

INTRODUCTION .....	XVI
STUDY GOALS AND OBJECTIVES.....	XVI
REASONS FOR DOING THE STUDY .....	XVI
SCOPE AND FORMAT .....	XVI
METHODOLOGY AND INFORMATION SOURCES.....	XVII
ANALYST CREDENTIALS.....	XVII
RELATED BCC REPORTS .....	XVII
BCC ONLINE SERVICES.....	XVIII
DISCLAIMER .....	XVIII
SUMMARY.....	XIX
<i>SUMMARY TABLE MARKET FORECAST FOR U.S. ETHICAL</i>	
<i>NUTRITION PRODUCTS BY CATEGORY, THROUGH 2012 (\$</i>	
<i>MILLIONS)</i> .....	XIX
<i>SUMMARY FIGURE TOTAL REVENUES OF U.S. ETHICAL</i>	
<i>NUTRITION PRODUCTS BY CATEGORY AT MANUFACTURERS'</i>	
<i>SALES LEVELS (\$ MILLIONS)</i> .....	XX
INDUSTRY OVERVIEW.....	1
DEFINITION OF ETHICAL NUTRITION .....	1
HUMAN DIGESTION.....	1
STRUCTURES AND FUNCTIONS OF THE	
GASTROINTESTINAL SYSTEM .....	1
Structures and Functions ... (Continued) .....	2
DIGESTION AND ABSORPTION .....	3
Digestion and Absorption (Continued) .....	4
Digestion and Absorption (Continued) .....	5
Digestion and Absorption (Continued) .....	6
EFFECTS OF AGING .....	7
NUTRITION .....	8
<i>TABLE 1 ESSENTIAL NUTRIENTS REQUIRED FOR HEALTH</i> .....	8
<i>FIGURE 1 DAILY MEAN ENERGY INTAKE FOR PERSONS AGES 2</i>	
<i>MONTHS TO 19 YEARS (%)</i> .....	9
MALNUTRITION.....	10
TYPES OF SUPPLEMENTAL NUTRITION.....	11
Oral Feeding .....	11
Tube Feeding .....	11
Total Parenteral Nutrition .....	12
IMPORTANCE OF THE INDUSTRY .....	12
HISTORY OF THE INDUSTRY.....	13
INFANT NUTRITION .....	14
PEDIATRIC ENTERAL NUTRITION .....	15
<i>TABLE 2 CONTINUOUS VERSUS INTERMITTENT FEEDINGS</i> .....	16
ADULT ENTERAL NUTRITION .....	16

PARENTERAL NUTRITION .....	17
REGULATORY ENVIRONMENT .....	18
THE INFANT FORMULA ACT OF 1980.....	19
The 1986 Amendments to the Infant Formula Act .....	19
REALIGNMENT OF THE CENTER FOR FOOD SAFETY AND	
APPLIED NUTRITION.....	20
SAFETY.....	21
COST CONTAINMENT.....	22
ADVERTISING .....	22
PACKAGING.....	23
END-USER ISSUES.....	24
DEMOGRAPHICS .....	25
<i>TABLE 3 TOTAL U.S. LIVE BIRTH RATES, 1960-2005 (THOUSANDS).....</i>	<i>26</i>
<i>FIGURE 2 TOTAL U.S. LIVE BIRTH RATES, 1960-2005 (THOUSANDS).....</i>	<i>26</i>
<i>TABLE 4 U.S. POPULATION BY SELECTED AGE GROUPS AND BY</i>	
<i>    PERCENT OF TOTAL POPULATION, 2005-2030 (THOUSANDS).....</i>	<i>27</i>
<i>FIGURE 3 U.S. POPULATION BY SELECTED AGE GROUPS, 2005-</i>	
<i>    2012 (THOUSANDS).....</i>	<i>28</i>
<i>FIGURE 4 PERCENT U.S. POPULATION BY SELECTED AGE</i>	
<i>    GROUPS, 2005-2012 (%).....</i>	<i>28</i>
FORMULAS WITH DHA AND ARA ADDED .....	29
DHA, ARA AND INFANT GROWTH.....	29
DHA, ARA and Infant Growth (Continued) .....	30
GENETICALLY ENGINEERED PRODUCTS.....	31
ENTERAL VS PARENTERAL NUTRITION .....	32
INTERNET CAUTIONS.....	32
PERCUTANEOUS ENDOSCOPIC GASTROSTOMY .....	33
FIBER-BOOSTED FORMULA .....	34
FUTURE TRENDS .....	34
FUTURE TRENDS (CONTINUED).....	35
INFANT AND PEDIATRIC NUTRITION.....	36
DEFINITION OF INFANT FORMULA.....	36
INFANT FORMULA REGULATION .....	36
GENERAL INGREDIENT SAFETY REQUIREMENTS .....	37
