	3.92	0.00	0.00	0.00	3.10
Afrikaans	0.78	69.97	4.13	58.08	12.42
English	0.95	26.76	91.49	39.97	9.40
Other	0.57	0.23	1.06	0.88	0.58
	100	100	100	100	100

Note: The data have been weighted to generate population estimates.

Source: Posel & Casale (2011)

Should the South African national government agree that it is necessary to provide some complementary food label information in more than one official language, this requirement will

need to be legislated as it is not currently common practice. In such a case it would be suggested that the following information be provided in more than one language owing to its importance in ensuring that the product is used correctly and does not interfere with breastfeeding nor pose a safety risk to the child: preparation/use instructions; daily ration (serving size and frequency of feeds); storage instructions; warnings; and recommended age of introduction. Instructions for preparation and use were the most commonly translated label information in this study.

Text is considered to be legible if it can easily be read by a person with normal visual acuity under good lighting conditions (CIAA, 2008). Legibility is affected by a number of factors including, but not limited to, typography (e.g. case, print style, print size, space between lines) contrast, layout, colour, printing techniques, packaging shapes and packaging/labelling materials (CIAA, 2008; Mackey & Metz, 2009). However, for the purposes of this study, it was decided to use minimum letter height as an indicator of ease of readability. Although regulated minimum print size does not adequately ensure overall legibility of label information (Mackey & Metz, 2009), and acknowledging that ideally all factors affecting legibility should be considered when assessing food labels, it was felt, nonetheless, that font size is one of the most practical, objective and important factors to measure. This is in line with a number of national regulations which stipulate a minimum font size for label text (Canada, 2006; Food Standards in Australia and New Zealand, 2010; South Africa, 2010; FDA, 2011). Codex does not recommend a minimum font size (reflecting a possible lack of international consensus that is also noted when comparing various national regulations) but calls on national governments to consider this (Codex Alimentarius, 1985a). Thus use was made of the South African minimum font size requirement of 1mm in height for lower-case vowels (South Africa, 2010), as South African labels were being assessed. Of concern was the fact that almost two thirds of the labels assessed were found to be “not easy to read”, in that required label information was relegated to text smaller than 1mm in letter height, one of the smallest minimum print sizes found in the national regulations investigated (Canada, 2006; Food Standards in Australia and New Zealand, 2010; South Africa, 2010; FDA, 2011). Ideally, required label information should be larger than the minimum print size and so manufacturers should prioritise this information, sacrificing the space allocated to non-required/promotional text as necessary.

Just over 80% of single serving product labels were not “easy to read” compared to 64% of all products. It is possible that single serving products have smaller labels and therefore less space and smaller text. However label sizes were not measured. It was also found that on average, the largest text on the labels assessed was 10 times taller than the smallest text, which seems to indicate that a redistribution of label space with smaller differences in text sizes may be possible.

Not providing required label information or relegating it to an insert

Of the label information required by the *Draft Guide for Marketing Complementary Foods*, the most commonly provided information included instructions for safe and appropriate storage (93.8%), followed by warnings (83.1%), instructions for safe preparation and use (68.8%) and an appropriate age recommendation (65%). Less common was the provision of a recommendation to feed with a spoon (13.8%), messages regarding the importance of exclusive breastfeeding for the first six months of life (12.5%) and the addition of complementary foods from six months with continued breastfeeding up to two years or beyond (0%), and a proposed daily ration and serving (or recommended number of servings per day and serving) (7.5%). All labels should provide such required information, except in cases where such information is not applicable (see Addendum D). Although not stipulated as required label information by the *Draft Guide for Marketing Complementary Foods* (and the provision of which was therefore not assessed in this study), an ingredients list, nutrition information, a batch number and best before date are required for breast-milk substitutes by the *Code* (WHO, 1981) and should, therefore, also potentially be considered required label information for complementary food products.

The use of inserts is not common practice for complementary foods sold in South Africa, but could offer an opportunity to provide required label information in additional languages where space on the label is limited. This may be important in countries such as South Africa where there are 11 official languages.

Lack of instructions for safe and appropriate preparation, use and storage and lack of necessary warnings

Most labels assessed provided warnings as well as instructions for appropriate preparation, use and storage of the product. Of concern is the small number of products that did not provide this information, as well as nearly 30% of the labels that failed to include safety messages in their preparation and use instructions.

One of the most important reasons for providing safety messages as part of the preparation and use instructions on complementary food labels is to prevent gastrointestinal illness. Diarrhoea is the third leading cause of mortality worldwide in children under five years of age, accounting for an estimated 11% (0.801 million) of the 7.6 million deaths of under-fives in 2010, surpassed only by pneumonia and preterm birth complications (Liu, 2012). In South Africa diarrhoea is estimated to be the fourth leading cause of mortality in children under five, after AIDS, preterm birth complications and pneumonia (Liu, 2012). In addition to its contribution to mortality, persistent diarrhoea can also contribute to malnutrition, reduced resistance to infections, and, at times, even impaired growth and development (Ejemot-Nwadiaro *et al.*, 2008).

Almost 90% of diarrhoea cases worldwide are attributable to a lack of access to safe drinking water, inadequate sanitation and poor hygiene (Prüss-Ustün *et al.*, 2008). In 2009, 38% (7 million) of South African children lived in households without access to clean drinking water on site, and 37% (6.8) lived in households without adequate sanitation facilities – making use of unventilated pit latrines, buckets or open land (Jamieson *et al.*, 2011).

Diarrhoea-causing pathogens can be transmitted from faeces to people through person-to-person contact, direct contact with faeces or through water and food (Ejemot-Nwadiaro *et al.*, 2008). There is a high incidence of diarrhoeal disease during the first two years of life, with a peak incidence usually occurring between 6–11 months of age (Semba & Bloem, 2008), a time when the intake of complementary food increases. Therefore, practising good hygiene and proper food handling during complementary food preparation and feeding is essential to prevent microbial contamination of foods (PAHO, 2003). Hand washing with soap, one of a range of hygiene promotion interventions that can reduce the faecal-oral transmission of pathogens, has been associated with a 48% reduction in the risk of diarrhoea (Cairncross *et al.*, 2010). The *Guidelines for Complementary Feeding of the Breastfed Child* (PAHO, 2003) provides the following guideline: “Practise good hygiene and proper food handling by a) washing caregivers’ and children’s hands before food preparation and eating, b) storing foods safely and serving foods immediately after preparation, c) using clean utensils to prepare and serve food, d) using clean cups and bowls when feeding children, and e) avoiding the use of feeding bottles, which are difficult to keep clean”.

In line with this guidance, a number of the labels assessed provided safety messages to “use clean/wash surfaces/equipment/utensils”, “wash hands” or to “feed from bowl not bottle” (Table 4.11). However, considering the importance of hand washing, all complementary food labels should carry a safety message with regards to “washing caregivers’ and children’s hands before food/beverage preparation and eating/drinking”. Ready-to-eat food (food requiring no further cooking, washing, or preparation), in particular, should carry a hand washing safety message as hand contact with such foods is a potentially important mechanism by which diarrhoea-causing pathogens contaminate food and water (Ejemot-Nwadiaro *et al.*, 2008). Therefore, the fact that a product is ready-to-eat does not exempt it from providing preparation and use instructions as hand washing instructions should be provided as a minimum. The six labels in the study that did not provide any preparation and use instructions were all ready-to-use products. Moreover, there is no reason why the 50 labels that failed to provide safety messages as part of the preparation and use instructions should be exempt from doing so. At the very least they should provide hand washing messages, but additional safety messages would be appropriate, depending on the product category.

The safety message to “use boiled/clean” water is appropriate for cereals/porridges, juices/tea and soups/gravies to which water must be added. Other safety messages not dealing with hygiene but with physical safety were provided on some labels such as “test temperature before feeding” and “allow to cool”, which are appropriate for products that need to be cooked, heated or prepared with hot water. Mamabolo *et al.* (2004) found that a high proportion of mothers in the central region of the Limpopo Province of South Africa force-fed their infants, with 24–28% of infants that were fed complementary foods (by the 1st, 3rd, 6th and 9th months) being force-fed. Messages to “feed slowly” or to provide “supervision during feeding” are thus important as they encourage responsive feeding, in line with PAHO’s guidance to “feed slowly and patiently, and encourage children to eat, but do not force them” and “feed infants directly and assist older children when they feed themselves, being sensitive to their hunger and satiety cues” (PAHO, 2003), but unfortunately, very few of the labels assessed provided such messages (Table 4.11).

Both appropriate and inappropriate preparation and use instructions (categorised into themes in Table 4.10) were found on the labels assessed, for example:

- “Consistency: Adjust as desired” (e.g. “This is only a guide, just add more liquid or cereal if your baby prefers a different consistency”). Such an instruction is inappropriate as it could lead to excessive dilution of the product, thus compromising the energy and nutrient density of the product.
- “How often: As many times per day as desired” (e.g. “Can be eaten as many times per day as desired”). The feeding frequency of complementary foods affects infants’ consumption of breast milk, and so a meal frequency that is greater than necessary (as is the case with this recommendation) may cause excessive displacement of breast milk (Islam *et al.*, 2008; PAHO, 2003).
- “How to feed: Use a cup”. Eleven of the 16 labels (beverages and soup) providing this instruction recommended using a cup only, while five of these labels (teas) recommended using a cup or bottle. Two tea labels recommended using a bottle only. Avoidance of bottle-feeding is advisable because bottles may cause greater displacement of breast milk than cups (although evidence is lacking) and because they increase the risk of contamination in settings with poor environmental sanitation (Dewey & Brown, 2003). A study conducted by Black *et al.* (1989) in peri-urban Peru found that 35% of bottle nipples were contaminated with *E. coli* (an indicator of faecal contamination) as well as 31% of teas fed in baby bottles, compared with only 2% of teas fed in cups. Therefore, recommending cup-feeding of beverages marketed for infants six months and older is appropriate, while recommending bottle-feeding is not. Ideally beverages marketed for this age group should recommend cup-feeding and warn/advise against bottle-feeding.

- “Quantity: Gradually increase” (e.g. “Start by giving only 2 teaspoons... and gradually increase the amount up to one whole meal”). Such instructions are useful as they educate the consumer on appropriate use of the product using concepts from best practice recommendations, such as “Start at six months of age with small amounts of food and increase the quantity as the child gets older, while maintaining frequent breastfeeding” (PAHO, 2003).

The Codex *General Standard for the Labelling of Pre-packaged Foods* requires the labels of all pre-packaged foods to provide a date of minimum durability and to declare any special conditions for the storage of the food if the validity of the date depends on it (Codex Alimentarius, 1985a). In addition to these requirements, the Codex *Standard for the Labelling of and Claims for Pre-packaged Foods for Special Dietary Uses* (which includes foods for infants and young children) requires that “Storage instructions of opened packages of a food for special dietary uses shall be included on the label if necessary to ensure that the opened product maintains its wholesomeness and nutritive value” (Codex Alimentarius, 1985b). The complementary food labels assessed performed well against the guidance of the *Draft Guide for Marketing Complementary Foods* to “provide instructions for safe and appropriate storage” with over 90% of labels providing storage instructions. They also performed well against the Codex requirements with almost all products that must be stored in a different manner after opening (homogenised/puréed foods and fruit juices) providing instructions on storage after opening (e.g. “Refrigerate after opening”) and length of storage after opening (e.g. “Use within 2–3 days after opening”). Those products that tended to provide general storage instructions (cereal/porridge, snacks/finger food and fresh/frozen foods) are those that are typically stored in a similar manner before and after opening.

The *Draft Guide for Marketing Complementary Foods* recommends including “stipulated warnings (e.g. health hazards of inappropriate preparation or excess consumption if product is highly fortified)”. No warnings were found against “the excess consumption of highly fortified foods”, and a number of warnings were provided against inappropriate preparation (Table 4.13), although not always providing a reason for the warning (i.e. prevention of the associated health hazard). The Codex *Standard for the Labelling of and Claims for Pre-packaged Foods for Special Dietary Uses* (which includes foods for infants and young children) requires that “A warning should be included on the label if the food is not capable of being stored after opening or is not capable of being stored in the container after opening”. No such warnings were found on the labels assessed.

Food handling practices that are responsible for food-borne disease episodes include preparing food several hours prior to its consumption and storing it at temperatures which favour the

growth of pathogenic bacteria as well as insufficient cooking or reheating of foods to reduce or eliminate pathogens (WHO cited by Wisner and Adams, 2002). For this reason, the WHO (cited by Wisner & Adams, 2002) in its “Golden Rules for Safe Food Preparation” recommends that cooked food be eaten immediately and that foods should be prepared freshly and for one meal only as far as possible. Foods prepared in advance or leftovers must be stored below 5°C and thoroughly reheated to at least 70°C before eating. The second most frequently provided warning on the labels assessed (“Discard unfinished food/drink”, Table 4.13) is in keeping with these recommendations as well as with the PAHO (2003) guideline to “Practise good hygiene and proper food handling by storing foods safely and serving foods immediately after preparation”. Examples of this warning included “After feeding discard unfinished cereal remaining in bowl”; “Discard any uneaten food if eaten straight from the jar”; “Do not use leftovers”; “Always prepare fresh food for your baby” and “Do not keep unfinished prepared portion/drink”. A small number of labels also provided the following related warnings: “Do not feed directly from the container” and “Do not reheat”.

There are many warnings that could potentially be provided on complementary food labels, as is currently the case in South Africa (see Table 4.13), and the *Draft Guide for Marketing Complementary Foods* does not provide a definition for “specified warnings”. Thus manufacturers should ensure that their product labels carry the warnings required by national legislation and that they address the most important risks associated with the incorrect preparation, use and storage of their category of complementary food product, giving consideration to current practices amongst their target market and best practice recommendations.

5.5. GAPS IN THE AVAILABLE GUIDANCE ON THE LABELLING OF COMPLEMENTARY FOODS

The data capture form, which was used together with the data capture key (Addendum C) to gather the information required to complete the labelling practices checklist (Addendum D) for each label, generated examples of complementary food labelling practices by documenting existing practices of South African complementary food labels. Analysis of these practices revealed some inappropriate practices which were not detected by the labelling practices checklist as they were not dealt with in the *Draft Guide for Marketing Complementary Foods*. This section will discuss these practices and offer suggestions on how a guide on the marketing of complementary foods could deal with such practices.

It was noted that 75% of the 20 labels that state the importance of exclusive breastfeeding undermine or weaken this message by adding a qualifying statement that either creates doubt as to the relevance of the exclusive breastfeeding message for the individual child, or contradicts the message by referring to an age preceding six months as a suitable age for introduction of complementary foods (e.g. “The Department of Health recommends exclusive breastfeeding for the first six months. If you choose to wean earlier our ingredients are suitable after 4 months.”). Similarly, all of the 23 labels that recommend introducing complementary foods from six months of age also recommend consulting a health professional for advice on when to introduce complementary foods as “babies vary in their needs” and “babies’ growth rates are different” or refer the consumer to a health professional should they decide to introduce the food earlier than recommended. These recommendations may have been provided by manufacturers on the basis of the *Codex Standard for Processed Cereal-based Foods for Infants and Young Children* (Codex Alimentarius, 2006) which states that “the label shall include a statement indicating that the decision when precisely to begin complementary feeding, including any exception to six months of age, should be made in consultation with a health worker, based on the individual infant’s specific growth and development needs”. Quinn *et al.* (2010) argue that the *Guiding Principles for Complementary Feeding of the Breastfed Child* (PAHO, 2003), which explicitly call for the introduction of complementary foods at six months of age, supersede this recommendation. These guiding principles are based on a *WHO Expert Consultation on the Optimal Duration of Exclusive Breastfeeding* (WHO, 2001b) that considered the results of a systematic review of the evidence. The 2012 update of the original systematic review by Kramer and Kakuma (2012) supports recommending, as a general policy, exclusive breastfeeding for the first six months of life in both developing- and developed-country contexts. Messages regarding feeding practices for infants and young children provided by complementary food labels should not contradict, undermine, offer an alternative to or imply an exception to the recommendations of Code and WHA resolutions, other normative guidance such as the *WHO Global Strategy for Infant and Young Child Feeding* (WHO, 2003) and the *Guiding Principles for Complementary Feeding of the Breastfed Child*, and should be consistent with and supportive of national nutrition policy. This does not negate the need for health professionals to manage infants individually and to address adverse outcomes appropriately (Kramer & Kakuma, 2012).

Images of baby animals displaying physical or developmental milestones (Table 4.15), such as sitting with support, sitting without support and hands-and-knees crawling, were used on 11 labels. In the same way that images of infants displaying physical or developmental milestones achieved before six months of age is considered inappropriate for use on complementary foods, so too are images of baby animals displaying such milestones, as they are used to communicate the same message to the consumer. If national legislation bans the use of images

of infants on complementary food labels, so too should it ban images of baby animals (or mother and baby animals, as found on 11 labels) as these images are used to substitute for images of infants. Other inappropriate images included pack shots of infant formula used on two labels to promote the manufacturer's infant formula range – a clear violation of the *Code* which bans the promotion of infant formula.

The *Draft Guide for Marketing Complementary Foods* was published before WHA Resolution 63.23, and so does not incorporate article 1(4) of the resolution, which urges member states “to ensure that nutrition and health claims shall not be permitted for foods for infants and young children, except where specifically provided for, in relevant Codex Alimentarius standards or national legislation” (WHA, 2010). Relevant Codex Alimentarius texts (Codex Alimentarius, 1981; Codex Alimentarius, 1991; Codex Alimentarius, 1997; Codex Alimentarius, 2006) do not currently make specific provision for claims on complementary foods outside of what is allowed by national legislation. Thus in the absence of specific provision for claims in national legislation, no nutrition or health claims are allowed for complementary foods. Because the aim of this study was to assess labelling practices against international guidance and not against national legislation, no attempt was made to determine the appropriateness of the nutrition and health claims used on complementary food labels in South Africa. However, questions were added to the labelling practices checklist to determine their presence and examples of claims made were captured using the data capture form and are presented in Addendum F. Considering that the use of nutrition and health claims was found to be common-place in South Africa (almost 90% of the labels carried nutrition and/or health claims), it is clear that a guide for marketing complementary foods should address the issues raised by WHA63.23 and clarify whether any nutrition and health claims should be considered for inclusion in national legislation.

As almost two thirds of the complementary foods labels in this study carried an endorsement or text conveying expertise (Table 4.17), it is recommended that national governments decide whether such text/endorsements are acceptable and under which conditions. They should be regulated in order to ensure that the consumer is protected against falsely generated confidence.

Two products from the same company, that also manufactures breast-milk substitutes, offer consumers a “free weaning pack” upon joining their baby club. Article 5.5 of the *Code* states that “marketing personnel, in their business capacity, should not seek direct or indirect contact of any kind with pregnant women or with mothers of infants and young children” (WHO, 1981). As the *Code* provides no exceptions, this restriction applies to all marketing personnel working for a company that manufactures products within the scope of the *Code*, even those personnel

involved only in marketing complementary foods. Using complementary food labels to motivate mothers of infants and young children to join a manufacturer's baby club by providing them with free gifts, and therefore creating contact between marketing personnel and mothers, is a violation of the *Code*. Even though the *Draft Guide for Marketing Complementary Foods* deals with this issue in the advertising and promotion section of the guide, a guide on marketing of complementary foods should also deal with this issue specifically in the labelling section.

5.6. LIMITATIONS AND PROBLEMS ENCOUNTERED IN THIS STUDY

Despite the steps taken in the study design to include as many processed complementary food labels available to consumers on the South African market as possible, there is a small chance that some complementary food products may have been missed. The study was conducted in three of the nine South African provinces, and did not include independent retailers (local/neighbourhood supermarkets, township supermarkets or spaza shops) nor did it specifically target rural areas. It is therefore possible that locally/regionally manufactured and sold complementary foods may have been missed, but less likely that the products of key manufacturers and distributors of nationally distributed products will have been missed as these should have been identified through the Nielsen Company's data (see Chapter 3).

5.7 CONCLUSION

This study demonstrates that labelling practices of processed complementary foods in South Africa do not fully comply with international guidance on the marketing of complementary foods (the *Draft Guide for Marketing Complementary Foods*) and so do not sufficiently protect and promote optimal IYCF practices, revealing much room for improvement. It also highlights practices not dealt with by the *Draft Guide for Marketing Complementary Foods* that need to be addressed by formal guidelines, and provides examples of appropriate and inappropriate labelling practices observed in South Africa. Although the *Draft Guide for Marketing Complementary Foods* is in draft form and requires some improvement to close existing gaps, its use in this study has confirmed the need for the guidance it provides.

Labelling practices were noted that may interfere with optimal IYCF practices (by undermining exclusive breastfeeding for the first six months of life; encouraging the early introduction of complementary foods; encouraging or neglecting to discourage the use of complementary foods as a breast-milk substitute; undermining continued breastfeeding from six months to two years or beyond, and undermining breastfeeding in general) as well as practices that increase the risk of inappropriate use of the product. Thus formal normative clarification and guidance on the

appropriate and inappropriate marketing of complementary foods (including guidelines on labelling) is urgently needed by manufacturers, governments and other interested parties, as requested of the Director-General of the WHO by the 65th WHA.

It cannot be assumed that manufacturers are purposely failing to label complementary foods appropriately, as normative bodies have yet to define the appropriate marketing of complementary foods in a manner similar to the *Code*, which provides clear guidelines on the marketing of breast-milk substitutes. Formal normative guidelines are required in order to assist complementary food manufacturers and to ensure that they can be held accountable for their actions as measured against an accepted standard. However, the fact that some complementary food labels currently sold in South Africa are recommended for use before six months of age indicates that some manufacturers are knowingly breaking the *Code* and subsequent relevant WHA resolutions, further emphasising the need for formal normative guidelines to assist governments in establishing national legislation that implements and enforces such guidance.

Establishing legislation that protects and promotes optimal IYCF practices is an important component of a comprehensive national IYCF strategy (UNICEF, 2011a). This is especially true in developing countries such as South Africa where exclusive breastfeeding rates are poor and mortality rates of under-fives have barely changed since 1990, despite aiming for a two-thirds reduction by 2015 (MDG 4). Not only would legislation on the appropriate marketing (including labelling) of complementary foods hold manufacturers of complementary foods to account, but it could also offer them the opportunity to comply and build the trust necessary for participation as a partner in improving IYCF and ultimately contributing to infant and young child survival, growth and development goals.

5.8 RECOMMENDATIONS

5.8.1 World Health Organization

It is recommended that the WHO make use of the *Draft Guide for Marketing Complementary Foods*, and research conducted using its guidance, as a starting point for the fulfilment of its mandate to “provide clarification and guidance on the inappropriate promotion of foods for infants and young children”, as requested by the Member States of the 65th WHA (WHA, 2012). This mini-dissertation, as well as the article entitled “Field-testing of guidance on the appropriate labelling of processed complementary foods for infants and young children in South Africa” (Sweet et al., 2012) based on its methodology and results, will be sent to the WHO to assist in this process.

5.8.2 South African National Department of Health

It is recommended that the *Draft Guide for Marketing Complementary Foods*, together with the findings of this study, be used by the SA NDoH in finalising the *Regulations Relating to Foodstuffs for Infants and Young Children (R184)* published for comment on 2 March 2012 (South Africa, 2012). Comments on R184, based on the results of this study, were submitted to the SA NDoH in May 2012 for this purpose (see Addendum H).

5.8.3 Manufacturers and distributors of complementary foods sold in South Africa

Results of this study indicate that labelling practices for complementary foods sold in South Africa are not optimal and thus manufacturers and distributors of complementary foods are encouraged to proactively change inappropriate labelling practices and to adopt practices that protect and promote optimal IYCF practices as described by the *Draft Guide for Marketing Complementary Foods* and this study. To ensure that the manufacturers and distributors of the complementary foods included in this study are aware of the results of this study, an email providing the abstract and a hyperlink to the full mini-dissertation will be emailed to them.

5.8.4 International Guidance

A guide that provides criteria, definitions and examples (such as those generated by this research) for marketing complementary foods needs to be developed for international use in order to clarify and strengthen the labelling guidance provided by the *Draft Guide for Marketing Complementary Foods*. In addition to informing the development of formal guidelines by normative bodies, the development of legislation by national governments and the labelling practices of manufacturers and distributors of complementary foods, such a guide should be used to monitor complementary food labels on a regular basis and results reported to companies to encourage improved practices. This study conducted field-testing of the interim guidance provided by the MIYCN WG's *Draft Guide for Marketing Complementary Foods* in South Africa as a potential tool for use by manufacturers and national governments for guiding the appropriate labelling of complementary foods. An assessment of the usefulness of this tool, together with identified shortfalls/gaps and recommendations for improvement, which can be used as the starting point for the development of such a guide, is provided in Addendum E. This mini-dissertation, as well as the article entitled "Field-testing of guidance on the appropriate labelling of processed complementary foods for infants and young children in South Africa" (Sweet et al., 2012), will be sent to the MIYCN WG in response to their call for field-testing of the *Draft Guide for Marketing Complementary Foods* (Quinn et al., 2010).

5.8.5 Further research

This study confirms the need for the guidance provided by the *Draft Guide for Marketing Complementary Foods* and provides suggestions for additional guidance in addressing inappropriate labelling practices observed in South Africa. The study also provides a tested methodology and tool that can be used by other researchers to perform complementary food label assessments. It would be useful for similar research to be conducted in a number of other countries spanning the developing world (Asia, South America, Africa) in order to gather additional data on inappropriate complementary feeding labelling practices that may not be present on the South African market, so that the evidence base for the development of normative guidance on appropriate marketing of complementary foods can be strengthened.

Individual countries should conduct consumer research to determine reading behaviour of caregivers of infants and young children with regard to labels on complementary foods, their level of comprehension of label messages, whether they adhere to label instructions and the extent to which label messages affect the manner in which they feed their child. Such information will be useful in determining how best to communicate required labelling messages (e.g. exclusive and continued breastfeeding messages) and instructions to the consumer, particularly low-literacy consumers, and to standardise these messages for use on labels in the country in which the research is conducted. Such work could potentially form part of the development of national paediatric food-based dietary guidelines.

