
Index

- Acute diarrhea, death from, 157
 Acute lower respiratory tract infections
 (ALRTI), 133–136
 etiology of, 134
 frequency of, 134
 mortality due to, 133–134
 nomenclature of, 134
 prevention of, 135–136
 risk factors in, 134–135
 socioeconomic status and, 135
 treatment of, 134–136
 Acute respiratory infection (ARI), 133–136
 Age of mother at birth of child, 343
 Age-specific fertility, 152
 Age-specific mortality rates, 326, 376
 Amenorrhea
 and breastfeeding, 104
 equation converting mean duration of
 breastfeeding into mean duration
 of amenorrhea, 106
 suckling patterns and, 104–106
 Amman (Jordan) study, 259–260
 conceptual framework of, 260
 diet in, 273–274
 feeding practices in, 273–274
 household income in, 263
 housing in, 262
 immunizations in, 272
 intermediate mechanisms in, 269–276
 maternal education in, 262, 277
 maternal reproductive behavior in, 271
 measure of child mortality in, 263–
 264
 nutritional status in, 274–277
 occupation of head of household in,
 263, 277–278
 personal hygiene in, 271–272
 sickness care in, 272–273
 socioeconomic determinants in, 260–
 267
 statistical questions in, 267–269
 upgrading project described, 258–259
 Amoebiasis, 142
 Analytical framework, for study of child
 survival, 25–40; *see also*
 Proximate determinants model
 purpose of, 40
 Anovulation, suckling and, 104
 Anthropometry
 disadvantage of, 51
 as indicator of nutritional status, 51
 and mild and moderate undernutrition,
 130
 mortality and, 58–63
 Arm circumference
 as measure, 65
 mortality and, 59, 61
Ascaris, 170, 174, 180
 lactase activity and, 176
 malnourishment and, 175
 measurement of, 179
 protein deficiency and, 177
 Beliefs about disease causation, 36
 Biological factors, in dietary intake, 85
 Biological reproduction function, for child
 survival, 231
 Biomedical research, 5–10
 on infectious diseases, 5–8
 on malnutrition, 9–10
 on parasitic diseases, 8–10
 Birth intervals, 271
 breastfeeding and, 108–109, 271
 child's growth and, 297
 child's survival risks and, 262
 maternal education and, 262
 mortality and, 335
 Birth order
 effects of, 336