REQUIREMENTS SPECIFIC TO INFANT FORMULA .....	37
Requirements Specific ... (Continued).....	38
BREAST MILK VS. INFANT FORMULA .....	39
<i>TABLE 5 PHASES OF BREAST MILK PRODUCTION .....</i>	<i>40</i>
Breast Milk vs. ... (continued) .....	41
Breast Milk vs. ... (continued) .....	42
<i>TABLE 6 NUTRITIONAL COMPARISON OF BREAST MILK AND</i>	
<i>    COMMERCIAL INFANT FORMULAS .....</i>	<i>43</i>
<i>TABLE 6 (CONTINUED).....</i>	<i>44</i>

<i>TABLE 7 VITAMIN COMPOSITION COMPARISON OF BREAST MILK AND COMMERCIAL INFANT FORMULAS</i> .....	45
<i>TABLE 7 (CONTINUED)</i> .....	46
NEW GROWTH CHARTS .....	46
FACTORS IMPACTING INFANT FORMULA GROWTH .....	47
WIC PROGRAM .....	48
WIC Program (Continued) .....	49
WIC Program (Continued) .....	50
WIC Contract Bidding .....	51
INFANT FORMULA AND LIFE-LONG OBESITY AND DIABETES .....	52
MILK-BASED INFANT FORMULA .....	53
Product Description .....	53
Product Description (Continued).....	54
Product Description (Continued).....	55
Product Description (Continued).....	56
New Developments .....	57
SOY-BASED INFANT FORMULA.....	57
Product Description .....	58
Product Description (Continued).....	59
DISEASE-SPECIFIC PEDIATRIC FORMULAS .....	60
<i>TABLE 8 CONDITIONS AFFECTING NUTRITION</i> .....	61
<i>TABLE 8 (CONTINUED)</i> .....	62
Disease-specific Pediatric ... (continued).....	63
Disease-specific Pediatric ... (continued).....	64
Product Description .....	65
PEDIATRIC FORMULAS AND SUPPLEMENTS .....	65
Product Description .....	66
Product Description (Continued).....	67
<i>TABLE 9 SELECTED PEDIATRIC NUTRITIONAL COMPOSITIONS</i> .....	68
<i>TABLE 9 (CONTINUED)</i> .....	69
INFANT AND PEDIATRIC NUTRITION MARKET ANALYSIS .....	69
<i>TABLE 10 MARKET FORECAST FOR U.S. INFANT AND PEDIATRIC NUTRITION PRODUCTS BY CATEGORY, THROUGH 2012 (\$ MILLIONS)</i> .....	70
<i>FIGURE 5 MARKET FORECAST FOR U.S. INFANT AND PEDIATRIC NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (\$ MILLIONS)</i> .....	71
<i>TABLE 11 MARKET SHARE FOR U.S. INFANT AND PEDIATRIC NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (%)</i> .....	71
<i>FIGURE 6 REVENUE DISTRIBUTION FOR U.S. INFANT AND PEDIATRIC NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (%)</i> .....	72
MILK-BASED INFANT FORMULA .....	72
<i>TABLE 12 U.S. MILK-BASED INFANT FORMULA: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS)</i> .....	73

<i>FIGURE 7 U.S. MILK-BASED INFANT FORMULA:</i>	
<i>MANUFACTURERS' MARKET SHARE, 2007 (%)</i> .....	74
SOY-BASED INFANT FORMULA.....	74
<i>TABLE 13 U.S. SOY-BASED INFANT FORMULA: MANUFACTURERS'</i>	
<i>REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS)</i> .....	75
<i>FIGURE 8 U.S. SOY-BASED INFANT FORMULA: MANUFACTURERS'</i>	
<i>MARKET SHARE, 2007 (%)</i> .....	75
SPECIALIZED INFANT FORMULAS AND PEDIATRIC	
SUPPLEMENTS .....	76
<i>TABLE 14 U.S. SPECIALIZED PEDIATRIC FORMULA:</i>	
<i>MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$</i>	
<i>MILLIONS)</i> .....	76