Research regarding the use of nutrition and health claims on processed complementary foods and their effect on consumers (health knowledge, choices, perceived value, etc.) is needed in order to determine which kinds of nutrition or health claims are harmful or helpful. Such research is needed to inform the Codex process and assist national governments in implementing WHA Resolution 63.23, which states that “nutrition and health claims shall not be permitted for foods for infants and young children, except where specifically provided for, in relevant Codex Alimentarius standards or national legislation”. Such research should also investigate the potential consequences of a ban on all nutrition and health claims on complementary foods, as well as the effect that nutrition and health claims made on other processed foods typically fed to infants and young children but not marketed for infants and young children (and therefore falling outside of the scope of the *Code* and *Draft Guide for Marketing Complementary Foods*) have on the choices made by caregivers of infants and young children.

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ADDENDUM A: LETTER OF REQUEST TO MANUFACTURER/DISTRIBUTOR

Dear Manufacturer/Distributor

Re: REQUEST for information for a study on complementary foods

As a Master's student at the North-West University, I am undertaking a study on the labelling practices of processed complementary foods for infants and young children in South Africa. The aim of this study is to describe the extent to which the labelling practices (as a sub-set of marketing practices) of processed complementary food sold in South Africa comply with international guidance on the marketing of complementary foods that is fully aligned with the principles of the International Code of Marketing of Breast-milk Substitutes (the Code) and subsequent relevant WHA resolutions.

Applications of the research:

Field-generated information on “appropriate” and “inappropriate” complementary food labelling practices will add to a body of evidence that can be used:

- *In the international context:* To inform the development of formal guidelines on the marketing of complementary foods by the World Health Organization (WHO), a process that will be initiated at the next World Health Assembly (WHA);
- *In the local context:* To assist the South African Department of Health in the finalisation of the *Regulations Relating to Foodstuffs for Infants, Young Children and Children*, which are expected to be published for comment in the near future.

Such guidelines and legislation are necessary to provide manufacturers/distributors of complementary foods with clear guidance on the appropriate labelling of complementary foods. Compliance with these regulatory measures is necessary to ensure that complementary food labels protect and promote optimal infant and young child feeding practices, provide consumers with adequate information for the correct, safe and timely use of the product, and ultimately contribute to the reduction of the under-five mortality rate in South Africa.

The study will involve the following:

- One variant of each complementary food available on the South African market will be purchased from leading retailers/wholesalers in Gauteng, KwaZulu-Natal and the Western Cape.
- For the purposes of the study, complementary foods will include all processed complementary food and beverage products marketed for infants and/or young children including, but not limited to: juices, teas and waters; milkshake powders; gravies and soups; homogenised/puréed food; cereals and porridges; snacks/ finger foods; fresh/frozen food. Infant formula, follow-up formula, formula for special dietary or medical purposes and toddler/growing-up milks will not be included in the study.
- The labels will be analysed against labelling guidance provided in:

- The MIYCN Working Group's working paper entitled "*Using the Code of Marketing of Breast-Milk Substitutes to Guide the Marketing of Complementary Foods to Protect Optimal Infant Feeding Practice*"¹, which applies the principles of the Code and subsequent WHA resolutions to the marketing of complementary foods; *and*
- WHA Resolution 63.23 which was passed after the publication of the above mentioned working paper.

Information required

In order to ensure that this study accurately represents the South African processed complementary food market, we request that you kindly provide us with the following information:

1. A complete list of all complementary foods/beverages sold by your company through retail and wholesale channels in South Africa. Please include all brands as well as flavour and size variants.
2. Are any of these products not sold at major retailers/wholesalers in Gauteng, KwaZulu-Natal and the Western Cape? Where can these products be purchased?

Note that the provision of the requested information is voluntary. In the absence of this information, only those products found by the researcher at major retailers/wholesalers in Gauteng, KwaZulu-Natal and the Western Cape will be included in the study.

Please forward this information to larasweet101@gmail.com or fax to (011) 463 0679.

How can you benefit from the study?

- Each product included in the study will receive a product code, and the brand names and manufacturer/distributor's names will also be replaced with codes. The results of the study will be published using coded data – only the researchers will have access to the decoded data. Should you be willing to provide the information required, we will provide you upon request with the full decoded data set for your company's products once the study is finalised.
- This study will contribute towards the development of guidelines for the marketing of complementary foods that will empower companies to appropriately label their complementary food products in a manner that protects and promotes, rather than undermines, optimal infant and young child nutrition and feeding practices.

If you have any questions please feel free to call:

Lara Sweet (M.Sc. Student)	011 463 0679
Dr Averalda Van Graan (Co-Supervisor of M.Sc. dissertation)	018 299 2473
Professor Johann Jerling (Supervisor of M.Sc. dissertation)	018 299 2481

Yours Sincerely,

Lara Sweet

RD (SA) B. Dietetics (Pretoria)

¹ QUINN, V., ZEHNER, E., SCHOFIELD, D., GUYON, A. & HUFFMAN, S. 2010. Using the code of marketing of breast-milk substitutes to guide the marketing of complementary foods to protect optimal infant feeding practices. Geneva: Global Alliance for Improved Nutrition (GAIN). Available for download from: <http://www.gainhealth.org/reports/using-code-marketing-breast-milk-substitutes-guide-marketing>

ADDENDUM B: LETTER OF REQUEST TO RETAILER / WHOLESALER

Dear Retailer/Wholesaler

Re: REQUEST for information for a study on complementary foods

As a Master's student at the North-West University, I am undertaking a study on the labelling practices of processed complementary foods for infants and young children in South Africa. The aim of this study is to describe the extent to which the labelling practices (as a sub-set of marketing practices) of processed complementary food sold in South Africa comply with international guidance on the marketing of complementary foods that is fully aligned with the principles of the International Code of Marketing of Breast-milk Substitutes (the Code) and subsequent relevant WHA resolutions.

Applications of the research:

Field-generated information on “appropriate” and “inappropriate” complementary food labelling practices will add to a body of evidence that can be used:

- *In the international context:* To inform the development of formal guidelines on the marketing of complementary foods by the World Health Organization (WHO), a process that will be initiated at the next World Health Assembly (WHA);
- *In the local context:* To assist the South African Department of Health in the finalisation of the *Regulations Relating to Foodstuffs for Infants, Young Children and Children*, which are expected to be published for comment in the near future.

Such guidelines and legislation are necessary to provide manufacturers/distributors of complementary foods with clear guidance on the appropriate labelling of complementary foods. Compliance with these regulatory measures is necessary to ensure that complementary food labels protect and promote optimal infant and young child feeding practices, provide consumers with adequate information for the correct, safe and timely use of the product, and ultimately contribute to the reduction of the under-five mortality rate in South Africa.

The study will involve the following:

- One variant of each complementary food available on the South African market will be purchased from leading retailers/wholesalers in Gauteng, KwaZulu-Natal and the Western Cape, including [*insert name of national retail/wholesale chain*].
- For the purposes of the study complementary foods will include all processed complementary food and beverage products marketed for infants and/or young children including, but not limited to: juices, teas and waters; milkshake powders; gravies and soups; homogenised/puréed food; cereals and porridges; snacks/ finger foods; fresh/frozen food. Infant formula, follow-up formula, formula for special dietary or medical purposes and toddler/growing-up milks will not be included in the study.

- The labels will be analysed against labelling guidance provided in:
 - The MIYCN Working Group's working paper entitled "*Using the Code of Marketing of Breast-Milk Substitutes to Guide the Marketing of Complementary Foods to Protect Optimal Infant Feeding Practice*"², which applies the principles of the Code and subsequent WHA resolutions to the marketing of complementary foods; *and*
 - WHA Resolution 63.23 which was passed after the publication of the above mentioned working paper.

Information required

In order to ensure that this study accurately represents the South African processed complementary food market, we will attempt to purchase as many of the complementary foods available on the South African retail/wholesale market as possible. Therefore we request that you kindly provide us with the following information:

- The name, address and contact details of the [*insert name of national retail/wholesale chain*] store with the highest turnover in each of the following provinces: Gauteng, KwaZulu-Natal and the Western Cape.

Note that the provision of the requested information is voluntary and will be used to guide us in our choice of store from which the products to be included in the study will be purchased. No financial information is required, and the names of the individual stores will not be published (the store will be referred to as one of the [*insert name of national retail/wholesale chain*] stores with the highest turnover in the Gauteng/KwaZulu-Natal/Western Cape).

Please forward this information to larasweet101@gmail.com or fax to (011) 463 0679.

If you have any questions please feel free to call:

Lara Sweet (M.Sc. Student)	011 463 0679
Dr Averalda Van Graan (Co-Supervisor of M.Sc. dissertation)	018 299 2473
Professor Johann Jerling (Supervisor of M.Sc. dissertation)	018 299 2481

Yours Sincerely,

Lara Sweet

RD (SA) B. Dietetics (Pretoria)

² QUINN, V., ZEHNER, E., SCHOFIELD, D., GUYON, A. & HUFFMAN, S. 2010. Using the code of marketing of breast-milk substitutes to guide the marketing of complementary foods to protect optimal infant feeding practices. Geneva: Global Alliance for Improved Nutrition (GAIN). Available for download from: <http://www.gainhealth.org/reports/using-code-marketing-breast-milk-substitutes-guide-marketing>

ADDENDUM C: DATA CAPTURE KEY

	Data Field	Data Type	Instructions/Definitions/Examples
1	Manufacturer	Text	Full name as provided on label.
2	Importer / Distributor	text	ONLY Importer to/distributor in South Africa. Full name as provided on label. Select NA for locally manufactured products. Select Not Provided for imported “grey products” i.e. imported products without an official importer.
3	Origin	Text	Provide one of these possible answers: Local; Imported.
4	Product name	Text	Product name = Brand Name + Sub Brand name + Descriptive name + Variant.
5	Brand name	Text	The name used to identify the product, which may or may not be registered as a trademark. Usually the largest text on the main panel. It is not the same as the corporate brand, unless the corporate brand name is also used as the product brand name and no other brand name is provided.
6	Sub-brand name	Text	A name given to a group of products falling under the main brand.
7	Descriptive name	Text; None	As provided on the label (describes the true nature of the product) - must be on front of pack.
8	Variant	Text; None	As provided on the label (flavour variants).
9	Single / double serving	Text.	Provide one of these possible answers: Single; Double; NA; Not provided. Check nutrition information, feeding tables and preparation instructions for serving size. May also be found in other label text. NA: Not a single or double serving. Not provided: No serving size provided.
10	Product category	Text	Provide one of these possible answers: Cereal / Porridge; Fresh / Frozen Food; Gravy / Soup; Homogenised / Puréed Food; Milkshake Powder; Tea / Juice / Water; Snacks / Finger Food.
11	Descriptive name category	Text; None provided	E.g. Baby food; Baby rice; Bars, cereal; Bars, dried fruit; Biscuits; Cereal; Dried Fruit; Drink; Fruit and vegetable juice blend, concentrated; Fruit juice; Fruit juice and tea blend; Fruit juice and tea, concentrated; Fruit juice blend; Fruit juice blend, concentrated; Fruit juice with water; Fruit juice, concentrated; Fruit nectar blend with tea; Gravy and soup mix; Meals; Milkshake powder; Muesli; Porridge; Puree; Rice cakes; Rusks; Snacks, other; Snacks, puffed; Tea; Water, flavoured; Yoghurt. None provided: No descriptive name.
12	Intended use	Text	Provide one of these possible answers: Food; Beverage.
13	Storage	Text	Provide one of these possible answers: Shelf stable; Fresh; Frozen. Definition “Fresh food”: Food that is not preserved by canning or dehydration or freezing or smoking.
14	Packaging	Text	Describe type of container (e.g. bottle) and material used where necessary (e.g. glass). E.g. Can; Cardboard box; Foil flow wrap; Foil pouch with nozzle; Glass bottle; Glass jar; Plastic bottle; Plastic flow wrap; Plastic tray; Tetra Brik; Tin.
15	Language(s) - ALL information	Text	ALL label information is written in this/these languages: Provide one or more of these possible answers: English; Other official South African languages; Other languages (not official SA languages).
16	Language(s) - SOME information	Text	Only some (not all) label information is written in this/these languages: Provide one or more of these possible answers: English; Other official South African languages; Other languages (not official SA languages); NA.
17	Information in additional languages	Text	Where only SOME (not all) label information is translated, classify the type of label information translated. Provide one or more of these possible answers: NA; Best before date; Country of origin; Daily ration / Serving size / Frequency of feeds; Descriptive name / variant; Ingredients; Manufacturer; Nutrition information; Preparation / use instructions; Storage instructions; Warnings; Other. NA: When the answer to the previous question was NA.

	Data Field	Data Type	Instructions/Definitions/Examples
18	Number of languages	Numeric	Number of languages on the label.
19	Label information <1mm	Text	Label information that is smaller than 1mm in letter height. Provide one or more of these possible answers: None; Other label information; Age of introduction; Batch number; Best before date; Daily ration / Serving size / Frequency of feeds; Ingredients list; Message regarding BF / addition of CF; Nutrition information; Preparation / use instructions; Recommendation to feed with a spoon; Storage instructions; Warnings. Measuring letter height: <ul style="list-style-type: none"> • Measure the height of an upper case letter where words appear in upper case OR measure the height of a lower case letter “o” when words appear in sentence case (or another vowel where there is no “o”). • For the nutrition information table, if any text is <1mm, then nutrition information is <1mm. • If for preparation/use instructions other languages are provided in smaller text, measure the smallest text. • When text sizes are variable in a section, measure the smallest text.
20	Letter height - largest text	Numeric	Letter height (mm) of the largest text on the label: Round off to the nearest mm.
21	Letter height - smallest text	Numeric	Letter height (mm) of the smallest text (required label information only) on the label: Round off to the nearest mm (therefore letters less than 1mm will equal 1mm for the purposes of this question)
22	Smallest text as % of largest text	Numeric	Calculated. Smallest text as % of largest text = Letter height of smallest text on the label / letter height of the largest text on the label *100.
23	Insert	Text	Is there an insert? Provide one of these possible answers: Yes; No. Definition of “Insert”: printed information (excluding the product label) that is inserted into the product or affixed to it e.g. a package insert, fix-o-form, under-lid leaflet, information printed on the reverse side/backing of a “peel-away”/removable label or on the reverse side of the packaging.
24	Information found in insert	Text	What information is found in the insert? Provide one or more of these possible answers: NA; Non-required information; Required label information also provided on the label; Required label information not provided on the label. NA: No insert. Definition of “Required label information”: Age of introduction; Message regarding exclusive BF for the first six months; Message regarding the addition of CF at six months/continued BF to 2 years and beyond; Preparation / use instructions; Storage instructions; Daily ration / Serving size / Frequency of feeds; Warnings; Ingredients list; Nutrition information; Batch number; Best before date.
25	Other insert information	Text; NA	Provide a description of “non-required information”. Where text may work towards/against the principles of the <i>Code</i> , type out text. NA: No insert / Required label information only.
26	Age of introduction	Text; None	Age of introduction: In months or years (not age descriptors e.g. baby or toddler) - as provided on label.
27	From x months	Numeric; NA	Age of introduction - from x months: Provide x in months.
28	To y months	Numeric; NA	Age of introduction - to y months: Provide y in months.
29	Age category	Text; None	Stages or age descriptor (e.g. baby/toddler), but not age in months/years. Does not include the mention of baby/infant etc. in body text.
30	Feeding instructions: < 6 months	Text; None	Instructions indicating how to feed the product to infants younger than six months: Check preparation and use instructions/feeding table for specific mention of infants younger than six months of age. This does not include the “age of introduction” already dealt with.

	Data Field	Data Type	Instructions/Definitions/Examples
31	Phrases: use < 6 months	Text; None	The product label uses words or phrases that may indicate that the product is suitable: for use from birth; for infants younger than six months; for all infants; for the whole family including infants younger than six months e.g. "from the start"; "for the whole family"; "Stage 1"; "first foods" or "first stage". Does not include the use of baby/infant in product descriptor/age category, UNLESS no age of introduction in months/years is provided as most labels use these terms.
32	Feeding practice infants / young children	Text; None	Message regarding feeding practices for infants and young children. Breast-feeding and/or complementary feeding messages/recommendations, including: Any message mentioning breastfeeding or bottle feeding (excluding preparation instructions/nutrition information); Messages/recommendations regarding complementary feeding (suitable complementary food choices, responsive feeding, knowing when infants are ready for solids/timing etc.).
32.1	A. Breastfeeding	Text	Is a message recommending <u>breastfeeding</u> / stating that breastfeeding is best provided? Provide one of these possible answers: Yes; No.
32.2	B. Exclusive	Text	Is <u>exclusive</u> breastfeeding recommended? Provide one of these possible answers: Yes; No.
32.3	C. For first 6 months	Text	Is exclusive breastfeeding for the <u>first six months</u> of life recommended? Provide one of these possible answers: Yes; No.
32.4	D. Add CF from 6 months	Text	Is the addition of CF from six months recommended? Addition from 4 - 6 months (e.g.) doesn't count. E.g. <u>From six months, give (product name) with other foods.</u> Provide one of these possible answers: Yes; No.
32.5	E. Continued breastfeeding	Text	Is continued breastfeeding from six months of age recommended? E.g. From six months, give (product name) with other foods, <u>while continuing to breastfeed.</u> Provide one of these possible answers: Yes; No.
32.6	F. Breastfeed up to 2 years	Text	Is continued breastfeeding up to 2 years (or beyond) recommended? Answer is still yes if the "or beyond" part is not provided. E.g. From six months, give (product name) with other foods, <u>while continuing to breastfeed until 2 years and beyond.</u> Provide one of these possible answers: Yes; No.
33	Exclusive breastfeeding message undermined	Text	Is the exclusive breastfeeding message undermined? E.g. "If you choose to wean earlier our ingredients are suitable after 4 months." Provide one of these possible answers: Yes; No; NA. NA: No exclusive breastfeeding for the first six months of life message (i.e. Answer to 32.A, B and C is No).
34	Introduction of complementary food at 6 months: message expanded	Text	E.g. "Since babies' growth rates are different consult your health professional for advice on when to introduce complementary foods". Provide one of these possible answers: Yes; No; NA. NA: Answer to 32.D is No.
35	Preparation type	Text	Provide one or more of these possible answers: Cook - add milk; Cook - add water; Cook - add water or milk; Defrost; Defrost and heat; Heat; Instant - add milk; Instant - add water; Instant - add water or milk; Ready to eat/drink.
36	Preparation / Use instructions	Text; None	Definition of "Preparation": Instructions for pre-feeding actions, including instructions regarding food safety and hygiene. Exclude descriptors on front of pack e.g. Instant/ just add milk etc. Definition of "Use": Feeding or self-feeding instructions indicating how to utilize the product correctly, including: how to feed (with a spoon, in a cup etc.); how often to feed/when to feed (time of day - not age); serving suggestions etc. Excludes feeding table (indicate if provided) and nutrition information table, but includes body text regarding daily ration/serving size/frequency of feeds. Preparation and use instructions include instructions on how to feed the particular product to the infant, not generic educational information on how infants should be fed - this fits into "messages regarding feeding practices for infants and young children". Any instruction regarding what to do with the product post preparation and

	Data Field	Data Type	Instructions/Definitions/Examples
			use/feeding is either a "Storage Instruction" or "Warning" e.g. "Use on day /within x hours/days/weeks of opening" (Storage) or "Discard and prepared unfed food" (Warning). The following fall into this category: "Your baby's milk, but no water, shall be used for mixing in accordance with medical advice" (Preparation/use and warning); "Your baby's milk or water may be used for mixing in accordance with medical advice".
37	Safety messages	Text	Safety messages are included in preparation / use instructions, and are herein categorised. Provide one or more of these possible answers: None; Allow to cool; Cup feed; Child sitting supported while eating; Child sitting while eating; Feed from bowl not bottle; Feed slowly; Introduce one variety at a time; Microwave with care; [Offer one variety for a few days] ^a ; [Open just before heating] ^a ; [Remove lid before microwaving] ^a ; Supervision during feeding; Test temperature before feeding; Use as advised by health professional; Use boiled/clean water; Use boiled/pasteurized milk; Use clean/wash surfaces/equipment/utensils; Wash hands.
38	Recommend feeding with spoon	Text	Is a recommendation to feed with a spoon provided? Provide one of these possible answers: Yes; No; NA. NA: Milkshake powder / tea / juice / water and snacks / finger food. [Applies to rusks that are used to make porridges.] ^a
39	Image: spoon	Text	Is an image of a spoon used on the label? Spoons used to demonstrate measuring/stirring as part of the preparation instructions do not count. Provide one of these possible answers: Yes; No; NA. NA: Milkshake powder / tea / juice / water and snacks / finger food. [Applies to rusks that are used to make porridges and pureed food products packaged in a pouch with a nozzle.] ^a
40	Recommend feeding with bottle	Text	Is a recommendation to feed the product with a feeding bottle provided? Provide one of these possible answers: Yes; No.
41	Image: feeding bottle	Text	Is an image of a feeding bottle used on the label? Provide one of these possible answers: Yes; No.
42	Recommend feeding in soft form	Text; None; NA	Recommendation to feed the product in a semi-soft/soft form: Must say semi-soft / soft / semi-solid / thick. Smooth does not qualify. NA: For all categories of products except Cereal/Porridge. [Applies to rusks that are used to make porridges.] ^a
43	Image: product heaped on spoon	Text	Is an image of the product heaped on a spoon used on the label? Provide one of these possible answers: Yes; No; NA. NA: For all categories of products except Cereal/Porridge. [Applies to rusks that are used to make porridges.] ^a
44	Image: product pouring off the spoon	Text	Is an image of the prepared product pouring off a spoon used on the label? Provide one of these possible answers: Yes; No; NA. NA: All categories of products except Cereal/Porridge. [Applies to rusks that are used to make porridges.] ^a
45	Recommend feeding as liquid	Text; None; NA	Recommendation to feed the product in a liquid form: E.g. Recommendation to serve as a drink / to serve in a cup / drink with a straw. Excludes recommendation to bottle feed (covered previously). NA: Gravy / Soup Mix; Tea / Juice / Water / Milkshake Powder.
46	Unit of measurement	Text	Provide one of these possible answers: Not provided; g; ml.
47	Net weight / volume	Numeric; Not provided	Weight or volume of the package. If a pack of products: include the combined net weight (e.g. 4 x 330ml = 1320).
48	Cost per net weight / volume	Currency	Total cost per net weight/volume. If a pack of products: include the price of the pack.

	Data Field	Data Type	Instructions/Definitions/Examples
49	Cost per kg / l	Currency; Insufficient information	Calculated. Cost per kg/litre = Total cost per net weight or vol. / Net weight or volume *1000.
50	Nutrition information	Text	Is nutrition information/nutrient declaration provided? Provide one of these possible answers: Yes; No.
51	Energy (kJ / 100g)	Numeric; Not provided	Multiply Cal by a factor of 4.184 to obtain kJ.
52	Serving size	Text	Is a serving size provided? Provide one of these possible answers: Yes; No. Yes: Label must state serving / serving size / portion size / amount per meal or similar, or indicate amount of product in preparation instructions. No: All other cases.
53	Daily ration	Text	Is a daily ration provided? Provide one of these possible answers: Yes; Calculated; No. Yes: Label must provide information on the total quantity / volume of product recommended per day. Calculated: No daily ration provided, but can be calculated by multiplying the serving size and recommended number of feeds per day. No: All other cases.
54	No. servings per day	Numeric; Not provided	Recommended number of servings per day: When a range is provided for an age group, use the upper end of the range. Select "Not provided" for recommendations such as "Can be eaten as many times per day as desired".
55	Age recommendation serving size 1	Text; Not provided; NA	Age for which serving size is recommended: In months, not years (Age+ OR age range). If serving sizes are not provided per age, use the age of introduction. NA: No serving size recommendation
56	Serving size 1	Numeric; Not provided	If a serving size range is provided for one age, use the upper end of range. Not provided: For all products were the answer to "Is a serving size provided" is NO.
57	Cost per serving 1	Currency; Insufficient information	Equals cost per kg or l / 1000 * serving size. Insufficient information: Serving size not provided.
58	Daily ration 1	Numeric; Insufficient Information	Volume / weight. Daily ration = Serving size * recommended number of servings per day. Insufficient information: No daily ration provided / cannot calculate daily ration as number of servings per day not provided.
59	Vol milk added to product 1	Numeric; NA; Not provided	Volume of milk to be added to the product: NA: Milk not added to the product. If the primary preparation instructions recommend using milk or water, base calculations on the addition of milk (highest energy scenario).
60	Energy per serving (no milk) 1	Number; Not provided	Energy: kJ/per serving (no milk): Calculate if not provided. Equals energy per 100 g or ml / 100 * serving size Not provided: Can't be calculated as either serving size or energy / 100g or serving not provided
61	Energy per serving (with milk) 1	Number; Not provided; NA	Energy: kJ/per serving (with milk): NA: products where milk is not added. Where energy values are not provided with milk added to the product, calculate the energy using the following: 281kJ/100ml (follow-on formula) for 6 – 11.9 months; 262kJ/100ml (full cream fresh milk) for the 12 – 23.9 age group.
62	Energy per daily ration (no milk) 1	Number; Insufficient information	Energy: kJ/daily ration (no milk): Calculate if not provided. Equals energy per serving * the recommended number of servings per day.
63	Energy per daily ration (with milk) 1	Number; Insufficient information	Energy: kJ/daily ration (with milk): Calculate if not provided. Equals energy per serving * the recommended number of servings per day.