- Birth order (continued)*
 as explanatory variable, 311
 Birth spacing, *see* Birth intervals
 Birth weight, as explanatory variable, 311
 Bottlefeeding
 breastfeeding and, 10, 98
 contents of, 201
 reasons for adopting, 203
 Brass technique, 328–331
 declining mortality and, 330–331
 sources of error in, 330
 value of, 330
 Breastfeeding, 93–110
 age-specific, 77
 and birth intervals, 108–109, 271
 bottlefeeding and, 10, 98
 contraceptive effect of, 104–109
 death of another child and, 344
 differentials in practice of, 202–203
 distinguishing between full and partial,
 201
 duration of, 95–96, 311
 effects of modernization on impact of,
 109–110
 in El Progreso project, 297
 enhanced maternal–infant bonding
 associated with, 93–94
 equation converting mean duration of
 breastfeeding into mean duration
 of amenorrhea, 106
 factors influencing impact of, 95–100
 full or exclusive, definition of, 95
 in infant mortality, 315–317
 infection load in environment and, 99
 local ecological context and, 110
 in Malaysian Family Life Survey,
 309–310, 315–317, 320–321
 maternal education and, 102–103, 274
 measuring impact of, 100–109
 mechanisms of, in child survival, 93
 and morbidity, 103
 and mortality, 103, 202–203
 mother’s employment and
 abandonment of, 204–205
 nutrient intake in, 100–102
 parental education and, 87
 postpartum abstinence and, 107–108
 reasons for not breastfeeding or
 stopping, 318
 respiratory illness and, 102
 retrospective measurement of duration
 of, 202
 sample selection bias in, 337–338
 self-selection bias in, 103
 socioeconomic status and, 109
 suckling pattern in, 96–97
 supplementing child’s diet and, 97–99
 water/sanitation availability and, 99
 weaning-food contamination and, 98–
 99
 Breastmilk
 anti-infective properties of, 93, 94,
 102–103
 child growth as measurement of
 intake, 101–102
 deuterium dilution technique as
 measurement of, 101
 as food source, 273
 mechanical measurement of production
 of, 100
 nutrients available in, 94
 weighing of, 101
 Caloric availability, and mortality risks, 11
Campylobacter jejuni, in diarrhea, 145
 Case-fatality rate, definition of, 150
 “Cause of death,” redefinition of, 4
 Cell-mediated immunity, 53, 54
 Child care
 economic activity and, 203–206
 other preschoolers in household and,
 298
 and resources of mother, 261–262
 and sex preference in care, 206–207
 Child mortality, *see* Mortality
 Child mortality model, 370
 age groups in, 372–373
 disease categories in, 373–374
 health intervention programs in, 374–
 375
 Clinic-based food-weighing studies, 76
 Clinical trials, purpose of, 25
 Cluster sampling method, 153
 Community-level initiatives, 3
 Community-level variables, 37–39
 ecological setting, 37–38
 health system variables, 38–40
 political economy, 38
 Computer software, in mortality estimates,
 341
 Controlled design research, effectiveness of,
 20
 Controlled studies, flaw in using, 16
 Covariates in mortality, estimating, 332–336
 Cross-disciplinary communication, barriers
 to, 4
 Curative versus preventive care, 368–369

- Data collection, operational strategies in, 15–17
- Death rate
 definition of, 150
 dependent variable in, 268
- Death ratio, definition of, 150
- Demand determinants, in economic variables, 225–228
- Demographic constraints, 379–380
- Demographic (census) data, estimating mortality from, 152
- Density models, 349
- Diarrheal disease, 141–158
 anthropometric indicators and, 65
 antibiotic therapy and, 158
 bacterial agents associated with, 158
 causes of, 5, 141–142
 control of, 6
 curative orientation to control of, 6
 dehydration and, 144, 145, 157
 enteric pathogens associated with, 143–144
 etiologic agents of, 142–146
 and height-for-age, 56–58
 incidence of, 141
 interventions in, 156–158
 in malnutrition, 52, 374
 mortality due to, 141
 in Narwangel project, 292
 in nutrient absorption, 52
 nutritional status and, 56, 57
 nutritional therapy and, 158
 parasitic causes of, 142
 physical growth and, 52
 rehydration therapy in, 6
 risk factors for, 5
 rotavirus in, 144, 145
 vaccines in, 157
 weight-for-age as indicator of, 56–57
 weight-for-height as indicator of, 56–58
 withholding of foods and fluids during, 36
- Diarrheal morbidity and mortality, measuring, 149–156
- Diet
 epidemiological studies of, 71
 feeding practices and, 273–274
- Dietary data
 interpretation of, 84–85
 sources of variability in, 78–80
- Dietary history, 74, 81–83
- Dietary intake
 classification of methods to measure, 72–73
 cultural attitudes and, 87
 determinants of, in infants and children, 85–87
 direct measurement of, 7
 food composition tables in, 84
 geographic region and, 87
 measurement of, 69–88
 parents' occupations and, 87
 prospective studies of, 72–73
 retrospective studies of, 72–73
 seasonal fluxes in food availability and, 87
 self-selection of foods in, 86
 sociocultural determinants of, 86–87
 “talking a good diet” in, 81
- Dietary recall method, 74–75, 81, 83
 advantage of, 74–75
 drawback of, 75
- Dietary studies
 objectives of, 70–72
 planning and organizing of fieldwork in, 78
- Dietary study methods
 comparisons of, 80–83
 description of, 73–77
 validation of, 80–83
- Disease, epidemiological studies of, 71
- Disease and death, social etiology of, 257
- “Drug resistance,” 358–359
- Duplicate diets, collection of, 76
- Economic variables in child mortality, 215–234
 alternative strategies for statistical study of merged household and regional variables, 219
 demand functions and, 224
 endowments, 226–227
 and general framework for estimating determinants of child health, 216–220
 health inputs, 231
 health production function and, 216, 218, 230
 implementation of general framework and, 223–225
 microeconomic model of family and, 220–221
 parallel classifications of, 216
 prices, 225–226
 production functions, 224
 purpose of, 215
 reduced-form equations in, 218–219, 224, 231