<i>FIGURE 9 U.S. SPECIALIZED PEDIATRIC FORMULA</i>	
<i>MANUFACTURERS' MARKET SHARE, 2007 (%)</i> .....	77
DISEASE-SPECIFIC INFANT FORMULAS AND PEDIATRIC	
SUPPLEMENTS.....	77
<i>TABLE 15 U.S. DISEASE-SPECIFIC INFANT FORMULA:</i>	
<i>MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$</i>	
<i>MILLIONS)</i> .....	78
<i>FIGURE 10 U.S. DISEASE-SPECIFIC INFANT FORMULA:</i>	
<i>MANUFACTURERS' MARKET SHARE, 2007 (%)</i> .....	78
ADULT ENTERAL NUTRITION .....	79
INTRODUCTION .....	79
ADULT ENTERAL NUTRITION (CONTINUED) .....	80
<i>TABLE 16 ENTERAL FEEDING ROUTES</i> .....	81
<i>TABLE 16 (CONTINUED)</i> .....	82
<i>TABLE 17 ENTERAL FEEDING: ADMINISTRATION METHODS</i> .....	83
<i>TABLE 17 (CONTINUED)</i> .....	84
ADULT ENTERAL NUTRITION (CONTINUED) .....	85
ADULT ENTERAL NUTRITION (CONTINUED) .....	86
FACTORS IMPACTING GROWTH.....	87
INTACT ADULT ENTERAL FORMULA .....	88
PRODUCT DESCRIPTION .....	88
NEW DEVELOPMENTS .....	89
MODULAR ADULT ENTERAL FORMULA .....	90
PRODUCT DESCRIPTION .....	90
Product Description (Continued) .....	91
DISEASE-SPECIFIC ADULT ENTERAL FORMULA .....	92
PRODUCT DESCRIPTION .....	93
Product Description (Continued) .....	94
ELEMENTAL AND REHYDRATION ADULT ENTERAL FORMULA .....	95
PRODUCT DESCRIPTION .....	95
ADULT ENTERAL NUTRITION MARKET ANALYSIS .....	96

TABLE 18 MARKET FORECAST FOR U.S. ADULT NUTRITION PRODUCTS BY CATEGORY, THROUGH 2012 (\$ MILLIONS).....	97
FIGURE 11 MARKET FORECAST FOR U.S. ADULT NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (\$ MILLIONS).....	97
TABLE 19 MARKET SHARE OF U.S. ADULT NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (%).....	98
FIGURE 12 DISTRIBUTION OF REVENUES FROM U.S. ADULT NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (%).....	98
INTACT ADULT ENTERAL NUTRITION.....	98
TABLE 20 U.S. INTACT ADULT ENTERAL NUTRITION: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS).....	99
FIGURE 13 U.S. INTACT ADULT ENTERAL NUTRITION: MANUFACTURERS' MARKET SHARE, 2007 (%).....	100
MODULAR ADULT ENTERAL NUTRITION.....	100
TABLE 21 U.S. MODULAR ADULT ENTERAL: FORMULA MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS).....	101
FIGURE 14 U.S. MODULAR ADULT ENTERAL FORMULA: MANUFACTURERS' MARKET SHARE, 2007 (%).....	101
DISEASE-SPECIFIC ADULT FORMULAS.....	101
Disease-specific Adult ... (Continued).....	102
TABLE 22 U.S. DISEASE-SPECIFIC ADULT FORMULA: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS).....	103
FIGURE 15 U.S. DISEASE-SPECIFIC ADULT FORMULA: MANUFACTURERS' MARKET SHARE, 2007 (%).....	103
ELEMENTAL AND REHYDRATION FORMULAS.....	103
TABLE 23 U.S. ELEMENTAL AND REHYDRATION FORMULA: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS).....	104
FIGURE 16 U.S. ELEMENTAL AND REHYDRATION FORMULA: MANUFACTURERS' MARKET SHARE, 2007 (%).....	105
PARENTERAL NUTRITION.....	106
INTRODUCTION.....	106
INTRODUCTION (CONTINUED).....	107
PHOTODEGRADATION/OXIDATION REACTIONS.....	108
SORPTION LOSSES.....	108
HYDROLYSIS REACTIONS.....	108