	Data Field	Data Type	Instructions/Definitions/Examples
64	Age recommendation serving size 2	Text; Not provided; NA	Age for which serving size is recommended: In months, not years (Age+ OR age range). If serving sizes are not provided per age, use the age of introduction. NA: No second age group.
65	Serving size 2	Numeric; Not provided; NA	If a serving size range is provided for one age, use the upper end of range. NB: Field 65 and 74 are for when different serving sizes are recommended for different age groups. Not provided: for all products where the answer to "Is a serving size provided" is NO. NA: No second age group
66	Cost per serving 2	Currency; Insufficient information; NA	Equals cost per kg or l / 1000 * serving size. Insufficient information: Serving size not provided. NA: No second age group.
67	Daily ration 2	Numeric; Insufficient Information; NA	Volume / weight. Daily ration = serving size * recommended number of servings per day. NA: No second age group
68	Vol milk added to product 2	Numeric; NA	Volume of milk to be added to the product: NA: Milk not added to the product / no second age group. If the primary preparation instructions recommend using milk or water, base calculations on the addition of milk (highest energy scenario).
69	Energy per serving (no milk) 2	Number; Not provided; NA	Energy: kJ/per serving (no milk): Calculate if not provided. Equals energy per 100 g or ml / 100 * serving size. Not provided: Can't be calculated as either serving size or energy/100g or serving not provided. NA: No second age group.
70	Energy per serving (with milk) 2	Number; Not provided; NA	Energy: kJ/per serving (with milk): NA: products where milk is not added / No second age group. Where energy values are not provided with milk added to the product, calculate the energy using the following: 281kJ/100ml (follow on formula) for 6–11.9 months; 262kJ/100ml (full cream fresh milk) for the 12–23.9 age group.
71	Energy per daily ration (no milk) 2	Number; Insufficient information; NA	Energy: kJ/daily ration (no milk): Calculate if not provided. Equals energy per serving * the recommended number of servings per day. NA: No second age group
72	Energy per daily ration (with milk) 2	Number; Insufficient information; NA	Energy: kJ/daily ration (with milk): Calculate if not provided. Equals energy per serving x the recommended number of servings per day. NA: No second age group.
73	Age recommendation serving size 3	Text; Not provided; NA	Age for which serving size is recommended: In months, not years (Age+ OR age range). If serving sizes are not provided per age, use the age of introduction. NA: No third age group.
74	Serving size 3	Numeric; Not provided; NA	If a serving size range is provided for 1 age, use the upper end of range. Not provided: For all products where the answer to "Is a serving size provided" is NO. NA: No third age group NB: Numbers 2 and 3 are for when different serving sizes are recommended for different age groups.
75	Cost per serving 3	Currency; Insufficient information; NA	Equals cost per kg or l / 1000 * serving size. Insufficient information: Serving size not provided. NA: No third age group.
76	Daily ration 3	Numeric; Insufficient Information; NA	Volume / weight. Equals serving size * recommended number of servings per day. NA: No third age group.

	Data Field	Data Type	Instructions/Definitions/Examples
77	Vol milk added to product 3	Numeric; NA	Volume of milk to be added to the product: NA: Milk not added to the product / No third age group. If the primary preparation instructions recommend using milk or water, base calculations on the addition of milk (highest energy scenario).
78	Energy per serving (no milk) 3	Number; Not provided; NA	Energy: kJ/per serving (no milk): Calculate if not provided. Equals energy per 100 g or ml / 100 * serving size. Not provided: Can't be calculated as either serving size or energy/100g or serving not provided. NA: No third age group.
79	Energy per serving (with milk) 3	Number; Not provided; NA	Energy: kJ/per serving (with milk): NA: products where milk is not added / No second age group. Where energy values are not provided with milk added to the product, calculate the energy using the following: 281kJ/100ml (follow on formula) for 6 – 11.9 months; 262kJ/100ml (full cream fresh milk) for the 12 – 23.9 age group.
80	Energy per daily ration (no milk) 3	Number; Insufficient information; NA	Energy: kJ/daily ration (no milk): Calculate if not provided. Equals energy per serving * the recommended number of servings per day. NA: No third age group.
81	Energy per daily ration (with milk) 3	Number; Insufficient information; NA	Energy: kJ/daily ration (with milk): Calculate if not provided. Equals energy per serving x the recommended number of servings per day. NA: No third age group.
82	Storage instructions	Text; None	Storage instructions before and after opening. E.g.: Text under the heading "Storage" / "Storage Condition"; Where the product should be stored (before and after opening); Temperature at which product should be stored; "Seal product once open"; "Eat/use within x days/weeks of opening"; "Product may be refrigerated for x hours/days after opening".
83	Warnings	Text; None	Warnings stating the health hazards/potential risks of inappropriate preparation, use and storage or advising against certain practices (preparation, use or storage). Warnings may be preceded by the word "Warning" or "Important Notice". They often begin with "Do not" or imperatives such as "Must" or "Must not". Includes a notice to follow instructions or to keep to the recommended dosage. E.g.: Do not store after opening; "Do not add salt and/or sugar"; "Not suitable for infants under 6 months of age"; "Follow the preparation instructions exactly". NOTE: Allergen information not included.
84	Image: infant / young child	Text	Does the label carry an image (any graphic representation) of an infant/young child (excludes graphics for illustrating methods of preparation or use but includes logos)? Provide one of these possible answers: Yes; No.
85	Milestones	Text	Is the child in the picture demonstrating any of the following developmental or physical milestones? Provide one or more of these possible answers: NA; One or more teeth; Hands-and-knees crawling; Head shot; Head shot - in mothers arms; Heavily stylized image; Holding a toy and shaking it; Holding objects such as a spoon/cup and self-feeding; Kicking a ball; Lying down; Lying on stomach and pushing up on elbows; No teeth; Other; Peddling a bicycle/tricycle; Reclining; Running; Sitting with support; Sitting without support; Standing alone; Standing on tip toes; Standing with assistance; Walking alone; Walking with assistance.
86	Milestones: Other / Unclear	Text; None; NA	Describe "other" physical/developmental milestones displayed by images of a child, where relevant: NA: No image of child on label. None: there is an image of a child but the developmental stage displayed has been captured in the previous question.
87	Images	Text	Describe the images found on the label e.g. Hearts; leaves; baby bear; stick figure etc. Definition of "Image": Photograph, drawing or graphic representation.

	Data Field	Data Type	Instructions/Definitions/Examples
			Exclude: National flags; certification logos (religious, quality, standards etc.); standard symbols e.g. freeze, recycle etc. Consider images included in corporate / brand / endorsement /ingredient logos.
88	Sell breast-milk substitutes in South Africa	Text	Does the company that sells the product in question also sell infant/follow-up formula/breast-milk substitutes (BMS)/Growing-up or toddler milks in South Africa? Provide one of these possible answers: Yes; No.
89	Similar colour schemes/ designs	Text; No; NA	Similar / the same colour schemes or designs used for the product label as for the company's breast-milk substitute label. Check main panel only. Text must describe the similarities. NA: Company does not sell IF/FF/GUM/BMS in SA.
90	Similar names	Text; No; NA	Similar / the same names used for the product label as for the company's breast-milk substitute label (excluding the company name). Check main panel only. Text must describe the similarities. NA: Company does not sell IF/FF/GUM/BMS in SA.
91	Similar slogans/ mascots/ symbols	Text; No; NA	Similar / the same slogans, mascots or other symbols used for the product label as for the company's breast-milk substitute label (excluding the company logo [and official certification symbols, but including symbols created by the manufacturer] ³). Check main panel only. Text must describe the similarities. NA: Company does not sell IF/FF/GUM/BMS in SA.
92	Endorsements/ Text conveying expertise	Text; None	Include: (a) words, pictorial representations, marks, logos or descriptions which create an impression that such a foodstuff is supported, endorsed, complies with or has been manufactured in accordance with recommendations by (i) health practitioners (<i>individually or through any professional or consumer advisory organisation</i>); (ii) organisations, associations, foundations and other entities; (b) an endorsement or testimonial of an individual in the form of a picture, written or verbal statement or in any other form; (c) an endorsement of a manufacturer or seller in the form of a logo, mark, symbol, written or verbal statement or any other manner of communication with regard the <i>nutritional or safety</i> properties of the foodstuff; (d) Statement or claim made on the label which conveys a message that a company name or logo or brand name represents itself as the <i>experts with regard to infant and young child feeding or nutrition</i> . Exclude: (a) Religious certification (Halal, Kosher, Milchik), Organic certification , Fauna and Flora related certifying and endorsing bodies, SABS certification, HACCAP certification, KEBS and any other kind of official certification .
93	Invitation to interact	Text	Invitation to interact with manufacturer: Incentives, enticements or invitations of any nature, including pictures of telephones, help lines or customer care lines, which might encourage consumers to make contact with the manufacturer or distributor of a product. The presence of these forms of contact on the label must be indicated. Provide one or more of these answers: None; Club; Customer care line; Email address; Fax; Postal Address; SMS; Telephone number; Website.
94	Slogans / tagline	Text; None	Definition "Tagline": A slogan or phrase that visually conveys the most important product attribute or benefit that the advertiser wishes to convey. Generally, a theme to a campaign.
95	Toys / Competitions / Rewards	Text; None	Free Toys / Competitions / Rewards scheme: Use text provided on the label.
96	Organic	Text	Does the product label make an organic claim? Provide one of these possible answers: Yes; Partial; No. Partial: Some of the ingredients are organic - not all.
97	Branded ingredients	Text; None	Definition "Branded ingredient": an ingredient or component of a product that has its own brand identity (the ingredient is given a new and novel name which is usually trademarked, and often accompanied by a logo). Provide the name and related text as on the label.

	Data Field	Data Type	Instructions/Definitions/Examples
98	Nutrient content claims	Text; None	Nutrient content claims describe the level of a nutrient contained in a food. Include claims that highlight the absence or non-addition of one or more nutrients or that a food is by its nature low in or free of the nutrient. E.g.: "High in"; "source of"; "enriched with"; "excellent source of"; "fortified with"; "rich in"; "with added"; "contains no"; "free from"; "no added".
99	Nutrient comparative claims	Text; None	Nutrient comparative claims compare the nutrient levels and/or energy value of two or more foods. E.g.: "reduced"; "less than"; "fewer"; "increased"; "more than".
100	Nutrient function / other function claims / implied health claims	Text; None	Health claim means any representation that states, suggests, or implies that a relationship exists between a food or a constituent of that food and health. Nutrient function claims: A nutrition claim that describes the physiological role of the nutrient in growth, development and normal functions of the body. E.g.: "Nutrient A (naming a physiological role of nutrient A in the body in the maintenance of health and promotion of normal growth and development). Food X is a source of/ high in nutrient A." Other function claims: These claims concern specific beneficial effects of the consumption of foods or their constituents, in the context of the total diet on normal functions or biological activities of the body. Such claims relate to a positive contribution to health or to the improvement of a function or to modifying or preserving health. E.g.: "Substance A (naming the effect of substance A on improving or modifying a physiological function or biological activity associated with health). Food Y contains x grams of substance A." Ref Includes: "nutritious"/"nourishing", "wholesome", "goodness", "balanced", "calming"/"soothing", "healthy", "growth"/"development", "gentle on tummies"/"easy to digest".
101	Reduction disease risk claims	Text; None	Reduction of disease risk claims: Claims relating the consumption of a food or food constituent, in the context of the total diet, to the reduced risk of developing a disease or health-related condition. E.g.: "A healthful diet low in nutrient or substance A may reduce the risk of disease D. Food X is low in nutrient or substance A."; "A healthful diet rich in nutrient or substance A may reduce the risk of disease D. Food X is high in nutrient or substance A."
102	Non-nutrition / health claims	Text; None	"Claim" in relation to a foodstuff, means any written, pictorial, visual, descriptive or verbal statement, communication, representation or reference brought to the attention of the public in any manner including a trade name or brand name and referring to the characteristics of a product, in particular to its nature, identity, nutritional properties, composition, quality, durability, origin or method of manufacture or production. E.g. Negative claims; Allergen related claims (e.g. hypoallergenic, gluten-free); Vegetarian claims; Organically grown and biologically grown; GMO Claims; Natural; Pure; Safe; Fresh; Home-made; Religious claims (Halaal, Kosher, Milchik etc.).
103	Other information	Text	Other information that may work towards/against the principles of the Code.
104	Store	Text	Store where purchased.
105	Purchased after cross-check	Text	Was the product identified as a "missing product" after the products purchased in Gauteng, Western Cape and Kwazulu-Natal were compared to the master list of products created during the scoping of the South African complementary food market? Provide one of these possible answers: Yes; No.
106	Province	Text	Province where purchased.
107	Date of purchase	Day / Month / Year	

BF, breastfeeding; BMS, breast-milk substitute; CF, complementary feeding; FF, follow-up formula; GUM, growing-up milk; IF, infant formula. ^aText inside [square brackets] indicates suggested changes to the original data capture key based on the results of the study.

ADDENDUM D: LABELLING PRACTICES CHECKLIST

	Labelling practice questions:	Answers:	Criteria for choosing answers:	Relevant Data Capture Fields ^c :
1	Is the product label written in the appropriate language(s) of the country in which the product is sold?	Yes ^a	All label information is written in one or more official South African languages ^b .	15. Language(s) - ALL info 16. Language(s) - SOME info
		Partial	Some (not all) label information is written in official South African language(s) ^b .	
		No	No label information is written in official South African languages ^b .	
2	Is the product label easy to read?	Yes ^a	All of the required label information ^d on the label is 1mm or greater in height for lower case vowels.	19. Label info < 1mm
		No	Any of the required label information ^d on the label is smaller than 1mm in height for lower case vowels.	
3	Does the insert contain any required label information ^d that is NOT present on the label?	Yes	The insert includes required label information ^d that is NOT provided on the label.	23. Insert 24. Information found in insert
		No ^a	Information provided in the insert is: (a) Required label information ^d that is also provided on the product label; AND/OR (b) Non-required label information.	
		NA	No insert	
4	Does the product label specify a recommended age of introduction that is less than six months of age?	Yes	Recommended age of introduction is less than six months of age (180 days/the seventh month of life).	26. Age of introduction
		No ^a	Recommended age of introduction is six months of age (180 days/the seventh month of life) or later.	
		NA	The label does not specify an appropriate/recommended age of introduction.	
5	Does the product label give instructions indicating how to feed the product to infants younger than six months?	Yes		30. Feeding instructions: < 6 months
		No ^a		
6	Does the product label include phrases such as "from the start"; "for the whole family" or "first stage"?	Yes	The product label uses words or phrases that may indicate that the product is suitable: for use from birth; for infants younger than six months; for all infants; for the whole family including infants younger than six months; PLUS No "age of introduction"/An "Age of introduction" < six months.	31. Phrases: use < 6 months 26. Age of introduction
		Partial	The product label uses words or phrases that may indicate that the product is suitable: for use from birth; for infants younger than six months; for all infants; for the whole family including infants younger than six months; PLUS An "Age of intro" that is ≥ six months.	
		No ^a	The product label doesn't include any such words/phrases.	
7	Does the product label include the following messages:			
7.1	An appropriate age of introduction that is six months (180 days) or more?	Yes ^a	Recommended age of introduction is from six months of age (180 days/the seventh month of life) or later.	26. Age of introduction

	Labelling practice questions:	Answers:	Criteria for choosing answers:	Relevant Data Capture Fields ^c :
		No	Recommended age of introduction is before six months of age (180 days/the seventh month of life); OR No age of introduction is specified.	
7.1.1	Is the message relegated to small print that cannot easily be seen?	Yes	Text is smaller than 1mm in height (for lower case vowels).	19. Label info < 1mm
		No ^a	Text size is a minimum of 1mm in height (for lower case vowels).	
		NA	<i>If the answer to the previous question is "No", select "NA".</i>	
7.2	The importance of exclusive breastfeeding for the first six months of life?	Yes ^a	A message including ALL THREE of the following concepts: Exclusive; Breastfeeding; First six months.	32. Feeding practice infants / young children 32.1 - 32.3
		No	A message including ONE OR TWO of the following concepts: Exclusive; Breastfeeding; First six months; OR No message.	
7.2.1	Is the message relegated to small print that cannot easily be seen?	Yes	Text is smaller than 1mm in height (for lower case vowels).	19. Label info < 1mm
		No ^a	Text size is a minimum of 1mm in height (for lower case vowels).	
		NA	<i>If the answer to the previous question is "No", select "NA".</i>	
7.3	The importance of the addition of complementary foods from six months of age with continued breastfeeding up to two years or beyond?	Yes ^a	A message including ALL THREE of the following concepts: The addition of complementary foods from six months; Continued breastfeeding (from six months); Up to two years or beyond.	32. Feeding practice infants / young children 32.4 - 32.6
		Partial	A message including ONE OR TWO of the following concepts: The addition of complementary foods from six months; Continued breastfeeding (from six months); Up to two years or beyond.	
		No	No message	
7.3.1	Is the message relegated to small print that cannot easily be seen?	Yes	Text is smaller than 1mm in height (for lower case vowels).	19. Label info < 1mm
		No ^a	Text size is a minimum of 1mm in height (for lower case vowels).	
		NA	<i>If the answer to the previous question is "No", select "NA".</i>	
7.4	Instructions for safe and appropriate preparation and use?	Yes	Label provides BOTH of the following: Preparation and use instructions; At least one safety message (preparation or use).	36. Preparation / Use instructions 37. Safety messages
		No ^a	Label provides (a) WITHOUT (b): (a) Preparation and use instructions; (b) At least one safety message (preparation or use).	
		NA	No instructions.	
7.4.1	Is the message relegated to small print that cannot easily be seen?	Yes	Text is smaller than 1mm in height (for lower case vowels).	19. Label info < 1mm
		No ^a	Text size is a minimum of 1mm in height (for lower case vowels).	
		NA	<i>If the answer to the previous question is "No", select "NA".</i>	
7.5	A recommendation to feed the product with a spoon?	Yes ^a	Recommendation to feed the product with a spoon.	38. Recommend feeding with spoon
		Partial	A picture of a spoon is used on the label.	

	Labelling practice questions:	Answers:	Criteria for choosing answers:	Relevant Data Capture Fields ^c :
		No	No recommendation (pictorial or text).	39. Image: spoon
		NA	Select "NA" for Tea/Juice/Water/Milkshake powder AND Snacks/Finger Foods [excluding rusks that are used to make porridges] ^f	
7.5.1	Is the message relegated to small print that cannot easily be seen?	Yes	Text is smaller than 1mm in height (for lower case vowels).	19. Label info < 1mm
		No ^a	Text size is a minimum of 1mm in height (for lower case vowels).	
		NA	If the answer to the previous question is "Partial", "No" or "NA", select "NA".	
7.6	A proposed daily ration and serving (or recommended number of servings per day and serving)?	Yes ^a	Label provides BOTH of the following: A proposed daily ration/recommended number of servings per day; AND Serving size.	52. Serving size 53. Daily ration 54. No. servings per day
		Partial	Label provides ONE of the following: A proposed daily ration/recommended number of servings per day; OR Serving size.	
		No	No proposed daily ration/recommended number of servings per day/serving size.	
7.6.1	Is the message relegated to small print that cannot easily be seen?	Yes	Text is smaller than 1mm in height (for lower case vowels).	19. Label info < 1mm
		No ^a	Text size is a minimum of 1mm in height (for lower case vowels).	
		NA	If the answer to the previous question is "No", select "NA".	
7.7	Instructions for safe and appropriate storage?	Yes ^a		82. Storage instructions
		No		
7.7.1	Is the message relegated to small print that cannot easily be seen?	Yes	Text is smaller than 1mm in height (for lower case vowels).	19. Label info < 1mm
		No ^a	Text size is a minimum of 1mm in height (for lower case vowels).	
		NA	If the answer to the previous question is "No", select "NA".	
8	Does the product label recommend feeding the product in a bottle?	Yes	The product label recommends/gives instructions for how to feed the product in a bottle.	40. Recommend feeding with bottle
		No ^a	The product label makes no mention of bottle feeding.	
9	Does the product label show an image of a feeding bottle?	Yes		41. Image: feeding bottle
		No ^a		
10	Does the product label recommend feeding the product in a soft or semi-soft form?	Yes ^a	Recommendation to feed the product in a soft or semi-soft or semi-solid or thick form (using these words).	42. Recommend feeding in soft form 43. Image: product heaped on spoon
		Partial	No recommendation but uses an image of the product heaped on a spoon; [OR No recommendation but uses the words soft or semi-soft or semi-solid or thick to describe the product.] ^e	
		No	No recommendation or images as described above; OR Recommendation to feed the product in a liquid form.	
		NA	Select "NA" for all categories of products except Cereal/Porridge. [Applies to rusks that	

	Labelling practice questions:	Answers:	Criteria for choosing answers:	Relevant Data Capture Fields ^c :
			<i>are used to make porridges.^f</i>	
11	Does the product label recommend feeding the product in a liquid form?	Yes	Recommendation to feed the product in a liquid form.	45. Recommend feeding as liquid 44. Image of product pouring off spoon
		Partial	No recommendation but uses an image of the product pouring off the spoon.	
		No ^a	No recommendation or image of the product pouring off the spoon.	
		NA	Select "NA" for Gravy/Soup Mix; Tea/Juice/Water/Milkshake Powder.	
12	Does the daily ration (or a recommended serving size combined with a recommended frequency of feeds per day) included on the product label exceed the recommended energy intake from complementary foods for a breastfed child provided below? <i>For products where an age of introduction is not provided, answer the question for all age categories.</i>			55. Age rec. serving size 1 63. Energy per daily ration (with milk) 1 62. Energy per daily ration (no milk) 1 61. Energy per serving (with milk) 1 60. Energy per serving (no milk) 1 64. Age rec. serving size 2 72. Energy per daily ration (with milk) 2 71. Energy per daily ration (no milk) 2 70. Energy per serving (with milk) 2 69. Energy per serving (no milk) 2 73. Age rec. serving size 3 81. Energy per daily ration (with milk) 3 80. Energy per daily ration (no milk) 3 79. Energy per serving (with milk) 3 78. Energy per serving (no milk) 3
12.1	6–8.9 months: 837kJ/day (200Kcal/day)	Yes	Greater than	
		No ^a	Less than or equal to	
		Insufficient Information	No daily ration (nor a recommended serving size combined with a recommended frequency of feeds per day) provided.	
		NA	Product not recommended for this age group (age of introduction from nine months or older).	
12.2	9–11.9 months: 1,255kJ/day (300Kcal/day)	Yes	Greater than	
		No ^a	Less than or equal to	
		Insufficient Information	No daily ration (nor a recommended serving size combined with a recommended frequency of feeds per day) provided.	
		NA	Product not recommended for this age group (age of introduction ≥ 12 months).	
12.3	12–23.9 months: 2301kJ/day (550Kcal)	Yes	Greater than	
		No ^a	Less than or equal to	
		Insufficient Information	No daily ration (nor a recommended serving size combined with a recommended frequency of feeds per day) provided.	
		NA	Product not recommended for this age group (age of introduction ≥ two years).	
13	Does the product label include stipulated warnings?	Yes ^a	Warnings stating the health hazards/potential risks of inappropriate preparation, use and storage or advising against certain practices (preparation, use or storage).	83. Warnings
		No	None	
14	Does the product label include images of babies appearing to be older than six	Yes ^a	Pictures of babies showing achievement of physical or developmental milestones clearly reached after six months of age: Hands-and-knees crawling; Standing with assistance; Standing alone; Walking with assistance; Walking alone; One or more teeth; Peddling a	84. Image: infant / young child

	Labelling practice questions:	Answers:	Criteria for choosing answers:	Relevant Data Capture Fields ^c :
	months of age?		tricycle; Running; Holding objects such as a spoon/cup and self-feeding; Kicking a ball; Standing on tip toes. <i>NB: If the label carries multiple images of children, ALL of the images have to qualify for a “Yes” answer before the answer “YES” can be selected.</i>	85. Milestones 86. Milestones: Other / Unclear
		Unclear	Pictures of babies showing “Milestones: Other / Unclear” (see Addendum C: Data Capture Key). <i>NB: If the label carries multiple images of children, select unclear if none of the images qualify for a “No” answer and at least one qualifies for an “Unclear” answer.</i>	
		No	Pictures of babies showing physical or developmental milestones commonly associated with infants younger than six months of age such as: Lying down; Lying on stomach and pushing up to elbows; Reclining; Sitting with support; Sitting without support; Holding a toy and shaking it; No teeth. OR Head shot of infant (including baby in mothers arms) with no physical or developmental milestones reached after six months displayed. OR Heavily stylized image of a baby with no physical or developmental milestones reached after six months displayed. <i>NB: If the label carries multiple images of babies, even if only one of the images qualifies for a “No” answer, select “No”.</i>	
		NA	No images of infants or young children on the label.	
15	Is the product labelled in a way that also promotes the company's infant or follow-up formula by using similar (a) Colour schemes or designs, (b) Names, (c) Slogans, mascots or other symbols, as used for their infant formula or follow-up formula brands?	Yes	Similarities in one or more of the listed elements.	88. Sell breast-milk substitutes in SA 89. Similar colour schemes/designs 90. Similar names 91. Similar slogans/mascots/symbols
		No ^a	None of the listed similarities.	
		NA	Company doesn't sell infant formula/follow-up formula/breast-milk substitutes in South Africa.	
16	Does the product label make any nutrient content claims?	Yes		98. Nutrient content claims
		No		
17	Does the product label make any nutrient comparative claims?	Yes		99. Nutrient comparative claims
		No		
18	Does the product label make any nutrient function/other function claims?	Yes		100. Nutrient function/ other function claims/ implied health claims
		No		
19	Does the product label make any reduction of disease risk claims?	Yes		101. Reduction of disease risk claims
		No		

NA, not applicable; SA, South Africa. ^aThe answer indicating compliance with the *Draft Guide for Marketing Complementary Foods*. ^bOfficial South African Languages: Afrikaans, English, Ndebele, Northern Sotho, Sotho, Swazi, Tswana, Tsonga, Venda, Xhosa and Zulu. ^cSee Addendum C: Data Capture Key. ^dRequired label information: Age of introduction; Message regarding breastfeeding/addition of complementary feeding; Preparation/use instructions; Storage instructions; Daily ration/Serving size/Frequency of feeds; Warnings; Ingredients list; Nutrition information; Batch number; Best before date. ^eText inside [square brackets] indicates changes to the original checklist based on the results of the study.

ADDENDUM E: ARTICLE

Note: An alternate version of this article will be published in a supplement of the *Maternal and Child Nutrition Journal*:

Sweet L., Jerling J. & Van Graan A. (2012) Field-testing of guidance on the appropriate labelling of processed complementary foods for infants and young children in South Africa. *Maternal and Child Nutrition* (In press).

This version (Addendum E) provides a more detailed methodology than was possible in the final published version.

Field-testing of guidance on the appropriate labelling of processed complementary foods for infants and young children in South Africa

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Abstract

There is a lack of formal guidance from international normative bodies on the appropriate marketing of processed complementary foods. Such guidance is necessary to protect and promote optimal infant and young child feeding practices. The aim of this study is to field-test, in South Africa, the interim guidance provided by the Maternal, Infant and Young Child Nutrition Working Group's Draft Guide for Marketing Complementary Foods as a potential tool for use by manufacturers and national governments for guiding the appropriate labelling (as a subset of appropriate marketing practices) of complementary foods. This guidance was used to develop a checklist of questions and criteria for each possible answer, which was tested using a comprehensive database of labels from products purchased in South Africa from June to August 2011. Label information was captured using a data capture key, then blinded, the order of products randomised and used to complete the checklist. The checklist was comprised of 30 questions, of which two (6.7%) used text that deviated from the original guidance, and 27 (90%) required the addition of criteria to improve the likelihood of the questions being answered correctly. Of the 53 data fields used to capture the information of the 160 labels included in the study, difficulty was experienced in using nine (17%) of the fields. A comparison of the checklist answers for all of the labels revealed disagreements between the answers selected by the two researchers for three (10%) of the checklist questions and 15 (0.3%) of the 4,800 answers. The Draft Guide for Marketing Complementary Foods was found to be a useful tool for guiding the appropriate labelling of complementary foods, although some changes and additions are recommended to improve understanding, ease of use and to minimise the subjective interpretation of the guidance.

Keywords: Complementary food, food labelling, breastfeeding, infant and young child.

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Introduction

The World Health Organization (WHO) recommends that infants be exclusively breastfed for the first six months of life, followed by the introduction of nutritionally adequate and safe complementary foods while breastfeeding continues for up to two years of age or beyond (WHO 2003). Such optimal infant and young child feeding (IYCF) practices play an essential role in child survival, growth and development, and are an important determinant of a child's ability to reach his or her full growth potential and of a nation's economic development and productivity (UNICEF 2011). Poor breastfeeding and complementary feeding practices are the foremost immediate cause of undernutrition during the first two years of life together with high rates of infectious diseases (PAHO/WHO 2003), and their improvement has the potential to reduce by 13% and 6%, respectively, under-five mortality rates annually (Jones *et al.* 2003).

A history of inappropriate marketing of breast-milk substitutes by the food industry (Aguayo *et al.* 2003; Ergin *et al.* 2012; Salasibew *et al.* 2008; Taylor 1998) has contributed to decreased breastfeeding rates in many parts of the world and associated increases in infant morbidity and mortality, especially in resource-poor countries (Brady 2012). In order to protect and promote the practice of breastfeeding, the World Health Assembly (WHA) adopted the International Code of Marketing of Breast-milk Substitutes (the Code) in 1981, a set of recommendations to regulate the marketing of breast-milk substitutes (e.g. infant formula), feeding bottles and teats (WHO 2008). Governments are urged to adopt the Code and subsequent relevant WHA resolutions into national legislation and to monitor its implementation (WHO 1981).

Although complementary foods should complement rather than compete with breast milk in the diet, there are concerns that the inappropriate marketing of processed complementary foods could undermine optimal breastfeeding practices (Piwoz *et al.* 2003; Lutter 2003) by, for example, encouraging the early introduction of complementary foods or recommending an excessively large daily ration of the product that would interfere with continued breastfeeding (Quinn *et al.* 2010). Incorrect use of complementary foods (such as excessive dilution, inadequate or excessive intake and unhygienic preparation) also has the potential to undermine rather than promote good nutrition (Faber *et al.* 2005; Lutter 2003; PAHO/WHO 2003). It is therefore crucial that manufacturers and distributors of complementary foods and national governments receive and implement guidance on how to market these products in a manner that protects and promotes exclusive and sustained breastfeeding as well as the use of a variety of locally available and appropriate foods (Clark & Shrimpton 2000). Supporting optimal IYCF practices also requires ensuring that complementary foods are nutritionally adequate – providing sufficient energy, protein and micronutrients to meet a growing child's needs (WHO 2003).

The Code offers little guidance on the marketing of complementary foods as they are not included in the scope of the Code unless marketed or otherwise represented as a partial or total replacement for breast milk (WHO 2008). The lack of formal guidelines from international normative bodies on the appropriate marketing of complementary food led the member states of the 65th WHA to request that the Director-General “provide clarification and guidance on the inappropriate promotion of foods for infants and young children cited in resolution WHA63.23, taking into consideration the on-going work of the Codex Alimentarius Commission” (WHA 2012).

In recognition of the need for interim guidance, the Maternal, Infant and Young Child Working Group (MIYCN WG) of the Ten Year Strategy to Reduce Vitamin and Mineral Deficiencies (Ten Year Strategy) developed a working paper (Draft Guide for Marketing Complementary Foods) which provides practical guidance on how the marketing of processed complementary foods and supplements can be guided by the Code and subsequent relevant WHA resolutions in a manner that supports optimal IYCF (Quinn *et al.* 2010). This preliminary guidance, if field-tested, could lead to the generation of evidence on what is “appropriate” and “not appropriate” that can inform future guidelines (Quinn *et al.* 2010). The formalisation of such evidence-based guidelines would assist governments in developing legislation protecting and promoting both optimal breastfeeding and complementary feeding practices.

The Ten Year Strategy, comprised of United Nations partners, non-government organisations, donors and private sector companies, was an initiative working for better alignment and a more strategic approach to ending malnutrition, particularly micronutrient malnutrition. The MIYCN WG, one of nine working groups mobilised under the Ten Year Strategy, was established in 2007 and is made up of an interdisciplinary group of members from numerous organizations with the Global Alliance for Improved Nutrition (GAIN) serving as secretariat. The structure, membership and scope of the group has evolved over time and has grown to a virtual network of over 100 global scientists and technical experts committed to a comprehensive life cycle approach to nutrition programming, with a focus on the 1000-day period of development from a child’s conception to her second birthday. Participating members contribute their time to the MIYCN WG, while most consultant and publication costs have in the past been funded by GAIN (E. Zehner, unpublished observations).

One of the MIYCN WG’s specific objectives is to enhance integration of breastfeeding and the other guiding principles of young child feeding with promotion of fortified complementary foods and supplements, which lead to the formation of the “Integration Sub-group”. MIYCN WG members elected to participate in the subgroup and HKI was invited to be the sub-group chair. Several members of the Integration Sub-group (individuals from HKI, GAIN and JSI), in response to the need identified by the MIYCN WG during their first meeting held in Beijing on 28 November 2007, participated in writing the Draft Guide for Marketing Complementary Foods, while other members of the Sub-group and the MIYCN WG provided comment on the document (E. Zehner, unpublished observations).

The Draft Guide for Marketing Complementary Foods offers guidance on key elements of the appropriate marketing of complementary foods and supplements, namely: product labelling; advertising and retail sales promotion to the general public and mothers outside of the health care system; the sale or use of complementary foods and supplements within the healthcare system; provision of information on complementary foods and supplements to health workers; and avoiding conflict of interest between companies that produce and distribute complementary foods and supplements and government health authorities. The Draft Guide does not provide compositional standards for complementary foods and supplements nor guidance pertaining to the nutritional quality of such products.

The aim of this study is to field-test, in South Africa, the Draft Guide for Marketing Complementary Foods as a potential tool for use by manufacturers, distributors and national governments for assessing and guiding the appropriate labelling (as a subset of appropriate marketing practices) of processed complementary foods.

Methods

Tool Development

The labelling guidance provided by the Draft Guide for Marketing Complementary Foods was used to create the labelling practices checklist (Table 1) to be used as a tool to critically assess the labels of processed complementary foods. All of the labelling guidance provided by the Draft Guide for Marketing Complementary Foods was included except for the recommendation to “comply with national laws, regulations and standards for what is permitted and not permitted in a country”, as assessment against country specific laws was outside the scope of this study. The wording used in the checklist questions was taken directly from the Draft Guide for Marketing Complementary Foods. Changes were made (see Table 1) to the original text only when necessary for the sake of clarity, ease of use and checklist design, without straying from the intended meaning of the guidance. Criteria were set for each of the possible answers, as shown in Table 1, in order to minimise the subjective interpretation of the checklist questions.

A data capture form was used to capture the information required by researchers to complete the labelling checklist form. The manufacturer/distributor and product name, as well as other product identifiers, were either replaced with random codes or hidden so that the labelling checklist form was completed in a blinded manner. This was carried out to minimise bias, which would not have been possible if the label analysis was performed directly from the product labels. The form was accompanied by a data capture key (Table 2), which provided clarification on the kind of information to be captured under each field (text, numeric, predefined categories etc.), examples, definitions of terms used and instructions.

Rationale for checklist questions and criteria set for each possible answer

Table 1 provides the checklist of labelling practice questions, based on the labelling guidance (original text) from the Draft Guide for Marketing Complementary Foods, and the criteria for selecting predefined answers. The motivation for the selection of these criteria is now presented per checklist question.

Question 1

The Draft Guide stipulates that the product label be written in the appropriate language(s) of the country in which the product is sold, which in South Africa includes the eleven official South African languages. This guidance requires that all label information be written in a local language, but does not necessarily require that it be written in all or even more than one local language. The need for some or all label information to be provided in more than one local language as well as the choice of local languages will depend on the country in which the product is sold and is therefore ideally decided upon by national government and incorporated into relevant legislation.

Question 2

The recommendation by the Draft Guide to “make the label easy to read” could mean that the label must be legible (text is recognisable/decipherable) or understandable. “Easy to read” in this text was taken to have the same meaning as the use of the text “easily readable” by the Code, which differentiates between the two possible meanings by requiring labels to be both “easily readable” and “understandable” (WHO 1981).

Table 1. Labelling practices checklist and the original text from the Draft Guide for Marketing Complementary Foods

Labelling practice questions:	Answers:	Criteria for choosing answers:	Original text from Draft Guide for Marketing Complementary Foods (Quinn <i>et al.</i> 2010) ^a
1 Is the product label written in the appropriate language(s) of the country in which the product is sold?	Yes ^b	All label information is written in one or more official South African languages.	DO write product label in the local language(s). ^c A product label should be easy to read and written in the appropriate language(s) of the country in which the product is sold. For example, rather than in English or French, the label should be in Swahili for Kenya and Tanzania, Malagasy in Madagascar, and Amharic in Ethiopia.
	Partial	Some (not all) label information is written in official South African language(s).	
	No	No label information is written in official South African languages.	
2 Is the product label easy to read?	Yes ^b	All of the required label information ^e on the label is 1mm or greater in height for lower case vowels.	DO make label easy to read. ^c A product label should be easy to read and written in the appropriate language(s) of the country in which the product is sold.
	No	Any of the required label information ^e on the label is smaller than 1mm in height for lower case vowels.	
3 Does the insert contain any required label information ^e that is NOT present on the label?	Yes	The insert includes required label information ^e that is NOT provided on the label.	DO make label information visible before purchase. ^c DO NOT put label information in an under-lid leaflet. ^c All text should be conspicuous (clearly readable) prior to purchase and not be found in an under-lid leaflet. A product label should not put label information in an under-lid leaflet.
	No ^b	Information provided in the insert is: (a) Required label information ^e that is also provided on the product label; AND/OR (b) Non-required label information.	
	NA	No insert	
4 Does the product label specify a recommended age of introduction that is less than six months of age?	Yes	Recommended age of introduction is less than six months of age (180 days / the 7th month of life).	DO specify an appropriate age of introduction, not to precede six months. ^c DO NOT state a recommended age of introduction that is less than six months. ^c
	No ^b	Recommended age of introduction is six months of age (180 days / the 7th month of life) or later.	
	NA	The label does not specify an appropriate / recommended age of introduction.	
5 Does the product label give instructions indicating how to feed the product to infants younger than six months?	Yes		DO NOT provide instruction on how to feed the product to infants younger than six months. ^c A product label should not give instructions indicating how to feed the product to infants younger than six months*
	No ^b		
6 Does the product label include phrases such as "from the start"; "for the whole family" or "first stage"?	Yes	The product label uses words or phrases that may indicate that the product is suitable: for use from birth; for infants younger than six months; for all infants; for the whole family including infants younger than six months; PLUS No "age of introduction" / An "Age of introduction" < six months	A product label should not include phrases such as "from the start"; "for the whole family" or "first stage"
	Partial	The product label uses words or phrases that may indicate that the product is suitable: for use from birth; for infants younger than six months; for all infants; for the whole family including infants younger than six months; PLUS An "Age of intro" that is equal to or > six months	
	No ^b	The product label doesn't include any such words/phrases.	

Labelling practice questions:	Answers:	Criteria for choosing answers:	Original text from Draft Guide for Marketing Complementary Foods (Quinn <i>et al.</i> 2010) ^a
7	<i>Does the product label include the following messages:</i>		
7.1	Yes ^b	Recommended age of introduction is from six months of age (180 days / the 7th month of life) or later.	DO specify an appropriate age of introduction, not to precede six months. ^c
	No	Recommended age of introduction is before six months of age (180 days / the 7th month of life); OR No age of introduction is specified.	A product label should include the following messages in a prominent manner and not relegated to small print that cannot be easily seen: explicitly instruct that the age for use of the product is six months (180 days) or more.
7.1.1	Yes	Text is smaller than 1mm in height (for lower case vowels).	
	No ^b	Text size is a minimum of 1mm in height (for lower case vowels).	
	NA	<i>If the answer to the previous question is "No", select "NA".</i>	
7.2	Yes ^b	A message including ALL THREE of the following concepts: Exclusive; Breastfeeding; First six months.	DO state in a conspicuous way the importance of exclusive breastfeeding for the first six months. ^d
	No	A message including ONE OR TWO of the following concepts: Exclusive; Breastfeeding; First six months; OR No message.	A product label should include the following messages in a prominent manner and not relegated to small print that cannot be easily seen: emphasize the importance of exclusive breastfeeding for the first six months followed by the addition of complementary foods with continued breastfeeding for two years and beyond.
7.2.1	Yes	Text is smaller than 1mm in height (for lower case vowels).	
	No ^b	Text size is a minimum of 1mm in height (for lower case vowels).	
	NA	<i>If the answer to the previous question is "No", select "NA".</i>	
7.3	Yes ^b	A message including ALL THREE of the following concepts: The addition of complementary foods from six months; Continued breastfeeding (from six months); Up to two years or beyond.	DO encourage continued breastfeeding up to two years or beyond. ^d
	Partial	A message including ONE OR TWO of the following concepts: The addition of complementary foods from six months; Continued breastfeeding (from six months); Up to two years or beyond.	A product label should include the following messages in a prominent manner and not relegated to small print that cannot be easily seen: emphasize the importance of exclusive breastfeeding for the first six months followed by the addition of complementary foods with continued breastfeeding for two years and beyond.
	No	No message	
7.3.1	Yes	Text is smaller than 1mm in height (for lower case vowels).	
	No ^b	Text size is a minimum of 1mm in height (for lower case vowels).	
	NA	<i>If the answer to the previous question is "No", select "NA".</i>	
7.4	Yes ^b	Label provides BOTH of the following: Preparation and use instructions; At least one safety message (preparation or use).	DO provide instructions for safe and appropriate preparation and use. ^c
	Partial	Label provides a) WITHOUT b): (a) Preparation and use instructions; (b) At least one safety message (preparation or use).	A product label should include the following messages in a prominent manner and not relegated to small print that cannot be easily seen: include instructions regarding safe preparation, use and storage of the product.
	No	No instructions.	

Labelling practice questions:	Answers:	Criteria for choosing answers:	Original text from Draft Guide for Marketing Complementary Foods (Quinn et al. 2010) ^a	
7.4.1	Is the message-relegated to small print that cannot easily be seen?	Yes No ^b NA	Text is smaller than 1mm in height (for lower case vowels). Text size is a minimum of 1mm in height (for lower case vowels). <i>If the answer to the previous question is "No", select "NA".</i>	
7.5	A recommendation to feed the product with a spoon?	Yes ^b Partial No NA	Recommendation to feed the product with a spoon. A picture of a spoon is used on the label. No recommendation (pictorial or text). <i>Select "NA" for Tea / Juice / Water / Milkshake powder AND Snacks / Finger Foods [excluding rusks that are used to make porridges]</i> ^f	A product label should include the following messages in a prominent manner and not relegated to small print that cannot be easily seen: recommend feeding with a spoon.
7.5.1	Is the message relegated to small print that cannot easily be seen?	Yes No ^b NA	Text is smaller than 1mm in height (for lower case vowels). Text size is a minimum of 1mm in height (for lower case vowels). <i>If the answer to the previous question is "Partial", "No" or NA, select "NA".</i>	
7.6	A proposed daily ration and serving (or recommended number of servings per day and serving)?	Yes ^b Partial No	Label provides BOTH of the following: A proposed daily ration / recommended number of servings per day; AND Serving size. Label provides ONE of the following: A proposed daily ration/recommended number of servings per day; OR Serving size. No proposed daily ration/recommended number of servings per day/serving size.	DO include proposed daily ration/serving. ^d A product label should include the following messages in a prominent manner and not relegated to small print that cannot be easily seen: promote daily rations that provide energy within the daily requirements for breastfed children.
7.6.1	Is the message relegated to small print that cannot easily be seen?	Yes No ^b NA	Text is smaller than 1mm in height (for lower case vowels). Text size is a minimum of 1mm in height (for lower case vowels). <i>If the answer to the previous question is "No", select "NA".</i>	
7.7	Instructions for safe and appropriate storage?	Yes ^b No		DO provide instructions for safe and appropriate storage. ^c A product label should include the following messages in a prominent manner and not relegated to small print that cannot be easily seen: include instructions regarding safe preparation, use and storage of the product.
7.7.1	Is the message relegated to small print that cannot easily be seen?	Yes No ^b NA	Text is smaller than 1mm in height (for lower case vowels). Text size is a minimum of 1mm in height (for lower case vowels). <i>If the answer to the previous question is "No", select "NA".</i>	
8	Does the product label recommend feeding the product in a bottle?	Yes No ^b	The product label recommends/gives instructions for how to feed the product in a bottle. The product label makes no mention of bottle feeding.	DO NOT recommend feeding product in a bottle. ^c A product label should not recommend that the product can be fed by bottle or show a picture or other image of a feeding bottle.

	Labelling practice questions:	Answers:	Criteria for choosing answers:	Original text from Draft Guide for Marketing Complementary Foods (Quinn <i>et al.</i> 2010) ^a
9	Does the product label show an image of a feeding bottle?	Yes No ^b		DO NOT recommend feeding product in a bottle. ^c A product label should not recommend that the product can be fed by bottle or show a picture or other image of a feeding bottle.
10	Does the product label recommend feeding the product in a soft or semi-soft form?	Yes ^b Partial No NA	Recommendation to feed the product in a soft or semi-soft or semi-solid or thick form (using these words). No recommendation but uses an image of the product heaped on a spoon; [OR No recommendation but uses the words soft or semi-soft or semi-solid or thick to describe the product.] ^f No recommendation or images as described above; OR Recommendation to feed the product in a liquid form. <i>Select "NA" for all categories of products except Cereal/Porridge. [Applies to rusks that are used to make porridges.]</i>	DO recommend feeding product in a soft or semi-soft form. ^d DO NOT recommend feeding product in a liquid form. ^d
11	Does the product label recommend feeding the product in a liquid form?	Yes Partial No ^b NA	Recommendation to feed the product in a liquid form. No recommendation but uses an image of the product pouring off the spoon. No recommendation or image of the product pouring off the spoon. <i>Select "NA" for Gravy / Soup Mix; Tea / Juice / Water / Milkshake Powder.</i>	DO NOT recommend feeding product in a liquid form. ^d
12	Does the daily ration (or a recommended serving size combined with a recommended frequency of feeds per day) included on the product label exceed the recommended energy intake from complementary foods for a breastfed child provided below? <i>For products where an age of introduction is not provided, answer the question for all age categories.</i>			
12.1	6 - 8.9 months : 837 kJ/day (200 Kcal/day)	Yes No ^b Insufficient Information NA	Greater than Less than or equal to No daily ration (nor a recommended serving size combined with a recommended frequency of feeds per day) provided. Product not recommended for this age group (age of introduction from 9 months or older).	DO NOT include a daily ration that exceeds the recommended energy intake from complementary foods for a breastfed child. ^c A product label should not recommend a daily ration for the product (nor a recommended serving size combined with a recommended frequency of feeds per day) that provides the child an amount of calories per day in excess of recommended energy intake from complementary foods for a breastfed child, so as not to interfere with breastfeeding
12.2	9 - 11.9 months : 1,255 kJ/day (300 Kcal/day)	Yes No ^b Insufficient Information NA	Greater than Less than or equal to No daily ration (nor a recommended serving size combined with a recommended frequency of feeds per day) provided. Product not recommended for this age group (age of introduction from 12 months or older).	
12.3	12 - 23.9 months : 2301	Yes	Greater than	

Labelling practice questions:	Answers:	Criteria for choosing answers:	Original text from Draft Guide for Marketing Complementary Foods (Quinn <i>et al.</i> 2010) ^a
kJ/day (550 Kcal)	No ^b	Less than or equal to	
	Insufficient Information	No daily ration (nor a recommended serving size combined with a recommended frequency of feeds per day) provided.	
	NA	Product not recommended for this age group (age of introduction from 2 years or older).	
13 Does the product label include stipulated warnings?	Yes ^b	Warnings stating the health hazards/potential risks of inappropriate preparation, use and storage or advising against certain practices (preparation, use or storage).	DO include stipulated warnings (e.g. health hazards of inappropriate preparation or excess consumption if product is highly fortified). ^c
	No	None	
14 Does the product label include images of babies appearing to be older than six months of age?	Yes ^b	Pictures of babies showing achievement of physical or developmental milestones clearly reached after six months of age: Hands-and-knees crawling; Standing with assistance; Standing alone; Walking with assistance; Walking alone; One or more teeth; Peddling a tricycle; Running; Holding objects such as a spoon/cup and self-feeding; Kicking a ball; Standing on tip toes. <i>NB: If the label carries multiple images of children, ALL of the images have to qualify for a "Yes" answer before the answer "YES" can be selected.</i>	If pictures are permitted, DO include pictures of babies appearing to be older than six months of age and showing achievement of a physical or developmental milestone clearly reached after six months. ^d DO NOT include pictures of babies less than six months of age or appearing to be less than six months of age. ^e If pictures are allowed in the country, include pictures of babies appearing over the age of six months (such as those standing without assistance since this developmental milestone occurs after six months). A product label should not include pictures of babies less than or appearing to be less than six months of age.
	Unclear	Pictures of babies showing "Milestones: Other / Unclear" (See Data capture key). <i>NB: If the label carries multiple images of children, select unclear if none of the images qualify for a "No" answer and at least one qualifies for an "unclear" answer.</i>	
	No	Pictures of babies showing physical or developmental milestones commonly associated with infants 0-6 months of age such as: Lying down; Lying on stomach and pushing up to elbows; Reclining; Sitting with support; Sitting without support; Holding a toy and shaking it; No teeth. OR Head shot of infant (including baby in mothers arms) with no physical or developmental milestones reached after six months displayed. OR Heavily stylized image of a baby with no physical or developmental milestones reached after six months displayed. <i>NB: If the label carries multiple images of babies, even if only one of the images qualifies for a "No" answer, select "No".</i>	
	NA	No images of infants or young children on the label.	

Labelling practice questions:	Answers:	Criteria for choosing answers:	Original text from Draft Guide for Marketing Complementary Foods (Quinn <i>et al.</i> 2010) ^a
15 Is the product labelled in a way that also promotes the company's infant or follow up formula by using similar: <ul style="list-style-type: none"> • Colour schemes or designs; • Names; • Slogans, mascots or other symbols; as used for their infant formula or follow up formula brands?	Yes No ^b NA	Similarities in one or more of the listed elements. None of the listed similarities. Company doesn't sell infant formula/follow-up formula/breast-milk substitutes in South Africa.	If your company also markets infant formula, DO NOT label, advertise or otherwise promote your complementary food or supplement in a way that also promotes your infant formula (i.e. similar colour schemes, promotional slogans etc.). However, your company name or logo is permitted. ^c Although not explicitly addressed by the Code, companies that manufacture and/or distribute infant formula or other breast-milk substitutes in addition to complementary foods or supplements should also ensure that their advertisements or sales promotions for complementary foods or supplements do not have the effect of promoting a company's breast milk substitutes. This includes: <ul style="list-style-type: none"> • Not using similar colour schemes and designs for labels of their complementary food brands as used for their infant or follow up formula brands; • Not using similar names for the complementary food brands as those used for their infant or follow up formula brands; • Not using similar slogans, mascots or other symbols for the complementary food brands as those used for their infant or follow up formula brands.

NA, not applicable. ^a© Copyright GAIN – Global Alliance for Improved Nutrition 2010. Used by permission. ^bThe answer indicating compliance with the Draft Guide for Marketing Complementary Foods. ^cBased on the wording in the Code and subsequent WHA resolutions. ^dRecommended for optimal infant feeding and full compliance with the spirit of the International Code, although not explicitly required by the Code. ^e Required label information: Age of introduction; Message regarding breastfeeding / addition of complementary feeding; Preparation / use instructions; Storage instructions; Daily ration / Serving size / Frequency of feeds; Warnings; Ingredients list; Nutrition information; Batch number; Best before date. ^fText inside [square brackets] indicates suggested changes to the original checklist based on the results of the study.