COPRECIPITATION FROM DEGRADATION PRODUCTS.....	109
METABOLIC AND BIOCHEMICAL FACTORS CONTRIBUTING TO VITAMIN DEFICIENCY.....	109
THIAMINE STATUS IN TPN.....	109
VITAMIN C.....	109

OTHER VITAMIN DEFICIENCIES .....	110
TPN AND CANCER PATIENTS.....	110
TPN AND CANCER PATIENTS (CONTINUED) .....	111
FACTORS IMPACTING GROWTH .....	112
AMINO ACID PARENTERAL FORMULA .....	113
PRODUCT DESCRIPTION .....	114
FATS PARENTERAL FORMULA .....	115
PRODUCT DESCRIPTION .....	115
DEXTROSE PARENTERAL FORMULA .....	115
PRODUCT DESCRIPTION .....	116
MICRONUTRIENT AND MULTIVITAMIN PARENTERAL FORMULAS.....	116
PRODUCT DESCRIPTION .....	117
<i>TABLE 24 RECOMMENDATIONS FOR PARENTERAL VITAMIN INTAKE.....</i>	<i>118</i>
<i>TABLE 25 RECOMMENDATIONS FOR PARENTERAL MINERAL INTAKE.....</i>	<i>118</i>
<i>TABLE 26 FACTORS THAT INCREASE OR DECREASE ELECTROLYTE NEEDS .....</i>	<i>119</i>
PARENTERAL NUTRITION MARKET ANALYSIS.....	120
<i>TABLE 27 MARKET FORECAST FOR U.S. PARENTERAL NUTRITION PRODUCTS, THROUGH 2012 (\$ MILLIONS).....</i>	<i>120</i>
<i>FIGURE 17 MARKET FORECAST FOR U.S. PARENTERAL NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (\$ MILLIONS) .....</i>	<i>121</i>
<i>TABLE 28 MARKET SHARE OF U.S. PARENTERAL NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (%) .....</i>	<i>121</i>
<i>FIGURE 18 DISTRIBUTION OF REVENUES FROM U.S. PARENTERAL NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (%).....</i>	<i>122</i>
AMINO ACID PARENTERAL FORMULAS .....	122
<i>TABLE 29 U.S. AMINO ACID PARENTERAL SOLUTION: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS).....</i>	<i>123</i>
<i>FIGURE 19 U.S. AMINO ACID PARENTERAL SOLUTION: MANUFACTURERS' MARKET SHARE, 2007 (%) .....</i>	<i>124</i>
FATS PARENTERAL FORMULAS .....	124
<i>TABLE 30 U.S. FATS PARENTERAL FORMULA: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS) .....</i>	<i>125</i>
<i>FIGURE 20 U.S. FATS PARENTERAL FORMULA: MANUFACTURERS' MARKET SHARE, 2007 (%).....</i>	<i>125</i>
DEXTROSE PARENTERAL FORMULAS .....	126
<i>TABLE 31 DEXTROSE PARENTERAL FORMULA: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS) .....</i>	<i>127</i>

<i>FIGURE 21 DEXTROSE PARENTERAL FORMULA: MANUFACTURERS' MARKET SHARE, 2007 (%)</i> .....	127
MICRONUTRIENT AND MULTIVITAMIN PARENTERAL FORMULAS .....	127
<i>TABLE 32 U.S. MICRONUTRIENT AND MULTIVITAMIN PARENTERAL FORMULA: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS)</i> .....	128
<i>FIGURE 22 U.S. MICRONUTRIENT AND MULTIVITAMIN PARENTERAL FORMULA: MANUFACTURERS' MARKET SHARE, 2007 (%)</i> .....	129
ETHICAL NUTRITION SUPPLIES AND EQUIPMENT .....	130
INTRODUCTION .....	130
FACTORS IMPACTING GROWTH .....	130
FACTORS IMPACTING GROWTH (CONTINUED).....	131
ENTERAL SUPPLIES AND EQUIPMENT MARKET .....	132
PRODUCT DESCRIPTION .....	133
Product Description (Continued) .....	134
PARENTERAL SUPPLIES AND EQUIPMENT MARKET .....	135
PARENTERAL SUPPLIES AND ... (CONTINUED) .....	136
ADMINISTRATION SETS .....	137