Table 2. Data capture key

Data Field	Data Type	Instructions/Definitions/Examples
1 Product category	Text	Provide one of these possible answers: Cereal / Porridge; Fresh / Frozen Food; Gravy / Soup; Homogenised / Pureed Food; Milkshake Powder; Tea / Juice / Water; Snacks / Finger Food
2 Language(s) - ALL information	Text	ALL label information is written in this/these languages: Provide one or more of these possible answers: English; Other official South African languages; Other languages (not official SA languages).
3 Language(s) - SOME information	Text	Only some (not all) label information is written in this/these languages: Provide one or more of these possible answers: English; Other official South African languages; Other languages (not official SA languages); NA.
4 Label information below 1mm in letter height	Text	Label information that is smaller than 1mm in letter height. Provide one or more of these possible answers: None; Other label information; Age of introduction; Batch number; Best before date; Daily ration / Serving size / Frequency of feeds; Ingredients list; Message regarding BF / addition of CF; Nutrition information; Preparation / use instructions; Recommendation to feed with a spoon; Storage instructions; Warnings. Measuring letter height: <ul style="list-style-type: none"> • Measure the height of an upper case letter where words appear in upper case OR measure the height of a lower case letter "o" when words appear in sentence case (or another vowel where there is no "o"). • For the nutrition information table, if any text is <1mm, then nutrition information is <1mm. • If for preparation/use instructions other languages are provided in smaller text, measure the smallest text. • When text sizes are variable in a section, measure the smallest text.
5 Insert	Text	Is there an insert? Provide one of these possible answers: Yes; No. Definition of "Insert": printed information (excluding the product label) that is inserted into the product or affixed to it e.g. a package insert, fix-o-form, under-lid leaflet, information printed on the reverse side/backing of a "peel-away"/removable label or on the reverse side of the packaging.
6 Information found in insert	Text	What information is found in the insert? Provide one or more of these possible answers: NA; Non-required information; Required label information also provided on the label; Required label information not provided on the label. NA = No insert Definition of "Required label information": Age of introduction; Message regarding exclusive BF for first six months; Message regarding the addition of CF at six months/continued BF to 2 years and beyond; Preparation / use instructions; Storage instructions; Daily ration / Serving size / Frequency of feeds; Warnings; Ingredients list; Nutrition information; Batch number; Best before date.
7 Age of introduction	Text; None	Age of introduction: In months or years (not age descriptors e.g. baby or toddler) - as provided on label.
8 Feeding instructions: less than 6 months	Text; None	Instructions indicating how to feed the product to infants younger than six months: Check preparation and use instructions/feeding table for specific mention of infants younger than six months of age. This does not include the "age of introduction" already dealt with.
9 Phrases: use less than 6 months	Text; None	The product label uses words or phrases that may indicate that the product is suitable: for use from birth; for infants younger than six months; for all infants; for the whole family including infants younger than six months e.g. "from the start"; "for the whole family"; "Stage 1"; "first foods" or "first stage": Does not include the use of baby/infant in product descriptor/age category, UNLESS no age of introduction in months/years is provided as most labels use these terms.
10 Feeding practice infants / young children	Text; None	Message regarding feeding practices for infants and young children. Breast-feeding and/or complementary feeding messages/recommendations, including: Any message mentioning breastfeeding or bottle feeding (excluding preparation instructions/nutrition information); Messages/recommendations regarding complementary feeding (suitable complementary food choices, responsive feeding, knowing when infants are ready for solids/timing etc.).
11 A. Breastfeeding	Text	Is a message recommending <u>breastfeeding</u> / stating that breastfeeding is best provided? Provide one of these possible answers: Yes; No.
12 B. Exclusive	Text	Is <u>exclusive</u> breastfeeding recommended? Provide one of these possible answers: Yes; No.
13 C. For first 6 months	Text	Is exclusive breastfeeding for the <u>first six months</u> of life recommended? Provide one of these possible answers: Yes; No.
14 D. Add CF from 6 months	Text	Is the addition of CF from six months recommended? Addition from 4 - 6 months (e.g.) doesn't count. E.g. <u>From six months, give (product name) with other foods.</u> Provide one of these possible answers: Yes; No.

Data Field	Data Type	Instructions/Definitions/Examples
15 E. Continued breastfeeding	Text	Is continued breastfeeding from six months of age recommended? E.g. From six months, give (product name) with other foods, <u>while continuing to breastfeed</u> . Provide one of these possible answers: Yes; No.
16 F. Breastfeed up to 2 years	Text	Is continued breastfeeding up to 2 years (or beyond) recommended? Answer is still yes if the "or beyond" part is not provided. E.g. From six months, give (product name) with other foods, <u>while continuing to breastfeed until 2 years and beyond</u> . Provide one of these possible answers: Yes; No
17 Preparation / Use instructions	Text; None	Definition of "Preparation": Instructions for pre-feeding actions, including instructions regarding food safety and hygiene. Exclude descriptors on front of pack e.g. Instant/ just add milk etc. Definition of "Use": Feeding or self-feeding instructions indicating how to utilize the product correctly, including: how to feed (with a spoon, in a cup etc.); how often to feed/when to feed (time of day - not age); serving suggestions etc. Excludes feeding table (indicate if provided) and nutrition information table, but includes body text regarding daily ration/serving size/frequency of feeds. Preparation and use instructions include instructions on how to feed the particular product to the infant, not generic educational information on how infants should be fed - this fits into "messages regarding feeding practices for infants and young children". Any instruction regarding what to do with the product post preparation and use/feeding is either a "Storage Instruction" or "Warning" e.g. Use on day /within x hours/days/weeks of opening (Storage) or "Discard and prepared unfed food" (Warning). The following fall into this category: "Your baby's milk, but no water, shall be used for mixing in accordance with medical advice" (Preparation/use and warning); "Your baby's milk or water may be used for mixing in accordance with medical advice".
18 Safety messages	Text	Safety messages are included in preparation / use instructions, and are herein categorised. Provide one or more of these possible answers: None; Allow to cool; Cup feed; Child sitting supported while eating; Child sitting while eating; Feed from bowl not bottle; Feed slowly; Introduce one variety at a time; Microwave with care; [Offer one variety for a few days] ^a ; [Open just before heating] ^a ; [Remove lid before microwaving] ^a ; Supervision during feeding; Test temperature before feeding; Use as advised by health professional; Use boiled/clean water; Use boiled/pasteurized milk; Use clean/wash surfaces/equipment/utensils; Wash hands.
19 Recommend feeding with spoon	Text	Is a recommendation to feed with a spoon provided? NA for milkshake powder / tea / juice / water and snacks / finger food. [Applies to rusks that are used to make porridges.] ^a Provide one of these possible answers: Yes; No; NA.
20 Image: spoon	Text	Is an image of a spoon used on the label? Spoons used to demonstrate measuring/stirring as part of the preparation instructions do not count. NA for milkshake powder / tea / juice / water and snacks / finger food. [Applies to rusks that are used to make porridges and pureed food products packaged in a pouch with a nozzle.] ^a Provide one of these possible answers: Yes; No; NA.
21 Recommend feeding with bottle	Text	Is a recommendation to feed the product with a feeding bottle provided? Provide one of these possible answers: Yes; No.
22 Image: feeding bottle	Text	Is an image of a feeding bottle used on the label? Provide one of these possible answers: Yes; No.
23 Recommend feeding in soft form	Text; None; NA	Recommendation to feed the product in a semi-soft/soft form: Must say semi-soft / soft / semi-solid / thick. Smooth does not qualify. Select " Not Applicable " for all categories of products except Cereal/Porridge. [Applies to rusks that are used to make porridges.] ^a
24 Image: product heaped on spoon	Text	Is an image of the product heaped on a spoon used on the label? Select " Not Applicable " for all categories of products except Cereal/Porridge. [Applies to rusks that are used to make porridges.] ^a Provide one of these possible answers: Yes; No; NA.
25 Image: product running off the spoon	Text	Is an image of the prepared product pouring off a spoon used on the label (see example image)? Select " Not Applicable " for all categories of products except Cereal/Porridge. [Applies to rusks that are used to make porridges.] ^a Provide one of these possible answers: Yes; No; NA.
26 Recommend feeding as liquid	Text; None; NA	Recommendation to feed the product in a liquid form: E.g. Recommendation to serve as a drink or to serve in a cup or drink with a straw. Excludes recommendation to bottle feed (covered previously). Select " Not Applicable " for Gravy / Soup Mix; Tea / Juice / Water / Milkshake Powder.

Data Field	Data Type	Instructions/Definitions/Examples
27 Serving size	Text	Is a serving size provided? Provide one of these possible answers: Yes; No. Yes: Label must state serving / serving size / portion size / amount per meal or similar, or indicate amount of product in preparation instructions. NO: All other cases.
28 Daily ration	Text	Is a daily ration provided? Provide one of these possible answers: Yes; Calculated; No. Yes: Label must provide information on the total quantity / volume of product recommended per day. Calculated: No daily ration provided, but can be calculated by multiplying the serving size and recommended number of feeds per day. NO: All other cases.
29 No. servings per day	Numeric; Not provided	Recommended number of servings per day: When a range is provided for an age group, use the upper end of the range. Select "Not provided" for recommendations such as "Can be eaten as many times per day as desired".
30 Age recommendation serving size 1	Text; Not provided; NA	Age for which serving size is recommended: In months, not years (Age+ OR age range). If serving sizes are not provided per age, use the age of introduction. NA = No serving size recommendation
31 Energy per serving (no milk) 1	Number; Not provided	Energy: kJ/per serving (no milk): Calculate if not provided. Equals energy per 100 g or ml ÷ 100 x Serving size Not provided: Can't be calculated as either serving size or energy/100g or serving not provided
32 Energy per serving (with milk) 1	Number; Not provided; NA	Energy: kJ/per serving (with milk): NA: products where milk is not added. Where energy values are not provided with milk added to the product, calculate the energy using the following: 281kJ/100ml (follow on formula) for 6-11.9 months; 262kJ/100ml (full cream fresh milk) for the 12-23.9 age group.
33 Energy per daily ration (no milk) 1	Number; Insufficient information	Energy: kJ/daily ration (no milk): Calculate if not provided. Equals energy per serving x the recommended number of servings per day.
34 Energy per daily ration (with milk) 1	Number; Insufficient information	Energy: kJ/daily ration (with milk): Calculate if not provided. Equals energy per serving x the recommended number of servings per day.
35 Age recommendation serving size 2	Text; Not provided; NA	Age for which serving size is recommended: In months, not years (Age+ OR age range). If serving sizes are not provided per age, use the age of introduction. NA: No second age group
36 Energy per serving (no milk) 2	Number; Not provided; NA	Energy: kJ/per serving (no milk): Calculate if not provided. Equals energy per 100 g or ml ÷ 100 x Serving size Not provided: Can't be calculated as either serving size or energy/100g or serving not provided NA: No second age group
37 Energy per serving (with milk) 2	Number; Not provided; NA	Energy: kJ/per serving (with milk): NA: products where milk is not added / No second age group Where energy values are not provided with milk added to the product, calculate the energy using the following: 281kJ/100ml (follow on formula) for 6-11.9 months; 262kJ/100ml (full cream fresh milk) for the 12-23.9 age group.
38 Energy per daily ration (no milk) 2	Number; Insufficient information; NA	Energy: kJ/daily ration (no milk): Calculate if not provided. Equals energy per serving x the recommended number of servings per day. NA: No second age group
39 Energy per daily ration (with milk) 2	Number; Insufficient information; NA	Energy: kJ/daily ration (with milk): Calculate if not provided. Equals energy per serving x the recommended number of servings per day. NA: No second age group
40 Age recommendation serving size 3	Text; Not provided; NA	Age for which serving size is recommended: In months, not years (Age+ OR age range). If serving sizes are not provided per age, use the age of introduction. NA: No third age group
41 Energy per serving (no milk) 3	Number; Not provided;	Energy: kJ/per serving (no milk): Calculate if not provided. Equals energy per 100 g or ml ÷ 100 x Serving size

Data Field	Data Type	Instructions/Definitions/Examples
	NA	Not provided: Can't be calculated as either serving size or energy/100g or serving not provided NA: No third age group
42 Energy per serving (with milk) 3	Number; Not provided; NA	Energy: kJ/per serving (with milk): NA: products where milk is not added / No second age group Where energy values are not provided with milk added to the product, calculate the energy using the following: 281kJ/100ml (follow on formula) for 6–11.9 months; 262kJ/100ml (full cream fresh milk) for the 12–23.9 age group.
43 Energy per daily ration (no milk) 3	Number; Insufficient information; NA	Energy: kJ/daily ration (no milk): Calculate if not provided. Equals energy per serving x the recommended number of servings per day. NA: No third age group
44 Energy per daily ration (with milk) 3	Number; Insufficient information; NA	Energy: kJ/daily ration (with milk): Calculate if not provided. Equals energy per serving x the recommended number of servings per day. NA: No third age group
45 Storage instructions	Text; None	Storage instructions before and after opening. E.g.: Text under the heading "Storage" / "Storage Conditions"; Where the product should be stored (before and after opening); Temperature at which product should be stored; Seal product once open; Eat/use within x days/weeks of opening; Product may be refrigerated for x hours/days after opening.
46 Warnings	Text; None	Warnings stating the health hazards/potential risks of inappropriate preparation, use and storage or advising against certain practices (preparation, use or storage). Warnings may be preceded by the word "Warning" or "Important Notice". They often begin with "Do not" or imperatives such as "Must" or "Must not". Includes a notice to follow instructions or to keep to the recommended dosage. Examples: Do not store after opening; Do not add salt and/or sugar; Not suitable for infants under six months of age; Follow the preparation instructions exactly. NOTE: Allergen information not included.
47 Image: infant / young child	Text	Does the label carry an image (any graphic representation) of an infant/young child (excludes graphics for illustrating methods of preparation or use but includes logos)? Provide one of these possible answers: Yes; No.
48 Milestones	Text	Is the child in the picture demonstrating any of the following developmental or physical milestones? Provide one or more of these possible answers: NA; One or more teeth; Hands-and-knees crawling; Head shot; Head shot - in mothers arms; Heavily stylized image; Holding a toy and shaking it; Holding objects such as a spoon/cup and self-feeding; Kicking a ball; Lying down; Lying on stomach and pushing up on elbows; No teeth; Other; Peddling a bicycle/tricycle; Reclining; Running; Sitting with support; Sitting without support; Standing alone; Standing on tip toes; Standing with assistance; Walking alone; Walking with assistance.
49 Milestones: Other / Unclear	Text; None; NA	Describe "other" physical/developmental milestones displayed by images of a child, where relevant: NA: No image of child on label. None: there is an image of a child but the developmental stage displayed has been captured in the previous question.
50 Sell breast-milk substitutes in South Africa	Text	Does the company that sells the product in question also sell infant/follow-up formula/breast-milk substitutes (BMS)/Growing-up or toddler milks in South Africa? Provide one of these possible answers: Yes; No.
51 Similar colour schemes / designs	Text; No; NA	Similar/the same colour schemes or designs used for the product label as for the company's breast-milk substitute label. Check main panel only. Text must describe the similarities. NA: Company does not sell IF/FF/GUM/BMS in SA.
52 Similar names	Text; No; NA	Similar/the same names used for the product label as for the company's breast-milk substitute label (excluding the company name). Check main panel only. Text must describe the similarities. NA: Company does not sell IF/FF/GUM/BMS in SA.
53 Similar slogans / mascots / symbols	Text; No; NA	Similar/the same slogans, mascots or other symbols used for the product label as for the company's breast-milk substitute label (excluding the company logo [and official certification symbols, but including symbols created by the manufacturer ^a]). Check main panel only. Text must describe the similarities. NA: Company does not sell IF/FF/GUM/BMS in SA.

BF, breastfeeding; BMS, breast-milk substitute; CF, complementary feeding; FF, follow-up formula; GUM, growing-up milk; IF, infant formula. ^aText inside [square brackets] indicates suggested changes to the original checklist based on the results of the study.

Text is considered legible if it can easily be read by a person with normal visual acuity under good lighting conditions (CIAA 2008). Legibility is affected by a number of factors including, but not limited to, typography (e.g. case, print style, print size, space between lines) contrast, layout, colour, printing techniques, packaging shapes and packaging/labelling materials (CIAA 2008; Mackey & Metz 2009). However, for the purposes of this study, it was decided to use minimum letter height as an indicator of ease of readability. Although regulated minimum print size (also called font size) does not adequately ensure overall legibility of label information (Mackey & Metz 2009), and acknowledging that ideally all factors affecting legibility should be considered when assessing food labels, it was none the less felt that print size is one of the most practical, objective and important factors to measure. This is in line with a number of national regulations which stipulate a minimum print size for label text (Canada 2011; Food Standards in Australia and New Zealand 2010; South Africa 2010; U.S. Food and Drug Administration 2011). Codex does not recommend a minimum print size (reflecting a possible lack of international consensus that is also noted when comparing various national regulations) but calls on national governments to consider this (Codex Alimentarius 1985a). Thus use was made of the South African minimum print size requirement of 1mm in height for lower case vowels (South Africa 2010) as South African labels were being assessed.

Question 3

The Code (WHO 1981) states that “Inserts giving additional information about the product and its proper use, subject to the above conditions, may be included in the package or retail unit.” The conditions referred to are regarding information that must be provided on the product label. In the spirit of the Code, the Draft Guide recommendations (Table 1) were interpreted to mean that an insert containing additional information may be included in the package or retail unit on condition that the information required to be on the product label is not found only in the insert. The Draft Guide recommendations are not interpreted as checking that the required label information is present on the label (dealt with by questions 4, 7, 12 and 13) or legible (dealt with by questions 2 and 7). As such, the wording of the question was adjusted from the original text to more clearly deal with the issue of prime interest, being whether the insert contains any required label information that is not present on the label (Table 1).

For the purposes of this paper, “required label information” was defined as including: age of introduction; message regarding the importance of exclusive breastfeeding for the first six months followed by the addition of complementary foods with continued breastfeeding for two years and beyond; preparation/use instructions; storage instructions; daily ration (or serving size and frequency of feeds); warnings; ingredients list; nutrition information; batch number; and best before date. Although not stipulated as required label information by the Draft Guide, the last four items listed are required for breast-milk substitutes by the Code (WHO 1981). Thus it is felt that, should this information be provided for a complementary food product, it too should be found on the label and not only in the insert.

Question 4 and 7.1

Two questions were created to represent both the “Do” and “Do Not” aspects of the Draft Guide’s guidance on recommending an age of introduction (see Table 1) and to distinguish between products that did not provide an age recommendation at all and products that recommended an age of introduction before six months of age.

Question 6

The Draft Guide states that complementary food labels “should not include phrases such as ‘from the start’; ‘for the whole family’ or ‘first stage’”. These phrases are not allowed as they may imply/be understood by the consumer to indicate that the product is suitable for use for infants younger than six months of age. After conducting the pilot study it was felt necessary to qualify whether labels using such phrases also provided an appropriate recommended age of introduction in months or years or not (see Table 1). This was because, while some phrases identified would never be considered appropriate on complementary food labels (e.g. “From the start”), other phrases were identified that alone were potentially problematic but if accompanied by a clear and appropriate age recommendation in months/years were less likely to be understood as implying that the product was suitable for use before six months (e.g. “Stage 1 cereal. Suitable from 6 months of age”).

Question 7

The Draft Guide requires that “A product label should include the following messages in a prominent manner and not relegated to small print that cannot be easily seen”, thus indicating that the messages to follow need to be present, prominent and not provided using a small print size. Thus for each required message, two questions were included: the first ascertained whether the correct message was provided on the label; and the second ascertained whether the message was provided in a prominent manner and not relegated to small print. As with question 2 of the checklist there are many factors that affect prominence, but for the purposes of this study text smaller than the selected minimum letter height of 1mm for lower case vowels was considered small print and therefore not prominent.

Question 7.2

In order to qualify for a “Yes” answer to question 7.2, the message provided on the label had to communicate all three of the following concepts: (1) exclusive; (2) breastfeeding; and (3) first six months. Messages that promoted breastfeeding only (e.g. “Breastfeeding is best for babies”), or that recommended breastfeeding for the first six months of life without conveying the importance of exclusive breastfeeding, do not comply with the Draft Guide as they do not serve to prevent the early introduction of complementary foods.

Question 7.3

A message including one or two of the following concepts qualified for a “Partial” answer to question 7.3: (1) the addition of complementary foods from six months; (2) continued breastfeeding (from six months); (3) breastfeeding up to two years or beyond. This is because the following types of messages are valuable and correct, but alone do not provide the full public health message as endorsed by the WHO (WHO 2003): “Introduce solids from 6 months of age”; “Introduce solids from 6 months of age while continuing to breastfeed”; and “Breastfeeding should be continued until at least 2 years of age”.

Question 7.4

The Draft Guide requires that labels “provide instructions for safe and appropriate preparation and use”. As preparation and use instructions can be devoid of safety messages (e.g. “Use boiled/clean water”; “Wash hands before preparing food”), at least one safety message had to be included in the preparation and use instructions to qualify for a “Yes” answer.

Question 7.5

The recommendation to feed with a spoon is suitable for complementary foods that can be eaten with a spoon (e.g. cereals, porridges and homogenised baby food), but is not suitable for finger foods, snacks and beverages. Products that did not provide this recommendation but that used an image of a spoon on the label (excluding images of spoons used for measuring/stirring in illustrated preparation instructions) qualified for a “Partial” answer.

Question 7.6

The Draft Guide requires that labels “include proposed daily ration/serving”, where a daily ration is usually equivalent to one to three servings. Although not specifically required by the Draft Guide, to answer “Yes” for this question either the daily ration and serving size (as opposed to daily ratio or serving size), or serving size and recommended number of servings per day had to be provided. If only the daily ration is provided, it is not clear to the consumer how much the child should be fed in one sitting or how many times a day the product should be fed to the child. Additionally, if only the serving size is provided, it is not clear to the consumer if one or more servings of the product should be fed to the child per day, and the answer to question 12 cannot be determined. Thus, if only the daily ration/recommended number of servings a day or serving size was provided, the label qualified for a “Partial” answer.

Question 7.7

Contrary to question 7.4, it was not deemed necessary to identify safety messages within the storage instructions as all storage instructions appear to be concerned with food/child safety.

Question 10

The Draft Guide’s recommendation to feed the product “in a soft or semi-soft form” is suitable for complementary food products to which a liquid is added during preparation (excluding beverages, soups or gravies), but is not suitable for foods for which the consistency or viscosity is controlled by the manufacture (e.g. finger foods, snacks, homogenised/pureed food and fresh or frozen food). Under these criteria, the question was only applicable to cereals and porridges.

“Soft” and “semi-soft” are qualitative adjectives chosen by the Draft Guide as representing the appropriate viscosity or consistency of cereals/porridges for older infants and young children. The terms “semi-solid” and “thick” are also used on a sample cereal label provided by the Draft Guide. As reviewed by Mouquet and Trèche (2001), a number of authors have proposed different consistency classes with correlations between descriptors and viscosity values for infant cereals/porridges. These classifications differ in number of classes, qualitative description used, and corresponding viscosity range. As a result, a number of terms can be used to describe consistencies, and the same word is sometimes used by different authors to describe different consistencies reflecting the subjective nature of the choice of descriptor by the author. In the absence of a standardised characterisation of the consistency of cereals/porridges using sensorial methods (descriptors), the exact descriptors provided in the question had to be used in order to warrant a “Yes” answer.

Based on the image used on the sample cereal label by the Draft Guide, it was felt that labels that do not recommend feeding the product in a soft, semi-soft, semi-solid or thick form but that provided an image showing the product heaped on a spoon would qualify for a “Partial” answer.

Question 11

In the same way that an image showing the product heaped on a spoon would qualify for a “Partial” answer in question 10, an image of the product pouring off the spoon qualified for a “Partial” answer to this question as it communicates a non-verbal recommendation to feed the product in a liquid form.

Question 12

If the daily ration was not provided by the label and couldn't be calculated, the answer “insufficient information” was selected, with the exception of labels where only a serving size was provided and one serving provided energy in excess of that which is stipulated in question 12.1 to 12.3. In this case the answer “Yes” was selected. When a label provided a range for the daily ration, serving size or number of servings a day for an age group, the upper end of the range was used in order to assess the highest energy scenario for that age group so as to determine the greatest risk of the product interfering with breastfeeding and the provision of a varied complementary diet.

Where the preparation instructions indicated that milk should be added to the product (e.g. for cereals, porridges and milkshake powders) the energy contributed by the milk was added to the energy contributed by the dry product in order to determine the total energy supplied by a daily ration of the ready-to-eat product, which was used to answer question 12. Where energy values were provided for the dry product only (without the added milk) the total energy provided by the product was calculated by adding 281kJ per 100ml (the average energy composition of seven follow-on formulas sold in South Africa at the time of the study) of added milk for infants aged 6-11.9 months, and 262kJ per 100ml (full cream fresh milk, (Wolmarans *et al.* 2010) of added milk for children aged 12-23.9 months.

Due to the results of the pilot study, it was anticipated that labels would recommend that caregivers prepare the product using “the baby's usual milk”, “milk” or “breast milk, or formula milk or the milk you are currently feeding your baby”. If it were certain that only breast milk is used to prepare the product, the argument could be made that the energy provided by the added milk should not be considered as part of the “energy intake from complementary food”. However, as there is a chance that the caregiver of a breastfed infant will mix the product with milk other than breast milk, it was considered prudent to add the milk energy to the total energy contributed by the product. This approach may have resulted in an overestimation of the energy provided in cases where breast milk is mixed with the product, however it was the researchers decision to always consider the highest energy scenario in an effort to discourage that a daily ration of a single product provides close to, all of or more than the recommended energy intake from complementary foods for the breastfed child.

Question 13

“Stipulated warnings” are required but not defined by the Draft Guide, although an example is provided (see Table 1). Warnings required by various national and international regulatory instruments were investigated and were found to pertain to preparation, use/feeding and storage. Any warnings pertaining to such issues were thus accepted as a “stipulated warning” due to the lack of specificity in the Code and the Draft Guide.

Question 14

Of the six gross motor development milestones included in the WHO Motor Development Study (WHO Multicentre Growth Reference Study Group 2006), only those achieved by less than 15% of healthy infants before six months of age were considered to be “physical or developmental milestones clearly reached after six months” for the purposes of this study. These included standing with assistance, hands-and-knees crawling, walking with assistance, standing alone and walking alone, but not reclining, lying down and sitting with or without support. Additional developmental milestones provided by the Draft Guide as well as the Centres for Disease Control and Prevention (2011) were also incorporated into the criteria for question 14.

Headshots (photograph of a person's face) as well as heavily stylised images of infants (represented according to a style rather than nature or reality) that did not display physical or developmental milestones qualified the label for a “No” answer as such images make it difficult for the consumer to judge the age of the infant. An exception would be images depicting an infant with one or more teeth, as a child's first primary teeth (usually the lower central incisors) erupt between 6-10 months of age (American Dental Association Division of Communications et al. 2005; Woodroffe *et al.* 2010) and so the presence of one or more teeth was considered to be a “physical or developmental milestones clearly reached after six months”.

Question 15

Although this question is based on guidance found within the marketing recommendations of the Draft Guide, the guidance is represented in this study as it also pertains to labelling.

Testing of the Tool

The Labelling Practices Checklist was tested using a comprehensive database of labels of processed complementary foods purchased in South Africa. Employing a cross-sectional study design, products were purchased from a sample of 17 retail grocery stores, three wholesale grocery stores, three retail pharmacy stores and three baby chain stores in Gauteng, the Western Cape and KwaZulu-Natal from June to August 2011. The grocery chain stores selected were those at which South Africans spend the most on groceries. Purchased products were then compared to a master list of complementary food products compiled through desk research, and missing products were identified and purchased from whichever store and province was most convenient for the researcher. One flavour and size variant of each product available was purchased according to the following criteria:

Inclusion criteria:

- Food/beverage products found in the non-perishable section of the store designated for infant and young child foods; and
- Food/beverage products found in the refrigerated or frozen sections of the store whose labels indicate that the product is intended for children younger than three years of age by making use of relevant age descriptors such as baby/babe/infant/toddler/young child, or by recommending an age of introduction less than three years on the label.

Exclusion criteria:

- Food/beverage products whose labels state that they are intended for pregnant women, mothers or for children three years and older;

- Infant formula, follow-up formula, infant or follow-up formula for special dietary or medical purposes, and other milk-like products (in liquid or powdered form) marketed or otherwise represented as suitable for young child feeding (e.g. “growing-up milks”, “toddler milks” and “first milks”);
- Meal replacements, nutritional supplements (not including complementary food supplements) and micronutrient supplements; and
- Food / beverage products not available in South Africa to customers through retail/wholesale outlets.

After the products were purchased, the data capture form was completed for each product label by one researcher and checked by a second researcher. Disagreements were resolved by consensus, and where consensus could not be reached a third researcher made the final decision. The data capture form was then blinded and the order of product labels randomised. The labelling practices checklist was then completed independently by two researchers using the information in the completed data capture form. The checklists completed by each researcher were then compared and disagreements solved by consensus, failing which a third researcher made the final decision.

The data from the data capture form and the results of the labelling practices checklist were imported into Statistica Version 10 (StatSoft, Inc., Tulsa, Oklahoma, USA), and simple frequencies calculated for each category in the data capture fields and each answer to the checklist questions.

Results

Tool Development

The guidance provided by the Draft Guide for Marketing Complementary Foods on labelling practices for complementary foods was used to create the labelling practices checklist (Table 1) consisting of 15 questions, of which two have sub-questions, resulting in a total of 30 questions. Two (6.7%) of the 30 checklist questions (questions 3 and 7.6) used text that deviated from the original guidance, and 27 (90.0%) of the checklist questions required the addition of criteria to improve the likelihood of the questions being answered correctly. The answers to these questions were determined using the data capture form, consisting of 53 data fields that were completed for each label (Table 2).

The Draft Guide for Marketing Complementary Foods addresses inappropriate complementary food labelling practices, which can be grouped into practices that interfere with optimal breastfeeding practices and practices that increase the risk of inappropriate use of the product (see Table 3). The checklist questions were written to detect these inappropriate practices, as well as opposite or appropriate practices, as presented in Table 3.

Table 3. Inappropriate complementary food labelling practices addressed by the Draft Guide for Marketing Complementary Foods (with corresponding labelling practices checklist questions indicated in brackets)

1 Practices that interfere with optimal breastfeeding practices by:	
1.1	Undermining/discouraging exclusive breastfeeding for the first six months of life / Encouraging the early introduction of complementary foods: <ul style="list-style-type: none"> a. Recommended age of introduction precedes six months of age (4; 7.1) b. Use of images of infants younger/appearing younger than six months of age (14) c. Words/phrases implying that the product is suitable for infants younger than six months of age (6) d. Instructions on how to feed the product to infants younger than six months of age (5) e. Lack of/incorrect/incomplete messages on optimal infant and young child feeding practices (7.2; 7.3)
1.2	Encouraging/Neglecting to discourage the use of complementary food as a breast-milk substitute: <ul style="list-style-type: none"> a. Recommendation to feed with a feeding bottle (8) b. Use of an image of a feeding bottle (9) c. Recommendation/instructions on how to feed as a liquid, or no recommendation to feed in a soft/semi-soft form (where applicable) (10; 11) d. No recommendation to feed with a spoon (where applicable) (7.5)
1.3	Undermining/discouraging breastfeeding: <ul style="list-style-type: none"> a. Cross-promotion of breast-milk substitutes (15)
1.4	Undermining/discouraging continued breastfeeding after six months and up to two years or beyond: <ul style="list-style-type: none"> • Recommending a daily ration that exceeds the energy requirements from complementary foods for a breastfed child (12)
2 Practices increasing the risk of inappropriate use of the product:	
2.1	Neglecting to ensure good understanding of the label: <ul style="list-style-type: none"> a. Inappropriate language use (1) b. Not making the label easy to read (2; 7.1.1-7.7.1)
2.2	The label not providing “required” label information or providing “required” label information in an insert only (3; 7)
2.3	Lack of instructions for safe and appropriate preparation and use (7.4; 7.6)
2.4	Lack of instructions for safe and appropriate storage (7.7)
2.5	Lack of necessary warnings (13)

Testing of the Tool

Complementary Food Labels

One hundred and sixty complementary food labels from 35 manufacturers (14 international and 22 South African) were included in the study and assessed using the checklist. The large majority of products (80.6%) were purchased from stores in Gauteng, followed by the Western Cape (11.9%), KwaZulu-Natal (6.3%) and Mpumalanga (1.3%). Characteristics of these complementary foods are presented in Table 4.

Table 4. Characteristics of the complementary foods included in the study

Product Characteristics	Number	Percentage
Number of product labels (n)	160	
Product Origin:		
Locally manufactured products	101	63.1
Imported products	59	36.9
Number of manufacturers represented	35	
Number of brands represented	36	
Intended use of product		
Food	126	78.8
Beverage	34	21.2
Product Category:		
Cereal / Porridge	41	25.6
Homogenised / Pureed food (shelf-stable)	38	23.8
Tea / Juice / Water	31	19.4
Fresh / Frozen food	24	15.0
Snacks / Finger food	22	13.8
Milkshake powder	3	1.9
Gravy / Soup	1	0.6
Storage:		
Shelf stable	136	85.0
Frozen	19	11.9
Fresh	5	3.1

Data Capture Results

Difficulty was experienced in capturing data for the following nine (17%) of the 53 data capture form fields. Decisions were made on how to address these difficulties in order to progress to the checklist phase.

Field 9 (Phrases: use less than six months): Despite the definition and examples provided, the researchers found it difficult to determine whether some phrases should be captured for field 9, finally capturing those phrases listed in Table 5.

Field 17 (Preparation / Use instructions), 18 (Safety messages) and 46 (Warnings): Products such as cereals and porridges often have a section of the label dedicated to providing clear preparation and use instructions, whereas snacks/finger foods that are ready-to-eat do not. For the latter it was necessary to check “promotional” information on the label as some preparation and use instructions were implied in this text and thus recorded in field 17. It was at times difficult to determine whether some messages were preparation and use instructions (specifically safety messages), warnings or both. Table 6 provides a list of the warnings and safety messages captured and indicates which messages were included in both fields 18 and 46.

Table 5. Phrases used on the complementary food labels (n =160) that imply suitability of use before six months of age

Phrases implying/indicating suitability of use before six months of age	Number of labels	Percentage of labels
Stage 1 / Step 1	21	13.1
Baby(ies) / Babes	16	10.0
Best start in life / Healthy start for life	14	8.8
1 (One)	6	3.8
First / First foods / 1st tastes	6	3.8
For the whole family / For all the family	5	3.1
Starter / Starter food / For starter eaters	3	1.9
All ages	2	1.3
Junior	2	1.3
From an early age	1	0.6
Tots	1	0.6

Field 23 (Recommend feeding in soft form): A single product provided a recommendation to “Mix into a smooth paste/puree”. It was decided to capture this recommendation in field 23, and for it to qualify for a “Yes” answer for question 10.

Field 27 (Serving size): The labels of some snack/finger food products (e.g. boxes of rice cakes, cereal bars or biscuits) provided nutrition information per 100g of the product as well as per unit (e.g. per rice cake, bar or pack of 2 biscuits) without indicating whether this unit represented a single serving of the product. Similarly for juices, some products provide nutrition information per 100ml and per net volume (e.g. 200ml for a tetrapak with straw) without indicating that the net volume represented a single serving of the product. In such cases, it was recorded that no serving size was provided.

Field 48 (Milestones) and 49 (Milestones: Other / Unclear): For some of the images of children, selecting one of the developmental or physical milestones listed in the data capture key to characterise the image would result in the misclassification of the child’s age. Both researchers conducting the data capturing were in agreement that some images depicted a child older than 12 months (subjectively based on the child’s general appearance) but because the child was technically “sitting with support”, “sitting without support”, or because a headshot was used without the child showing any teeth (closed mouth) – selecting these milestones for field 48 would result in the checklist incorrectly classifying the image as “showing a physical or developmental milestone commonly associated with infants 0 to 6 months of age”. Additionally there were images displaying other milestones not listed under field 48. It was decided to indicate “Other/Unclear” in field 48 for both of these scenarios, to describe the “other/unclear” milestone in field 49 (see Table 7), and to add “unclear” as a possible answer to question 14 of the checklist. For these reasons, field 49 was changed from capturing “other” milestones, to “other / unclear” milestones.

Table 6. Warnings and safety messages used on the complementary food labels (n = 160)

Warnings	Number of labels	Percentage of labels
None	27	16.9
Never leave child alone with food or drink ^a	49	30.6
Discard unfinished food or drink	35	21.9
Do not use if safety button is up	24	15.0
Too early introduction of this food must be done under guidance of your healthcare professional	21	13.1
Juice / sweetened liquids can cause tooth decay	21	13.1
Dental care	20	12.5
Not to be used as a milk substitute	15	9.4
Ensure child is sitting while feeding ^b	14	8.8
Do not feed directly from the container	13	8.1
If microwaving take care ^c	12	7.5
Do not reheat	12	7.5
Do not sweeten	10	6.3
Do not microwave in packaging	8	5.0
Not suitable for children under x months	8	5.0
Keep cap away from children	8	5.0
Your baby's milk but no water shall be used for mixing in accordance with medical advice	7	4.4
Do not use if seal is broken	7	4.4
Do not add salt	5	3.1
Do not refreeze	4	2.5
Do not heat in the microwave	3	1.9
Not intended as a meal replacement	3	1.9
Ensure jar and cap are undamaged	3	1.9
Never force feed your baby	3	1.9
Heat breast milk with care	2	1.3
Use of a wet spoon could result in powder clumping	2	1.3
Follow the preparation instructions exactly	2	1.3
Since this product contains viable bacteria follow the instructions as per storage	2	1.3
Every care has been taken but (fruit) stone fragments may remain	2	1.3
Do not cook or use boiling water	1	0.6
Only feed to children accustomed to chewing solid food	1	0.6
Only give to babies when they are developmentally ready	1	0.6
Feed from a clean spoon (never a bottle)	1	0.6
Keep to the recommended dosage	1	0.6
Safety messages	Number of labels	Percentage of labels
Use clean/wash surfaces/equipment/utensils	51	31.9
Wash hands	28	17.5
Use as advised by health professional	27	16.9
Test temperature before feeding	26	16.3
Use boiled/clean water	24	15.0

Allow to cool	23	14.4
Child sitting while eating ^b	16	10.0
Supervision during feeding ^a	16	10.0
Microwave with care ^c	12	7.5
Open just before heating	4	2.5
Feed from bowl not bottle	3	1.9
Use boiled/pasteurized milk	3	1.9
Child sitting supported while eating	2	1.3
Cup feed	1	0.6
Feed slowly	1	0.6
Introduce one variety at a time	1	0.6
Remove lid before microwaving	1	0.6

^{a, b, c} Messages included as a warning and as a safety message.

Table 7: Images of infants/young children used on the complementary food labels (n = 160) displaying physical or developmental milestones that were classified as “other” or “unclear”

Milestones, other/unclear	Number of labels	Percentage of labels
Self-feeding - grasping food with whole hand and bringing to mouth	5	3.1
Toddler ^a sitting without support	3	1.9
Toddler ^a sitting with support	2	1.3
Toddler ^a head shot	1	0.6
Toddler ^a holding straw and drinking	1	0.6
Toddler ^a holding up oversized vegetables	1	0.6
Toddler ^a jumping (unclear)	1	0.6
Toddler ^a standing with assistance	1	0.6

^aA child one to 3 years old.

Field 53 (Similar slogans / mascots / symbols): While it was clear that brand logos, brand mascots and taglines were included, it was unclear from the Draft Guide for Marketing Complementary Foods whether branded ingredients, certification symbols (i.e. “USDA Organic”) and other symbols such as a “gluten-free” symbol should be included. They were included for the purposes of this study.

Labelling Practices Checklist Results

A comparison of the checklist answers selected by the two researchers for each of the 160 labels revealed that discrepancies existed for three (10%) of the 30 checklist questions – question 7.4, 7.5 and 10 (see Table 8). Of the 4,800 answers generated (30 questions per 160 labels), the researchers disagreed on 15 (0.3%) of the answers [five (3.1%) disagreements per question]. Disagreements were solved by consensus in all 15 cases without the need for a third researcher.

Table 8: Discrepancies between the answers generated by researchers to the labelling practices checklist questions for the complementary food labels (n=160)

Checklist Question(s)	Number of discrepancies between answers	Percentage of labels with discrepancies between answers
1- 7.3.1, 7.4.1, 7.5.1 – 9, 11-15	0	0.0
7.4	5	3.1
7.5	5	3.1
10	5	3.1
Total	15	
Percentage of total answers (n=4,800)	0.3	

For question 7.4 the following preparation and use instructions were recognised by one but not the other researcher as being safety messages: (a) Open just before heating; (b) Offer one variety for a few days. If there is no adverse reaction, try another variety; and (c) Remove lid before microwaving. After discussion it was decided that these messages were safety messages. One researcher, contrary to the other, considered question 7.5 to be “not applicable” to pureed food products packaged in a pouch with a nozzle as it was assumed that such a product would be consumed directly from the pouch. The discrepancies for question 10 were due to the following reasons: (a) One researcher noted that two rusk product labels carried preparation instructions on how to make the product into porridge and thus, contrary to the other researcher, selected a relevant answer other than “not applicable”; (b) One researcher accepted the use of the descriptive name “Baby’s Soft Porridge” by three product labels as qualifying the label for a “Yes” answer, whereas the other researcher did not.

Discussion

The Draft Guide for Marketing Complementary Foods is a useful tool for guiding the appropriate labelling of complementary foods, although greater clarification of individual recommendations as well as additional definitions and examples of key concepts will help to improve understanding, ease of use and to minimise the subjective interpretation of the guidance.

Although two of the 30 checklist questions used text that deviated from the original Draft Guide for Marketing Complementary Foods guidance, in both cases we believe that the intention of the Draft Guide was upheld and that the deviations served to clarify and strengthen the original guidance. Criteria for choosing answers were added to 27 (90%) of the 30 checklist questions in order to minimise the subjective interpretation of the questions and to improve the likelihood that they would be answered correctly.

Difficulty was experienced in capturing nine of the 53 data fields from the product labels, indicating that despite the definitions and examples provided in the data capture key – subjective interpretation still played a role in some of the data collection. The discrepancies noted between the answers generated by the researchers for the labelling practices checklist were minimal (15 discrepancies in 4,800 answers). However, these disagreements between researchers indicate that a level of subjective interpretation was still part of the assessment process for question 7.4 (Instructions for safe and appropriate preparation and use), 7.5 (Recommendation to feed the product with a spoon) and 10 (Does the label recommend feeding

the product in soft or semi-soft form). In addition, these difficulties and disagreements highlight the complexity of the subject matter and the difficulty experienced in attempting to make provision for all possible scenarios. As new complementary food products enter the market, gaps or loopholes in the labelling guidance may be exposed, highlighting the need for regular field testing and improvement of such guidance.

Difficulties experienced and recommendations for using the labelling practices checklist and data capture key

Of the words or phrases implying or indicating suitability of use before six months of age (see Table 5), age descriptors (e.g. baby, junior and tots) as well as words or phrases that divide a product line into numbered stages [e.g. stage 1, 2, and 3; step 1, 2, and 3; 1 (one), 2, and 3] are only potentially phrases that indicate suitability of use before six months if the product label does not provide an appropriate recommended age of introduction in months or years. As the Draft Guide for Marketing Complementary Foods already requires an appropriate age of introduction to be provided, advising against the use of such age descriptors and product line stages is probably not necessary. However, the use of the remaining terms in Table 5 should be advised against, and can be added to “from the start”, “for the whole family” and “first stage” as examples of phrases not to be used on complementary food labels.

As diarrhoeal disease reaches peak incidence in infants 6-12 months of age (as the consumption of complementary foods increases), attention to hygienic practices during the preparation of complementary foods is a critical preventative measure (PAHO/WHO 2003). Microbial contamination of food, an important cause of childhood diarrhoea, can be prevented by good hygiene and proper food handling practices such as washing caregiver and child’s hands with soap before preparing and eating, using clean utensils, cups and bowls to prepare and serve food and to feed the child, and avoiding the use of feeding bottles (PAHO/WHO 2003). To aid in the identification and use of appropriate preparation and use “safety messages” it would be useful for a guide for marketing complementary foods to provide an example list of safety instructions obtained from the literature on good hygiene and proper food handling practices that can be included on complementary food labels, as applicable to the local setting and type of food product. The safety messages found on complementary food labels sold in South Africa (see Table 6) could also be assessed against available literature and, if found to be appropriate, included in the list of examples.

The Draft Guide for Marketing Complementary Foods requires that complementary food labels include “stipulated warnings”, providing an example but no clear definition thereof. The Code requires that infant formula labels provide a warning against the health hazards of inappropriate preparation (WHO 1981), while the General Standard for the Labelling of Claims for Prepackaged Foods for Special Dietary Uses (CODEX STAN 146-1985) states that “A warning should be included on the label if the food is not capable of being stored after opening or is not capable of being stored in the container after opening” (Codex Alimentarius 1985b) and the Draft Guide for Marketing Complementary Foods requires warning against excess consumption if the product is highly fortified. As these examples of warnings cover the inappropriate preparation, storage and use of a product, a proposed definition for “stipulated warnings” covering these three aspects is provided in Table 1, question 13. In addition, to aid in the identification and use of appropriate warnings, it would be useful for a guide for marketing complementary foods to provide an example list of warnings that can be included on complementary food labels, as applicable to the local setting, type of food product and product packaging. The warnings found on complementary

food labels sold in South Africa (see Table 6) could also be assessed against normative guidance or available literature and, if found to be appropriate, included in the list of examples.

It was decided that the use of the recommendation “Mix into a smooth paste/puree” on rusks that could be prepared as a porridge would qualify the label for a “Yes” answer to question 10 as both “paste” and “puree” are nouns described by adjectives such as “thick” or “soft”. Complementary feeding guidelines also advise that infants can eat pureed, mashed and semi-solid foods from six months of age (PAHO/WHO 2003). However, as this question only pertains to cereals or porridges and because it is usually vegetables, fruit, meat or fish that are “pureed”, the descriptor “pureed” was not added to the list of qualitative adjectives used in question 10. The use of the descriptive name “Baby’s Soft Porridge” was also considered and, as the word “soft” was used to describe the intended consistency of the product but no recommendation was made to feed the product in a soft form, it was decided to add this scenario as one of the criteria for a “partial” answer for question 10 (see Table 1). It was decided that question 10 is applicable to “rusks that are used to make porridges” as the consistency of the porridge can be manipulated by the consumer. A similar change was made to question 7.5 to accommodate “rusks that are used to make porridges” (see Table 1). As it is possible for pureed food products packaged in a pouch with a nozzle to be decanted into a bowl and fed with a spoon, it was decided that question 7.5 was indeed applicable to such products.

An especially important issue for complementary foods is how to ensure that they are not fed to infants younger than six months of age in order to avoid undermining exclusive breastfeeding for the first six months of life. Finding a way to objectively assess whether the child used in an image on a complementary food label appears older than six months of age and shows achievement of a physical or developmental milestone clearly reached after six months or not proved to be difficult. Characterising an image by the physical or developmental milestone the child displays in the image worked well for infants, except that the list of possible milestones was not exhaustive and so some milestones (e.g. Self-feeding - grasping food with whole hand and bringing to mouth) were not listed and further consideration of the literature is required to determine if these additional milestones are characteristic of children younger or older than six months. Characterisation by means of milestones was not useful for young children/toddlers as these children, whether sitting with or without support or displaying any other physical or developmental milestones, are older than six months. A conservative solution may be to advise that images of older infants/toddlers should only show the child displaying physical or developmental milestone clearly reached after six months (e.g. standing rather than sitting, or if a headshot is used - the child should display teeth). It is recommended that a guide for marketing complementary foods list the physical or developmental milestone clearly reached after six months (as well as those commonly associated with infants from birth to six months of age) explicitly. The use of headshots not displaying one or more teeth and heavily stylized images of babies, as discussed in Table 1, as well as “fantastical” or “unrealistic” images of children (e.g. toddlers holding up/leaning against giant vegetables and fruit) should also be advised against.

It was unclear from the Draft Guide for Marketing Complementary Foods whether similar “other symbols” (referred to in question 15) include branded or trademarked ingredients, certification logos, and other symbols such as a “gluten free” symbol. Consumer research is required to determine whether using the same or similar branded ingredients on complementary food products would have the effect of cross-

promoting infant or follow-up formula from the same manufacturer before further recommendations can be made. The use of the same official certification symbols across products for infants and young children should be allowed if permitted by national legislation, as such symbols are not uniquely used by one manufacturer. Other symbols created by the manufacturer should not be used on both infant or follow-up formulas and complementary foods.

Gaps in the guidance and opportunities for improvement

It would be useful for a guide for marketing complementary foods to stipulate that the same limitations placed on the contents of a label are also placed on the insert. This is in line with the Code article 9.2 which allows inserts giving additional information about the product and its proper use, subject to the conditions stipulated in the article (WHO 1981).

Although the provision of label information in more than one language is decided upon by national governments, it may be useful for a guide for marketing complementary foods to recommend which information should be provided in more than one local language if so stipulated in national legislation. This would require a prioritisation of required label information. Of the labels assessed in this study that provided label information in more than one language, most labels translated preparation and use instructions.

As Article 9.2 of the Code requires infant formula labels to be “easily readable and understandable” (WHO 1981), it would be useful for a guide for marketing complementary foods to recommend that complementary food labels must be easy to understand in addition to the current recommendation to make labels easy to read. The Draft Guide for Marketing Complementary Foods provides a list of information that should be included on the product label “in a prominent manner”. Although this study dealt with letter height as a determinant of legibility and prominence, it may be important to highlight other key determinants such as typography, contrast, layout, colour, printing techniques, packaging shapes and packaging/labelling materials (CIAA 2008; Mackey & Metz 2009). This may include specifying that certain information (e.g. age of introduction) should be provided on the front of pack in order to assist the consumer in selecting an appropriate product for their child.

The Draft Guide for Marketing Complementary Foods states that the working paper is written primarily for stakeholders involved in promoting fortified blended foods (e.g. porridges and cereals), complementary food supplements (e.g. lipid nutrient supplements) and micronutrient powders, but recommends that the principles it espouses be followed by groups involved in any aspect of marketing food products for infants and young children (Quinn *et al.* 2010). Although briefly mentioning biscuits, jarred fruits, vegetables and meats, packaged infant meals and juices as examples of the many other food products also marketed for feeding infants and young children, the paper does not discuss specific labelling requirements based on product category. Some of the guidance provided is only relevant to cereal/porridge (Table 1, question 10); cereal/porridge, homogenised/pureed food and fresh/frozen food (Table 1, question 7.5); and cereal/porridge, homogenised/pureed food, fresh/frozen food and snacks/finger foods (Table 1, question 11). It would be useful for a guide for marketing complementary foods to clearly indicate which guidance is relevant to certain product categories (if not relevant to all) and to provide product category specific guidance where necessary for the appropriate preparation, use and storage of the product in order to

reduce the unique risks posed by each product category to safe preparation and use of the product and optimal IYCF practices.

Beverages are a concern for complementary feeding of infants and young children because they can interfere with breastfeeding. Just over 20% of products assessed in the study were beverages (tea/juice/water/milkshake powder), of which only one product provided a message on the importance of exclusive breastfeeding for the first six months of life and 14 (41.1% of beverage labels) recommended breastfeeding up to two years of age (results not shown). Unique recommendations for beverages may include a recommendation to feed in a cup and a warning that drinks should not replace breast milk, or that juice/sweetened drinks can cause tooth decay (WHO 2000). Recommendations that are important for snack/finger food products might include supervising the child while they are eating (WHO 2000), while recommendations for homogenised/pureed food and fresh/frozen food may include safety messages or warnings associated with heating/reheating food and refreezing food (see Table 6 for examples).

The Draft Guide for Marketing Complementary Foods was published before WHA Resolution 63.23, and so does not incorporate article 1(4) of the resolution, which urges member states “to ensure that nutrition and health claims shall not be permitted for foods for infants and young children, except where specifically provided for, in relevant Codex Alimentarius standards or national legislation” (WHA 2010). A guide for marketing complementary foods should address the issues raised by this resolution.