PRODUCT DESCRIPTIONS.....	137
ETHICAL NUTRITION SUPPLIES AND EQUIPMENT MARKET ANALYSIS .....	138
<i>TABLE 33 MARKET FORECAST FOR U.S. ETHICAL NUTRITION SUPPLIES AND EQUIPMENT, THROUGH 2012 (\$ MILLIONS)</i> .....	139
<i>FIGURE 23 MARKET FORECAST FOR U.S. ETHICAL NUTRITION SUPPLIES AND EQUIPMENT, 2005-2012 (\$ MILLIONS)</i> .....	139
<i>TABLE 34 MARKET SHARE OF U.S. ETHICAL NUTRITION PRODUCTS BY CATEGORY, 2005-2012 (%)</i> .....	140
<i>FIGURE 24 REVENUE DISTRIBUTION FROM U.S. ETHICAL NUTRITION SUPPLIES AND EQUIPMENT BY CATEGORY, 2005- 2012 (%)</i> .....	140
ENTERAL DELIVERY SYSTEMS SUPPLIES AND EQUIPMENT .....	140
<i>TABLE 35 U.S. ENTERAL DELIVERY SYSTEM SUPPLIES AND EQUIPMENT: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS)</i> .....	141
<i>FIGURE 25 U.S. ENTERAL DELIVERY SYSTEM SUPPLIES AND EQUIPMENT MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (%)</i> .....	142
IV OR PARENTERAL SUPPLIES AND EQUIPMENT.....	142
<i>TABLE 36 U.S. PARENTERAL SUPPLIES AND EQUIPMENT: MANUFACTURERS' REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS)</i> .....	143

<i>FIGURE 26 U.S. PARENTERAL SUPPLIES AND EQUIPMENT:</i>	
<i>MANUFACTURERS' MARKET SHARE, 2007 (%)</i> .....	144
ADMINISTRATION SETS .....	144
<i>TABLE 37 U.S. ADMINISTRATION SET: MANUFACTURERS'</i>	
<i>REVENUES AND MARKET SHARE, 2007 (\$ MILLIONS)</i> .....	145
<i>FIGURE 27 U.S. ADMINISTRATION SET: MANUFACTURERS'</i>	
<i>MARKET SHARE, 2007 (%)</i> .....	145
TOTAL MARKET SUMMARY .....	146
<i>TABLE 38 MARKET FORECAST FOR U.S. ETHICAL NUTRITION</i>	
<i>PRODUCTS BY CATEGORY, THROUGH 2012 (\$ MILLIONS)</i> .....	146
<i>FIGURE 28 MARKET FORECAST FOR U.S. ETHICAL NUTRITION</i>	
<i>PRODUCTS BY CATEGORY, 2005-2012 (\$ MILLIONS)</i> .....	147
TOTAL MARKET PERCENTAGE BY PRODUCT TYPE .....	147
<i>TABLE 39 TOTAL REVENUES, MARKET SHARES, AND NUMBERS</i>	
<i>OF MANUFACTURERS OF U.S. ETHICAL NUTRITION PRODUCTS</i>	
<i>BY MARKET SEGMENT, 2007 (\$ MILLIONS)</i> .....	148
<i>FIGURE 29 PERCENT SHARES OF U.S. ETHICAL NUTRITION</i>	
<i>PRODUCTS BY MARKET SEGMENT, 2007 (%)</i> .....	148
INDUSTRY PARTICIPANTS BY PRODUCT TYPE .....	149
<i>TABLE 40 ETHICAL NUTRITION INDUSTRY PARTICIPANTS BY</i>	
<i>PRODUCT CATEGORY, 2006-2007</i> .....	149
<i>TABLE 40 (CONTINUED)</i> .....	150
COMPANY PROFILES .....	150
ALARIS MEDICAL SYSTEMS, INC. (CARDINAL HEALTH).....	150
BAXTER INTERNATIONAL, INC.....	151
B. BRAUN MELSUNGEN AG.....	151
HOSPIRA, INC.....	152
KENDALL HEALTHCARE PRODUCTS .....	153
MEAD JOHNSON NUTRITIONAL GROUP.....	153
NESTLE USA, INC.....	154
NOVARTIS MEDICAL NUTRITION.....	155
ROSS PRODUCTS DIVISION.....	155
PBM PRODUCTS, LLC .....	155
ZEVEX INTERNATIONAL, INC. ....	156
APPENDIX I .....	157
LIST OF COMPANIES .....	157
LIST OF COMPANIES (CONTINUED) .....	158
LIST OF COMPANIES (CONTINUED) .....	159
LIST OF COMPANIES (CONTINUED) .....	160
LIST OF COMPANIES (CONTINUED) .....	161
LIST OF COMPANIES (CONTINUED) .....	162
LIST OF COMPANIES (CONTINUED) .....	163