Recommendations for future work

- A guide for marketing complementary foods needs to be developed for international use that provides criteria, definitions and examples (such as those generated by this research), in order to clarify and strengthen the labelling guidance provided. In addition to informing the development of formal guidelines by normative bodies, the development of legislation by national governments and the labelling practices of manufacturers and distributors of complementary foods, such a guide should be used to monitor complementary food labels on a regular basis and results reported back companies to encourage improved practices.
- The WHO should make use of the Draft Guide for Marketing Complementary Foods, and research conducted using its guidance, as a starting point for the fulfilment of its mandate to “provide clarification and guidance on the inappropriate promotion of foods for infants and young children”, as requested by the member States of the 65th WHA (WHA 2012).
- Further research should be conducted to generate evidence on what constitutes “appropriate” and “inappropriate” marketing of processed complementary foods. As this study only field-tests the labelling guidance provided by the Draft Guide for Marketing Complementary Foods, it would be useful for further research to field-test the remaining guidance provided on the other aspects of marketing of complementary foods.

Conclusion

A lack of formal guidelines from international normative bodies on the appropriate marketing of processed complementary foods led the MIYCN Working Group to develop a Draft Guide for Marketing Complementary Foods providing labelling guidance as an interim measure for use by manufacturers, distributors and national governments. Field-testing of this guide has shown it to be a useful tool for assessing and guiding the appropriate labelling of processed complementary foods, addressing both practices that interfere with optimal breastfeeding practices and practices that increase the risk of inappropriate use of the product, in conformity with the International Code of Marketing of Breast-milk Substitutes. Some changes and additions are recommended in order to clarify and strengthen the guidance, as well as to improve understanding, ease of use and to minimise the subjective interpretation of the guidance.

Key Messages

- There is a lack of formal guidance from international normative bodies on the appropriate marketing of processed complementary foods.
- Such guidance is necessary to protect and promote optimal breastfeeding and complementary feeding practices – important determinants of child survival, growth and development.
- The Draft Guide for Marketing Complementary Foods is a useful tool for guiding the appropriate labelling of processed complementary foods for use by manufacturers and national governments, although it needs to be operationalised as shown in this paper.
- The results from this paper can be used by the World Health Organization in fulfilling their mandate to provide clarification and guidance on the inappropriate promotion of foods for infants and young children and by national governments in setting regulations on appropriate labelling of complementary foods.

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ADDENDUM F: NUTRITION AND HEALTH CLAIMS

Table 1 Nutrient content claims used on complementary food labels (n=126)

Claims	Number of labels	Percentage of labels	Example text from labels
Energy	19	15.1	<i>Packed with energy</i>
Protein	6	4.8	<i>Containing high milk proteins</i>
Amino acids	5	4.0	<i>Contains a naturally occurring essential amino acid</i>
Fat	1	0.8	<i>Low in fat</i>
Trans fat/hydrogenated fat	6	4.8	<i>No trans fats</i>
Omega 3/DHA	3	2.4	<i>With DHA / with omega-3</i>
Cholesterol	1	0.8	<i>Free from cholesterol</i>
Carbohydrate	7	5.6	<i>Rich in carbohydrates</i>
Starch	14	11.1	<i>No added starch</i>
Sugar	57	45.2	<i>No added sugar (contains only naturally occurring sugars)</i>
Lactose	1	0.8	<i>Lactose free.</i>
Fibre	5	4.0	<i>A good source of fibre</i>
Prebiotics	11	8.7	<i>With added prebiotics</i>
Probiotics	5	4.0	<i>With Bifidus BL</i>
Antioxidants	7	5.6	<i>Naturally contains anti-oxidants.</i>
Vitamins	7	5.6	<i>Vitamin enriched</i>
Vitamins and minerals	19	15.1	<i>Source of 18 vitamins & minerals</i>
Vitamin A	12	9.5	<i>Excellent source of Vitamin A</i>
Beta Carotene	1	0.8	<i>With beta carotene.</i>
B Vitamins	2	1.6	<i>Fortified with B vitamins</i>
Vitamin B1	9	7.1	<i>Contains vitamin B1</i>
Vitamin B3/Niacin	3	2.4	<i>Enriched with niacin</i>
Vitamin B6	4	3.2	<i>Source of vitamin B6</i>
Folic Acid	4	3.2	<i>High in folic acid</i>
Vitamin C	38	30.2	<i>Immunonutrient vitamin C</i>
Vitamin D	4	3.2	<i>Fortified with vitamin D</i>
Vitamin E	3	2.4	<i>High in vitamin E</i>
Minerals	1	0.8	<i>Contains natural antioxidants and minerals</i>
Calcium	19	15.1	<i>Added calcium</i>
Iodine	1	0.8	<i>Iodine</i>
Iron	28	22.2	<i>(Product name) is very high in iron: just 2 servings of (product name) contain more than 100% of the recommended daily iron intake for your baby.</i>
Magnesium	1	0.8	<i>Bananas are a rich source of Potassium and also contain other minerals such as Calcium, Iron, Magnesium and Phosphorus!</i>
Phosphorous	2	1.6	
Potassium	1	0.8	
Salt	42	33.3	<i>Low salt</i>
Selenium	3	2.4	<i>High in Selenium</i>
Zinc	19	15.1	<i>When served with milk, it provides more than 50% of the Recommended Daily Allowance of Calcium, Phosphorus, Iron, Zinc, Vitamin C and Vitamin B1.</i>

Table 2 Nutrient comparative claims used on complementary food labels (n=8)

Claims	Number of labels	Percentage of labels	Example text from labels
Wholegrains contain more minerals, vitamins and fibre than processed grains	7	87.5	<i>Wholegrains contain more minerals, vitamins and fibre than processed grains, and take longer to digest, leaving your child more satisfied.</i>
Less sugar	1	12.5	<i>Contains 30% less sugars than (Brand name's) Original Rusks ((Brand name's) Original Rusks 29.0g per 100g, (Brand name's) Reduced Sugar Rusks 20.3g per 100g).</i>

Table 3 Nutrient function/other function claims/IMPLIED health claims used on complementary food labels (n=117)

Claims	Number of labels	Percentage of labels	Example text from labels
Goodness/good	44	37.6	<i>For more goodness out of every spoonful.</i>
Nutrition	44	37.6	<i>We promise that our (product name) is pure, safe and nutritious and only contains wholesome ingredients your baby needs.</i>
Growth	39	33.3	<i>Optimal nutrition for growth & development.</i>
Health	31	26.5	<i>Start your baby's day the healthy way with one of (Brand name's) 7 delicious cereals.</i>
Development	29	24.8	<i>Organic food contains a greater variety of nutrients required for healthy development</i>
Easy to digest	28	23.9	<i>(Manufacturer and brand name) baby cereal is an easily digested, fully balanced, nutritious meal when mixed with milk.</i>
Best for babies/best start/better for	20	17.1	<i>Organic food is better for young growing bodies / Our delicious breakfast cereals are made with the finest organic ingredients, packed with energy and important nutrients to give your baby the best possible start to their day. / Our focus is still very much on giving your baby the very best by paying full regard to human health, the welfare of animals and our planet as a whole - the natural way to help your baby thrive.</i>
Digestive health/intestinal flora	15	12.8	<i>This breakfast has prebiotic nutrients that help to support healthy digestion by encouraging "good" bacteria in your baby's tummy to thrive.</i>
Immunity	15	12.8	<i>Immune boosting. (Brand name) baby food is nutritionally fortified and enriched with vitamins and minerals to provide the essential ingredients for healthier growth, stronger bones and to improve the baby's immune system assisting in the combat of infections and disease.</i>
Functional claim: Iron	14	12.0	<i>IRON: Needed for blood formation and the function of the immune system.</i>
Gentle/mild	14	12.0	<i>Gentle first food.</i>
Wholegrain	14	12.0	<i>Wholegrains contain more minerals, vitamins and fibre than processed grains, and take longer to digest, leaving your child more satisfied.</i>
Calming/soothing/settling/relaxing	13	11.1	<i>(Product name) contains foods that are rich in carbohydrates and calcium as well as an essential amino acid to help your baby feel satisfied and calm in preparation for a good night's rest.</i>
Chewing	13	11.1	<i>Textured food teaches your baby to chew.</i>
Satisfied	13	11.1	<i>Wholegrains contain more minerals, vitamins and fibre than processed grains, and take longer to digest, leaving your child more satisfied</i>

Claims	Number of labels	Percentage of labels	Example text from labels
Functional claim: Zinc	12	10.3	<i>ZINC: Helps to support a healthy immune system.</i>
Nourish	12	10.3	<i>They provide important top-up nourishment for tiny tummies, either as part of a meal or as a snack (toddlers should eat 2-3 between -meal snacks a day).</i>
Protect	12	10.3	<i>Free of caffeine and containing natural anti-oxidants to help protect the body, these products are farmed in such a way as to ensure the sustainability of the environment.</i>
Functional claim: Probiotic	11	9.4	<i>(Manufacturer name) infant cereals contain bifidus BL and immunonutrients which help strengthen your baby's natural defences day by day.</i>
Functional claim: Vitamin A	10	8.5	<i>VITAMIN A: Important for vision and helps keep the skin healthy.</i>
Functional claim: Vitamin C	10	8.5	<i>VITAMIN C: Antioxidant that contributes to iron absorption from food helps support the body's immune system and is needed for normal mental function.</i>
Good nights/happy dreams	10	8.5	<i>Good nights. (Name of product range) contain ingredients that help satisfy and calm your baby in preparation for a good night's rest.</i>
Skin	10	8.5	<i>Vitamin A: Promotes the development of a healthy skin and intestinal barrier for strong natural protection.</i>
Balanced	9	7.7	<i>(Brand name) is a fully balanced nutritional meal formulated especially for toddlers.</i>
Functional claim: Calcium	9	7.7	<i>Correct ratio of phosphorous, magnesium and calcium to promote bone growth.</i>
Bones	8	6.8	<i>(Brand name) baby food is nutritionally fortified and enriched with vitamins and minerals to provide the essential ingredients for healthier growth, stronger bones</i>
Functional claim: Prebiotic	8	6.8	<i>Prebiotics are naturally occurring carbohydrates that assist in the maintenance of a healthy digestive system.</i>
Functional claim: Vitamin B1	8	6.8	<i>Thiamine (Vitamin B1) is an essential nutrient for growing children</i>
Speech	8	6.8	<i>Introducing texture helps develop speech skills.</i>
Brain/mental	7	6.0	<i>Growing strong bodies and minds.</i>
Palate/taste development	7	6.0	<i>Our organic apples contain antioxidants and their fruity flavour will help to gently expand your baby's palate.</i>
Wholesome	7	6.0	<i>That's why we only use the highest quality organic yoghurt to give your baby, (brand name), a wholesome organic treat that tastes great.</i>
Self-feeding	5	4.3	<i>Our easy to hold (product description) helps to encourage self-feeding as your baby develops.</i>
Vision	5	4.3	<i>VITAMIN A: Important for vision and helps keep the skin healthy.</i>
Acceptance of table food/texture	4	3.4	<i>Increased texture. Introducing texture helps develop speech skills. Textured food teaches your baby to chew. If you miss this stage, your baby could refuse to eat table food unless it is smooth, which can result in feeding problems later.</i>
Blood	4	3.4	<i>Iron for the red blood cells to transport oxygen to the body</i>
Complete/All-in-one	4	3.4	<i>Nutritionally complete.</i>
Healthy appetite	4	3.4	<i>Organic food contains a greater variety of nutrients required for healthy development and, because it's tastier, it helps your baby to develop a healthy appetite for good food early in life.</i>
Low acidity	4	3.4	<i>Low acidity.</i>
Low GI	4	3.4	<i>Low GI (slow energy release).</i>

Claims	Number of labels	Percentage of labels	Example text from labels
Name: Sub brand	4	3.4	<i>(Sub brand name constitutes a health claim)</i>
Teeth	4	3.4	<i>They are enriched with vitamins and minerals like vitamin D and calcium, which work together to build strong bones and teeth.</i>
Benefit/beneficial	3	2.6	<i>Older children can also benefit from (product name).</i>
Counts towards 5-a-Day	3	2.6	<i>1 box = 1 of your 5 a day</i>
Functional claim: B Vitamins	3	2.6	<i>VITAMIN B's: Essential for transforming food into energy.</i>
Iron absorption	3	2.6	<i>VITAMIN C: Antioxidant that contributes to iron absorption from food, helps support the body's immune system and is needed for normal mental function.</i>
Muscle/tissue	3	2.6	<i>(Sub brand name) is an instant textured cereal for babies and toddlers with protein to help build tissue and muscle and vitamins and minerals to promote mental development and bone growth.</i>
Name: Brand	3	2.6	<i>(Brand name constitutes a health claim)</i>
Transforming food to energy	3	2.6	<i>VITAMIN B's: Essential for transforming food into energy.</i>
Functional claim: DHA	2	1.7	<i>DHA: An Omega-3 fatty acid found in the brain and eyes.</i>
Functional claim: Energy	2	1.7	<i>Energy for growth</i>
Functional claim: Magnesium	2	1.7	<i>Magnesium for muscle development</i>
Functional claim: Phosphorous	2	1.7	<i>Phosphorus for bone formation</i>
Functional claim: Selenium	2	1.7	<i>This product provides essential vitamins and minerals, energy for growth, added calcium for healthy bones and teeth plus added iron, zinc and selenium required to maintain baby's immune system.</i>
Functional claim: Vitamin D	2	1.7	<i>They are enriched with vitamins and minerals like vitamin D and calcium, which work together to build strong bones and teeth.</i>
Strength	2	1.7	<i>This is how naturally grown food provides growth and strength, which is especially important for infants and small children.</i>
Thrive	2	1.7	<i>Our focus is still very much on giving your baby the very best by paying full regard to human health, the welfare of animals and our planet as a whole - the natural way to help your baby thrive.</i>
Calcium absorption	1	0.9	<i>Added prebiotics to assist calcium absorption.</i>
Functional claim: Beta carotene	1	0.9	<i>With 18 vitamins and minerals, including a marvellous ingredient called Beta Carotene that helps protect young bodies against illness.</i>
Functional claim: Potassium	1	0.9	<i>Potassium for building of muscle and for normal growth.</i>
Hand eye coordination	1	0.9	<i>They can also encourage hand to eye coordination, biting and chewing as your baby develops.</i>
Low sodium diet	1	0.9	<i>Suitable for a low sodium diet.</i>
With probiotics	1	0.9	<i>With probiotic cultures.</i>

Table 4 Reduction of disease risk claims used on complementary food labels (n=10)

Claims	Number of labels	Percentage of labels	Example text from labels
Eczema	5	50	<i>It ... can soothe eczema and skin irritation when added to a baby's bath water.</i>
Asthma	4	40	<i>Organic food is better for young growing bodies as it is free from chemical additives such as pesticides, flavourants, colourants and preservatives that can contribute to conditions such as hyperactivity, eczema, asthma, diabetes and obesity.</i>
Diabetes	4	40	
Hyperactivity	4	40	
Obesity	4	40	
Constipation	2	20	<i>Prune helps baby in cases of constipation.</i>
Disease	2	20	<i>(Brand name) baby food is nutritionally fortified and enriched with vitamins and minerals to provide the essential ingredients for healthier growth, stronger bones and to improve the baby's immune system assisting in the combat of infections and disease.</i>
Infections	2	20	
Allergies	1	10	<i>In 1968 (health professional) discovered the anti-allergic properties of (product name) after this miracle herb relieved the chronic condition of her own baby</i>
Food sensitivity	1	10	<i>It brings relief to food sensitivity and allergies</i>
Skin irritation	1	10	<i>It ... can soothe eczema and skin irritation when added to a baby's bath water.</i>
Stomach discomfort	1	10	<i>Cranberries reduces bad bacteria growth that causes tummy discomfort</i>
Teething discomfort	1	10	<i>This nutritious and organic baby biscuit is designed for your baby to hold and practice "feeding" while relieving some of the discomfort associated with cutting new teeth.</i>
Toxin/Chemical residue build-up	1	10	<i>Give your child the best chance to grow a healthy body by offering them organically grown (product name) fresh from the farm and help prevent long-term build-up of toxins in the body or environment. This helps to prevent chemical residue build up in your body or the environment.</i>

ADDENDUM G: NON-NUTRITION/HEALTH CLAIMS

Non-nutrition/health claims (n=153)	Number of labels	Percentage of labels
Additives	114	74.5
Allergens	90	58.8
(Brand name)	70	45.8
Organic etc.	65	42.5
Certification: Agriculture	59	38.6
Vegetarian	31	20.3
Certification: Religious	28	18.3
Natural	27	17.6
No Junk	23	15.0
GMO	22	14.4
Quality	22	14.4
Pure	17	11.1
Specially prepared	16	10.5
Safe	13	8.5
Origin	12	7.8
Wholegrain	12	7.8
Partially hydrolysed	11	7.2
Free range	9	5.9
Home made	9	5.9
Packaging	8	5.2
Caffeine	7	4.6
Best for babies	6	3.9
Certification: Quality / Safety	6	3.9
Fresh	6	3.9
Real	6	3.9
BPA	5	3.3
Fruit juice	4	2.6
Original	4	2.6
Texture	4	2.6
Minimal processing	3	2.0
Sweetened with fruit juice	3	2.0
Baked	2	1.3
Direct from the farm	1	0.7
Faultless products	1	0.7
Queen's awards	1	0.7
rBST	1	0.7
Protein sources	0	0.0

ADDENDUM H: COMMENTS ON R184 DRAFT REGULATIONS RELATING TO FOODSTUFFS FOR INFANTS AND YOUNG CHILDREN (2 MARCH 2012)

Note: Addendum H provides Section D of a document prepared by Lara Sweet and submitted to the South African National Department of Health (SA NDoH) in May 2012. The document, based on the results of this mini-dissertation, provides comment on the draft *Regulations Relating to Foodstuffs for Infants and Young Children* (R184), which was published by the SA NDoH on 2 March 2012 for comment by interested persons (South Africa, 2012). Sections A (Introductory letter), B (Background information on mini-dissertation), C (International guidance on the marketing of complementary foods and results of the mini-dissertation) and Annexure A (Study protocol) of the document are not included in Addendum H.

D. COMMENTS OF THE “DRAFT REGULATIONS FOR FOODSTUFFS FOR INFANTS AND YOUNG CHILDREN (R184)”

NOTE: Existing text, as presented in R184 (South Africa, 2012), is provided in *blue italics*, whereas suggested additions or changes to existing text are indicated in *red italics*.

D1. SUGGESTED ADDITIONS TO R184 (NEW TEXT)

1. Preventing cross promotion

Rationale for new text:

- Our results showed that of the 32 (20%, n=160) complementary food/beverage products included in the study that were manufactured by a company also manufacturing infant formula, 100% were found to be labelled in a way that also promotes the company's infant or follow-up formula by using similar:
 - Slogans, mascots or other symbols – see Table 1 for more detailed examples;
 - Brand/sub-brand names; or
 - Colour schemes or designs;
 as used for their infant formula or follow-up formula brands (see example provided in Figure 1).

Suggested text (new):

4(3) The label or container of a complementary food and any other liquid or milk-like product marketed or otherwise represented as suitable for feeding an infant or young child shall not –

(a) Create an association with any products specified in sub-regulation 7(1), including but not limited to the use of similar colour schemes or designs, brand or sub-brand names, slogans, brand mascot, and logos. The use of the same company name and logo is permitted.

Table 1: Similarities between the labels of complementary foods and breast-milk substitutes manufactured by the same companies (n=32)

Similarities	Number of labels	Percentage of labels
Similar colour schemes/designs	12	37.5
Similar names:	21	65.6
Brand name	21	65.6
Sub brand name	5	15.6
Similar slogans/mascots/symbols:	29	90.6
Branded ingredients	11	34.4
Brand logo	11	34.4
Brand mascot	4	12.5
Tagline	2	6.3
Symbol: USDA Organic	2	6.3
Symbol: Feeding bottle	1	3.1
Symbol: Gluten free	1	3.1



Figure 1. An example of cross-promotion between and infant formula and a complementary food product
Source: <http://www.safeway.com>

2. Preventing recommendations to feed the product in a bottle

Rationale for new text:

- Our results showed that, of 160 product labels:
 - Eight (5%) labels recommended/provided instructions on how to feed the product in a bottle, of which seven were teas and one was a porridge.
 - Two (1%) labels carried an image of a feeding bottle, of which one was a tea and the other a porridge.
- The recommendation to feed the product using a bottle, or the use of an image of a bottle on a complementary food or beverage should be prohibited. Such practices increase the risk of complementary foods and beverages being used as breast-milk substitutes.

Suggested text (new):

4(3) The label or container of a complementary food and any other liquid or milk-like product marketed or otherwise represented as suitable for feeding an infant or young child shall not –
(b) Make any reference to a feeding bottle, nor use an image of a feeding bottle.

Definition: "image" means a photograph, illustration, drawing or any other graphic representation.

3. Ensuring that cereals/porridges are fed as solids, not liquids:

Rationale for new text:

- In the interests of preventing cereals and porridges from being over diluted and/or used as breast-milk substitutes by the caregiver, the *Draft Guide for Marketing Complementary Foods* advises that such products recommend feeding the product in a soft or semi-soft form, and do not recommend feeding the product in a liquid form (Quinn *et al.*, 2010). The *Draft Guide for Marketing Complementary Foods* also recommends including a message to feed with a spoon and provides a sample label with a picture illustrating the correct consistency of the product on the spoon (see Figure 2), which may be especially useful for illiterate caregivers.
- Our results showed that:
 - Only 1 out of 44 cereal/porridge labels recommended feeding the product in a soft/semi-soft/semi-solid/thick form, while seven labels used an image of the product heaped on a spoon.
 - One cereal/porridge label provided instructions on how to feed the product in a liquid form, while two labels used an image of the product pouring off a spoon.
 - Twenty-two cereal/porridge products recommended feeding the product with a spoon, while a further 23 used an image of a spoon on the label (not for use in preparation).

Suggested text (new text added to regulation 4(2)):

4(2) Notwithstanding the provisions of regulation 4(1), the label or container of a processed cereal based foodstuff for infants and young children shall –

- (d) provide the following message in letters that are not less than 2mm in height for the smallest letters - “Feed your baby slowly and patiently using a spoon”;*
- (e) Recommend feeding the product in a soft or semi-soft form. Such products may not be represented as suitable for use in a liquid state whether by text or images used on the label;*
- (f) Where space permits, provide the following message – “Do not make cereal/porridge into a liquid. It should be thick enough to stay in the spoon”.*



Figure 2. Illustration of the correct cereal/porridge consistency for older infants

Source: Quinn *et al.* (2010)

D2. SUGGESTED CHANGES TO EXISTING TEXT OF R184

1. LABELLING, COMPOSITION, PACKAGING AND MANUFACTURING MATTERS: GENERAL LABELLING, COMPOSITION, PACKAGING AND OTHER MANUFACTURING MATTERS OF DESIGNATED PRODUCTS

1.1 Regulation 2(2)(a)(iii)

Existing text:

2(2) The container and/or label of a product referred to in sub-regulation (1) shall-

- (a) not show photographs, illustrations, drawings or other graphic representation, apart from those necessary to show the correct method of preparing and using the product such as the*
- (iii) the ingredients or composition of a complementary food for infants or young children.*

Rationale for suggested changes:

- Our results showed that, of 160 product labels:
 - One hundred and twenty-four labels (76%) included images of ingredients/composition.
 - Sixty-five labels (41%) included images of the ready-to-eat/prepared product.
 - Thirty-seven labels (23%) included images illustrating preparation and use.
- We suggest that images providing a true representation of what the product contains/is made up of, how it should be prepared/used and what it should look like in a prepared/ready-to-eat form are useful, especially for illiterate members of the public. Such images should be allowed on complementary food labels.

Suggested changes:

2(2) The container and/or label of a product referred to in sub-regulation (1) shall-

- (a) not show photographs, illustrations, drawings or other graphic representation, apart from those necessary to show the correct method of preparing and using the product such as the -*
- (iii) ~~the~~ ingredients, ~~or~~ composition and/or prepared/ready-to-eat product of a complementary food for infants or young children.*

1.2 Regulation 2(2)(b)

Existing text:

2(2) The container and/or label of a product referred to in sub-regulation (1) shall-

- (b) not contain any information or make any negative claim relating to the nutritional content or other properties of human milk;*

Rationale for suggested changes:

- Could this regulation have the unintended consequence of preventing the use of messages encouraging the practice of exclusive breastfeeding for the first six months of life followed by continued breastfeeding until two years or beyond?

Suggested text changes:

2(2) *The container and/or label of a product referred to in sub-regulation (1) shall-*

(b) not contain any information, with the exception of messages required by these regulations, or make any negative claim relating to the nutritional content or other properties of human milk;

1.3 Regulation 2(3)Existing text:

2(3) The product brand or logo shall be permitted, provided it does not contain a picture of an infant, young child or other humanized figure. Logos indicating endorsement by specific religious certifying organisations shall be excluded from the prohibition in sub-regulation 2(a).

Rationale for text changes:

Not only brand logos but also company logos may contain pictures of an infant (see Figure 3). In some cases, the company logo is used as the brand logo also. Our research found one such case, and thus it is recommended that this potential loophole be closed.



Figure 3: Example of a company logo that contains a picture of an infant

Source: <http://www.luxebc.com>

Suggested text changes:

2(3) The product brand or logo and company logo shall be permitted, provided it does not contain a picture of an infant, young child or other humanized figure. Logos indicating endorsement by specific religious certifying organisations shall be excluded from the prohibition in sub-regulation 2(a).

1.5 Regulation 2(14)Existing text:

2(14) No incentives, enticements or invitations of any nature, which might encourage consumers to make contact with the manufacturer or distributor of a designated product which might result in the sale or the promotion of a designated product for infants or young children, shall be used on the label or in the marketing of a designated products for infants or young children.

Request for clarity – no text changes suggested:

- It is unclear from regulation 2(14) as to what constitutes an incentive, enticement or invitation to interact. Is the provision of company contact details included?
- Our research showed that, of the 160 products included in the study, 159 (99%) of product labels provided contact details or some kind of invitation to interact (see Table 2 for detailed information on type of contact details provided).
- Are there situations in which consumers might need to contact manufacturers, such as to report a quality/food safety problem, thus justifying the inclusion of limited contact details (e.g. a telephone number)? What does a mother do if, upon opening a complementary food product, she discovers that it contains a foreign object in the product but cannot remember where she bought the product and therefore cannot return it to the retailer?
- It is recommended that the Department of Health provide clarity on whether any contact details are allowed on the label and consult with relevant experts regarding the suitability of such details on complementary food labels, especially taking into consideration the rights of the consumer according to the consumer protection act.

Table 2: Type of invitation to interact with the manufacturer used on complementary food labels (n=159)

Invitation to interact	Number of labels	Percentage of labels
Website address	134	84.2
Customer care line	87	54.7
Telephone number	67	42.1
Postal Address	49	30.8
Email address	25	15.7
Fax number	6	3.8
SMS number	6	3.8
Baby club (join via website)	2	1.3

2. GENERAL LABELLING AND OTHER REQUIREMENTS FOR COMPLEMENTARY FOOD AND ANY OTHER LIQUID OR MILK-LIKE PRODUCT MARKETED OR OTHERWISE REPRESENTED AS SUITABLE FOR FEEDING AN INFANT OR YOUNG CHILD

2.1 Regulation 4(1)

Existing text:

4(1) A manufacturer or distributor shall not import, offer for sale or sell complementary food and any other liquid or milk-like product marketed or otherwise represented as suitable for feeding an infant or young child if the container or label affixed to such product does not, in bold letters and in clear, conspicuous and easily readable language-

Rationale for text change:

- It is necessary to differentiate between whether the label is readily legibility (affected by font type, style and size, the use of upper and lower case letters and the contrast between the text and the background etc.) and understandable (affected by the difficulty of the text, the reader's background knowledge and literacy level, terminology used etc.). As "easily readable" could

refer to legibility or understanding, it is suggested that more specific language be used to clearly represent both concepts.

- The General Standard for the Labelling of Pre-packaged Foods (CODEX STAN 1-1985) (Codex Alimentarius, 1985) stipulates that all statements required to appear on the label shall be clear, prominent, indelible and readily legible by the consumer. As such we recommend the addition of “indelible” and “readily legible” to Regulation 4(1).
- One of numerous factors affecting the legibility of a label includes minimum letter height. The Regulations for the Labelling and Advertising of Foodstuffs (R146) stipulate in Regulation 8(b)(i) that “subject to these regulations the information required to appear on a label in terms of the Act shall be in letters not less than 1 mm in height for lower case vowels”. It is our understanding that this requirement extends to the products covered by R184. A minimum letter height of 1mm is small, with countries such as the US and Canada setting their minimum at 1.6mm (FDA, 2011; Canada, 2011). It is probable that required label information provided at the minimum letter height of 1mm will be difficult to read, especially as the regulations do not control for the font type and the contrast between text and background. It is believed that text required by Regulation 4(1) should stipulate a larger minimum letter height.
- It may be necessary to make an exception for smaller packages such as that made in Regulation 8(b)(ii)(bb) of R146. Text to this effect has not been suggested.
- The results of our research indicate that 102 (64%, n=160) labels provided some required label information³ in letters smaller than 1mm in height for lower case vowels. The nutrition information on half of the labels, ingredients list and preparation/use instructions on nearly 30% of the labels, and the warnings on nearly 20% of the labels were relegated to small text (smaller than 1mm in letter height). It is important to note that this research was done before R146 (Regulations: Labelling and Advertising of Foodstuffs) came into force in March 2012 and so it is possible that the manufacturers of the products included in our study have subsequently increased the letter heights on their labels in order to adhere to R146. However, considering that the majority of labels in the study relegated some required label information to small print, it is not unreasonable to expect that such information will continue to be provided in the smallest text allowed, which in the case of messages required by regulation 4(1) is not acceptable. As such it is believed that text required by regulation 4(1) should stipulate a larger minimum letter height.
- Regulation 7(1) of R146 (Regulations: Labelling and Advertising of Foodstuffs) stipulates that “Subject to the provisions of regulation 8, information required to appear on any label shall be - (a) in English and where possible, at least one other official language of the Republic of South Africa”. It is our understanding that this requirement extends to the products covered by R184, except in the case of R184 Regulation 4(1)(a), which takes precedence over the Regulation 7(1) of R146. Thus, according to R146 information required on complementary food labels as stipulated in R184 Regulation 4(1) should be provided in English and, where possible, at least one other official language. If this understanding is incorrect, it would be prudent to determine which of the required label information should be provided in more than one official South African language and to write this into R184 as a mandatory measure, as only 13 (8%, n=160)

³ Required label information: age of introduction; message regarding breastfeeding/addition of complementary food; preparation/use instructions; storage instructions; daily ration/serving size/frequency of feeds; warnings; ingredients list; nutrition information; batch number; best before date.

of the labels included in our study provide any information in official South African languages other than English. Unless legislated, it appears that it is unlikely that manufacturers will provide label information in more than one official language. It is suggested that the following information be provided in more than one language due to its importance in ensuring that the product does not interfere with breastfeeding nor pose a safety risk to the child: preparation/use instructions; daily ration (serving size and frequency of feeds); storage instructions; warnings; and age of introduction.

For small packages, it may be necessary to allow the use of an insert/fix-o-form for the provision of required label information in a second official South African language.

Text regarding the use of languages has not been suggested.

Suggested text changes:

*4(1) A manufacturer or distributor shall not import, offer for sale or sell complementary food and any other liquid or milk-like product marketed or otherwise represented as suitable for feeding an infant or young child if the container or label affixed to such product does not, in bold letters **that are not less than 2mm in height for lower case vowels and in clear, conspicuous, indelible, readily legible and easily readable understandable language** -*

2.2 Regulation 4(1)(a)

Existing text:

4(1)(a) provide instructions for proper preparation where applicable, as well as the use and appropriate serving sizes for different ages in the English language and at least 1 (one) other official language;

Rationale for text changes:

- As attention to hygienic practices during food preparation and feeding is critical for the prevention of gastrointestinal illness, which reaches peak incidence during the second half of infancy (PAHO, 2003), we recommend referring to “**safe and appropriate** preparation and use” rather than the less specific “**proper** preparation... and use”, as recommended by the *Draft Guide for Marketing Complementary Foods* (Quinn *et al.*, 2010).
- It would be useful to create a guideline document to accompany these regulations that provides examples of safety messages that could be included within the preparation and use instructions per product category. These messages would be required to be in line with the *Guiding Principles for Complementary Feeding of the Breastfed Child’s* (PAHO, 2003) guidance on “safe preparation and storage of complementary foods”, specifically the following behaviours:
 - Practice good hygiene and proper food handling by:
 - Washing caregivers’ and children’s hands before food preparation and eating;
 - Using clean utensils to prepare and serve food;
 - Using clean cups and bowls when feeding children; and
 - Avoiding the use of feeding bottles, which are difficult to keep clean.
- Table 3 provides a list of the type of safety related preparation/use messages used on the 110 (69%, n=160) labels that provided such messages.

Table 3: Safety messages used on complementary food labels (n=110)

Safety messages	Number of labels	Percentage of labels
Use clean/wash surfaces/equipment/utensils	51	46.4
Wash hands	28	25.5
Use as advised by health professional	27	24.5
Test temperature before feeding	26	23.6
Use boiled/clean water	24	21.8
Allow to cool	23	20.9
Child sitting while eating	16	14.5
Supervision during feeding	16	14.5
Microwave with care	12	10.9
Open just before heating	4	3.6
Feed from bowl not bottle	3	2.7
Use boiled/pasteurized milk	3	2.7
Child sitting supported while eating	2	1.8
Cup feed	1	0.9
Feed slowly	1	0.9
Introduce one variety at a time	1	0.9
Remove lid before microwaving	1	0.9

- Use of the phrase “where applicable” introduces a possible loophole to regulation 4(1)(a) and so we suggest providing the applicable exception instead, if such an exception exists.
- In order to protect and promote continued breastfeeding and the provision of a varied diet, the *Draft Guide for Marketing Complementary Foods* (Quinn *et al.*, 2010) recommends ensuring that the suggested daily ration (or a recommended serving size combined with a recommended frequency of feeds per day) does not exceed the daily energy needs from complementary foods for a breastfed child, as indicated in Table 4.
- The manufacturer should recommend not only an appropriate (justifiable) serving size but also a recommended number of feeds per day or a total daily ration that is in line with the *Guidelines for Complementary Feeding of the Breastfed Child* (PAHO, 2003). Providing only a serving size leaves it up to the mother to decide how many times she feeds the product/the daily ration and she may choose to over-feed the child, thereby interfering with continued breastfeeding.
- Our research showed that only 12 (8%, n=160) labels provided both (a) a proposed daily ration/recommended number of servings per day, AND (b) a serving size, while 67 (42%) labels provided one or the other, and 81 (51%) provided neither.
- An appropriate single serving size is one that can be justified by a scientific and evidence-based approach, as required by Regulation 8 of R146. We recommend adapting Regulation 8 of R146 for inclusion in R184.

R146:

(8) (a) An indication of the mass or volume of a single serving shall be determined by the manufacturer and shall be an appropriate serving size for a Single serving which would not encourage consumers to consume “supersize” servings which might result in an undesirable increase of their total energy intake that could contribute to unhealthy weight gain.

(b) The manufacturer shall produce appropriate, scientific, evidence-based documentation justifying the serving size that was chosen and shall be able to provide such justification to an inspector upon request.

Table 4: Energy needs from complementary foods (kcal/day) by feeding status

Age of Child (months)	Energy needs from complementary foods (kcal/day)	
	Breastfed	Not breastfed
6 - 8	200	600
9 - 11	300	700
12 – 23	550	900

Adapted from PAHO (2003)

Suggested text changes:

4(1)(a) provide instructions for **safe and appropriate** ~~proper~~ preparation where applicable, as well as ~~the~~, (excluding ready-to-use products) and use, and a daily ration (appropriate serving sizes and a recommended frequency of feeds per day) for different ages in the English language and at least 1 (one) other official language.

- (i) An indication of the mass or volume of a single serving shall be determined by the manufacturer and shall be an appropriate serving size for a single serving, that when provided at the recommended frequency of feeds is less than the recommended energy intake from complementary foods for a breastfed child as provided in Annexure E;
- (ii) The manufacturer shall produce appropriate, scientific, evidence-based documentation justifying the daily ration (serving size and frequency of feeds) that was chosen and shall be able to provide such justification to an inspector upon request.

Definition: “serving”, in relation to a foodstuff, means ~~a reasonable~~ an appropriate quantity of food suitable for consumption as a single meal by infants, young children or children. Such serving should, when eaten at the recommended frequency of feeds per day, provide a daily ration of the food that is less than the recommended daily energy intake from complementary foods for a breastfed child as defined below:

Energy needs from complementary foods (kcal/day) by feeding status

Age of Child (months)	Energy needs from complementary foods (kcal/day)	
	Breastfed	Not breastfed
6 - 8	200	600
9 - 11	300	700
12 – 23	550	900

Adapted from PAHO (2003)

2.3 Regulation 4(1)(b)

Existing text:

4(1)(b) provide instructions for proper storage before and after the container has been opened where appropriate;

Rationale for text changes:

- As attention to hygienic practices during food storage is critical for the prevention of gastrointestinal illness, which reaches peak incidence during the second half of infancy (PAHO, 2003), we recommend referring to “**safe and appropriate** storage” rather than the less specific “**proper** storage” as recommended in the *Draft Guide for Marketing Complementary Foods* (Quinn *et al.*, 2010).

- It would be useful to create a guideline document to accompany these regulations that would provide examples of suitable storage instructions per product category. These messages would be required to be in line with the *Guiding Principles for Complementary Feeding of the Breastfed Child's* (PAHO, 2003) guidance on “safe preparation and storage of complementary foods”, specifically the following behaviours:
 - Practice good hygiene and proper food handling by:
 - Storing foods safely and serving foods immediately after preparation.
- Table 5 provides a list of the type of storage instructions used on the 150 (94%, n=160) labels that provided such instructions.

Table 5: Storage instructions provided on complementary foods labels (n=150)

Storage Instructions	Number of labels	Percentage of labels	Example text
Storage after opening	95	63.3	<i>Reseal bag after use.</i>
General storage	91	60.7	<i>Store in a cool dry place.</i>
Length of storage after opening	87	58.0	<i>Use within 4 weeks of opening.</i>
Storage before opening	15	10.0	<i>Store unopened jars in a cool dry place.</i>
General length of storage	15	10.0	<i>Can be frozen for up to 2 months.</i>
Storage conditions to avoid	2	1.3	<i>Avoid exposure to direct sunlight and humidity.</i>

- It is our understanding that, where R146 and R184 present different requirements, R184 takes precedence.
- With regards to storage, R146 requires the following:
 - Regulation 9: “The label of a pre-packaged foodstuff shall contain – (e) special storage conditions, where applicable”
 - Regulation 31(1): “Subject to the requirements in Regulation 8, words that indicate the appropriate storage instruction before and after opening, shall appear in bold font, upper-case letters not less than 3,0 mm in height on the label” and,
 - Regulation 31(2): “The manufacturer shall determine the appropriate storage instruction relevant to the nature of the foodstuff, to ensure that any specific quality attributes for which tacit or express claims have been made, are retained and preserved.”
- Our research showed that, although 150 (94%, n=160) labels provided storage instructions, 24 (15%) provided these instructions in text smaller than 1mm in letter height for lower case vowels. Due to the importance of this information, it must be ensured that it is not relegated to small text.
- The requirements of R146 are more stringent than R184, and so we recommend harmonising R184 with R146.
- Use of the words “where applicable” introduce a possible loophole to regulation 4(1)(a) and so we suggest providing the applicable exception instead if such an exception exists.

Suggested text changes:

4(1)(b) provide instructions for ~~proper~~ **safe and appropriate** storage before and after the container has been opened ~~where appropriate~~ **in bold font, upper-case letters not less than 3,0 mm in height on the label;**

- (i) **The manufacturer shall determine the appropriate storage instruction relevant to the nature of the foodstuff, to ensure that any specific quality attributes for which tacit or express claims have been made, are retained and preserved**

2.4 Regulation 4(1)(c)

Existing text:

4(1)(c) include a warning preceded by the expression "Important notice" against the health hazards of improper preparation and use where appropriate;

Rationale for suggested text changes:

- It would be useful to create a guideline document to accompany these regulations that would provide examples of warnings against the health hazards of unsafe and inappropriate preparation, use and storage of complementary foods that could be used by manufacturers. These messages would need to be in line with *the Guiding Principles for Complementary Feeding of the Breastfed Child's* (PAHO, 2003) guidance on "safe preparation and storage" of complementary foods.
- Table 6 provides a list of the type of warnings used on the 133 (83%, n=160) labels that provided such warnings.
- Note that the second most frequently provided warning in our study "Discard unfinished food or drink" (see Table 6) is in line with the PAHO (2003) guideline to "Practice good hygiene and proper food handling by storing foods safely and **servng foods immediately after preparation.**" The *Draft Guide for Marketing Complementary Foods* (Quinn *et al.*, 2010), although not mentioning it in their guidance, provides the following warning on a cereal sample label – "Discard any prepared, unfed cereal after each feeding". The Department of Health may want to consider including this warning on labels of complementary foods/beverages that require reconstitution to prevent bacterial overgrowth in left over, non-refrigerated product. No text suggested.

Suggested text changes:

4(1)(c) include a warning preceded by the expression "Important notice" against the health hazards of ~~improper~~ unsafe and inappropriate preparation, and use and storage where appropriate;

Table 6: Warnings used on complementary food labels (n=133)

Categories of warnings	Number of labels	Percentage of labels
Never leave child alone with food or drink	49	36.8
Discard unfinished food or drink	35	26.3
Do not use if safety button is up	24	18.0
Too early introduction of this food must be done under guidance of your healthcare professional	21	15.8
Juice / sweetened liquids can cause tooth decay	21	15.8
Dental care	20	15.0
Not to be used as a milk substitute	15	11.3
Ensure child is sitting while feeding	14	10.5
Do not feed directly from the container	13	9.8
If microwaving take care	12	9.0
Do not reheat	12	9.0
Do not sweeten	10	7.5
Do not microwave in packaging	8	6.0
Not suitable for children under x months	8	6.0
Keep cap away from children	8	6.0
Your baby's milk but no water shall be used for mixing in accordance with medical advice	7	5.3
Do not use if seal is broken	7	5.3

Categories of warnings	Number of labels	Percentage of labels
Do not add salt	5	3.8
Do not refreeze	4	3.0
Do not heat in the microwave	3	2.3
Not intended as a meal replacement	3	2.3
Ensure jar and cap are undamaged	3	2.3
Never force feed your baby	3	2.3
Heat breast milk with care	2	1.5
Use of a wet spoon could result in powder clumping	2	1.5
Follow the preparation instructions exactly	2	1.5
Since this product contains viable bacteria follow the instructions as per storage	2	1.5
Every care has been taken but (fruit) stone fragments may remain	2	1.5
Do not cook or use boiling water	1	0.8
Only feed to children accustomed to chewing solid food	1	0.8
Only give to babies when they are developmentally ready	1	0.8
Feed from a clean spoon (never a bottle)	1	0.8
Keep to the recommended dosage	1	0.8

2.5 Regulation 4(1)(d)

Existing text:

4(1)(d) include a statement that such foodstuff is not intended for infants under 6 months of age and that early introduction of such foodstuff may have health hazards for infants;

Rationale for suggested text changes:

- The *Draft Guide for Marketing Complementary Foods* (Quinn *et al.*, 2010) recommends including a message on complementary food labels that states in a conspicuous way the importance of exclusive breastfeeding for the first six months of life, in line with the *Global Strategy for Infant and Young Child Feeding* (WHO/UNICEF, 2003).
- The early introduction of complementary foods is common practice in South Africa, with over 56% of infants in peri-urban Western Cape (Sibeko *et al.*, 2005), 61% in rural KwaZulu-Natal (Faber & Benadé, 2007), and 73% in rural Limpopo (Mushaphi *et al.*, 2008) having received complementary foods before four months of age. The average age of introduction of complementary foods is reported to be two to three months of age (Faber & Benadé, 2007; Mushaphi *et al.*, 2008; Ghuman *et al.*, 2009), although studies show that solids can be introduced as early as the first week (Mamabolo *et al.*, 2004; Sibeko *et al.*, 2005; Soguala & Puoane, 2008). The main reasons provided by mothers for the early introduction of complementary foods include the perceived inadequate production of breast-milk and the belief that breast milk alone was not enough to satisfy the infant (Sibeko *et al.*, 2005; Ghuman *et al.*, 2009; Soguala & Puoane, 2008; Kruger & Gericke, 2003).
- Bearing in mind the fact that the early introduction of solids is the rule rather than the exception in South Africa, it would be prudent to require a message stating the importance of exclusive breastfeeding on complementary foods and drinks. Such a message could be incorporated into the text required by regulation 4(1)(d).

- Our research showed that of the 20 (13%, n=160) labels that stated the importance of exclusive breastfeeding for the first six months of life, 15 (75%) undermined or weakened this message by adding qualifying statements as listed below:
 - a) *“The World Health Organization recommends exclusive breastfeeding for the first six months of life. However every baby is different and you may want to speak to your healthcare professional on what is best for your baby.”*
 - b) *“The Department of Health recommends exclusive breastfeeding for the first six months. Unless otherwise advised by your health professional solid food should not be started any earlier than 4-6 months.”*
 - c) *“The Department of Health recommends exclusive breastfeeding for the first six months. If you choose to wean earlier our ingredients are suitable after 4 months.”*
 - d) *“From about 4 months*. *Consult your Health Visitor. The Department of health recommends exclusive breastfeeding for first six months.”*
- Example a) creates doubts as to the relevance of a public health message endorsed by the World Health Organization (WHO) to an individual infant. Although it is by no means incorrect to refer the consumer to their healthcare professional for infant feeding advice, this would be better phrased as follows: “The World Health Organization recommends exclusive breastfeeding for the first six months of life. Consult your healthcare professional for advice/more information.” Example b) – d) refer to four months as a suitable age of introduction thereby undermining the message breastfeed exclusively for the first six months of life.
- Prescribing text may prevent the undermining or weakening of the intended message.

Suggested text changes:

4(1)(d) ~~include a~~ *the following statement that: “Give only breast milk, and no other foods or liquids, to your infant for the first six months of life. such foodstuff is not intended for infants under 6 months of age and that The early introduction of such this foodstuff may have a negative effect on your infant’s health health hazards for infants;*

- (i) *Text creating doubt as to the suitability of the statement in regulation 4(1)(d) or offering an alternative to this statement, due to the unique needs of the infant, the advice of healthcare professional or for any other reason, is prohibited.*

2.6 Regulation 4(1)(e) and (f)

Existing text:

4(1)(e) *Use names, phrases or expressions such as "maternalised", "humanized", "breast milk substitute" or any derivative form of these terms, or any similar expression that may suggest a strong similarity between the product and breast milk.*

4(1)(f) *Use expressions or names that aim to identify the product as suitable to feed infants, such as the expression "baby", "first growth" or similar ones.*

Rationale for suggested text changes:

- Regulation 4(1) provides a list of information that is required to be provided on complementary food labels. However, regulation 4(1)(e) and (f) deals with names or expressions that are NOT allowed to appear on complementary food labels. As such, the regulation does not read correctly when the text from 4(1) is read together with points (e) and (f) as technically the regulation then

requires the exact practices it intends to prohibit. As such we recommend removing points (e) and (f) from regulation 4(1) and creating a new regulation 4(3) dealing with practices NOT allowed on complementary food labels (as per section D.1. of this document which suggests other new text).

Regarding regulation 4(1)(f):

- The labels of complementary foods should not use phrases such as “from the start”, “for the whole family” or “first stage” (Quinn *et al.*, 2010). This is because such phrases imply/could be understood to mean that the product is suitable for use for infants younger than six months of age.
- Our research showed that 59 (37%, n=160) labels carried such phrases, of which 32 (54%) did not have an appropriate recommended age of introduction (either no age of introduction or an age of introduction less than six months), while the remaining 27 (46%) labels recommend an age of introduction that is equal to or greater than six months.
- A list of the phrases used by the labels included in our study is provided in Table 7. Some of these phrases are never appropriate, however those marked with an asterisk should not lead to the early introduction of the product by virtue of their use if accompanied by a clear age recommendation in months/years, provided in close proximity to the phrase e.g. “Stage 1 Cereal. Suitable from 6 months of age”. As provision of a suitable age recommendation on the main panel of the product has been made mandatory by these regulations (regulation 4(1)(h), the phrases marked with an asterisk should not be a concern. This distinction is made on the basis that, for example, a “Stage 1 Cereal” does not necessarily communicate a suitable age of use, whereas “First food” could be understood literally as the very first food fed to an infant (which should be breast milk). It would be most helpful to manufacturers to provide examples of what is and is not allowed in a guideline document as these distinctions are not always clear nor easily made, and should ideally be based on consumer research.

Table 7: Phrases used on the complementary food labels that imply suitability of use before six months of age

Stage 1 / Step 1
Baby(ies) / Babes*
Best start in life / Healthy start for life
1 (One)
First / First foods / 1st tastes
For the whole family / For all the family
Starter / Starter food / For starter eaters
All ages
Junior
From an early age
Tots

* Only captured as a “phrase indicating suitability of use before six months” if the product label did not provide a recommended age of introduction in months/years.

Suggested text changes:

4(3) The label or container of a complementary food and any other liquid or milk-like product marketed or otherwise represented as suitable for feeding an infant or young child shall not –

- (c) Use names, phrases or expressions such as "maternalised", "humanized", "breast milk substitute" or any derivative form of these terms, or any similar expression that may suggest a strong similarity between the product and breast milk;*
- (d) Use ~~expressions or~~ names, phrases or expressions that ~~aim to identify~~ imply that the product ~~as is~~ suitable to feed infants younger than 6 months of age, such as ~~the expression~~ "baby", "first growth/food", "best start in life", "for the whole family", "starter food", "all ages" or similar ~~ones~~ names, phrases or expressions.*

2.7 Regulation 4(1)(g)Existing text:

4(1)(g) specify where label space permits, the following message, or other words relaying the same message shall be indicated on the label- "From 6 months onwards, together with breast milk complementary food can be prepared at home using local foods. Ask a health worker or health professional for advice".

Rationale for suggested text changes:

- The *Draft Guide for Marketing Complementary Foods* (Quinn *et al.*, 2010) recommends including a message on complementary food labels that states, in a conspicuous way, the importance of the addition of complementary foods from six month together with continued breastfeeding up to two years or beyond, in line with the *Global Strategy for Infant and Young Child Feeding* (WHO, 2003).
- None of the labels in our study provided this full message, although 52 (33%, n=160) of the labels provided a partial message.

Suggested text change:

*4(1)(g) specify where label space permits, the following message, or other words relaying the same message ~~shall be indicated~~ on the label- "From 6 months onwards, ~~together with breast milk~~ complementary food can be prepared at home using local foods, **while continuing to breastfeed until two years or beyond**. Ask a health worker or health professional for advice".*

2.8 Regulation 4(1)(h)Existing text:

4(1)(h) indicate the age range of the infants older than 6 months or young children for which the product is suitable, under the name or description of the product on the front main panel of the label in letters that are not less than 2mm in height for the smallest letters

Rationale for suggested text changes:

- It could be argued that an "age range" could be indicated using a phrase such as "toddler", and therefore we recommend requiring that the age range be provided in months and years.

- The WHO states that complementary foods should be introduced at six months of age (180 days) while continuing to breastfeed (WHO, 2003). Regulation 4(1)(h) should be corrected to reflect this normative guidance.
- Two (1%, n=160) products used included in our research used the wording "From about x months", which is not suitable if x is equal to six months.

Suggested text changes:

4(1)(h) indicate the age range (in months or years) of the infants ~~older than~~ 6 months and older or young children for which the product is suitable, under the name or description of the product on the front main panel of the label in letters that are not less than 2mm in height for the smallest letters.

Wording such as "from about 6 months" is not permitted as it may be understood to mean before 6 months of age.

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