- Economic variables in child mortality*
 (continued)
 reduced-form input demand function
 and, 217
 specification and measurement of,
 225–228
 study of US infant health determinants
 and, 228–230
- El Progreso project, 287–288, 295–298
 characteristics of, 285–286
 determinants of infant growth in, 296–
 298
 infant mortality rate in, 296
 mortality rates in, 289–291
 objectives of, 287
 socioeconomic scale use in, 295
- Entamoeba histolytica*, 144, 174
 in diarrhea, 142
 malnourishment and, 175
- Environment, as household demand
 determinant, 227
- Environmental contamination
 assessing, 32–33
 biological interactions among
 proximate determinants and, 42
 in proximate determinants framework,
 27, 30–31
- Epidemiologic constraints, 379–380
- Epidemiological studies, purpose of, 26, 215
- Escherichia coli*
 definition of, 146
 in diarrhea, 145
 plasmid-mediated enterotoxins
 produced by, 158
 transmission of, 146, 156, 157
- Ethnicity, as explanatory variable, 312
- Family, microeconomic model of, 220–221
- Family income, in mortality risks, 11
- Family planning programs
 effect of different types of fieldworkers
 in, 234
 maternal education and effect of, 233
- Fatality rates, 377
- Father's education, *see* Paternal education
- Father's occupation, 335
- Fertility surveys, as source of information on
 child mortality, 193
- Field intervention studies, 25–26
- Food-composition tables, 84
- Food diary, 76
- Food distribution programs, 51
- Food fortification programs, planning, 72
- Food preferences, 36
- Food supplements, effects of, 65
- Food-weighing techniques, 82–83
 problems of, 75–76
- Geohelminths, 170
- Giardia lamblia*, 144, 170, 174, 180
 in diarrhea, 142
 malnourishment and, 175
 transmission of, 157
- GOBI-FF strategy (growth monitoring, oral
 rehydration therapy for diarrhea,
 breastfeeding, immunization,
 food supplements, and family
 planning), 3
- Gross national product, and child survival,
 12
- Growth faltering, 30–32
- Hazard model, 320, 332–336
 in analyzing covariates of infant and
 child mortality, 338–339
 bias in, 337
 computer software in estimating, 341–
 342
 description of, 333
 randomization in, 338
- Health facilities in developing countries,
 underutilization of, 6
- Health heterogeneity, 230, 232
- Health inputs, economic variables and, 227–
 228
- Health intervention programs
 acceptance of, 7
 biosocial interrelationships of, 4
 demographic impact of, 7–8
 evaluation of, 336–338
 inference from study data of, 300–302
 mathematical models and, 17–18
 policy issues in, 368–370
 population target groups in, 369–370
 promotion versus services in, 369
 resource categories in, 382–384
 sample selection bias in, 301–302,
 337
 and socioeconomic determinants, 281–
 303; *see also* El Progreso
 project, Matlab project, and
 Narangwal project
 use-effectiveness of, 7

- Health production function, 216
 obtaining consistent estimates of, 218
- Health-system variables, 37–40
- Height-for-age
 diarrhea and, 56–58
 as indicator of stunting, 54
 mortality and, 60
- Helminth infections, 163, 164, 180
 controlling chronic parasitism due to, 168
 detection of, 179
 estimation of intensity of, 182
 measurement of, 179, 181
- Holoendemic malaria, 171–173
 residual insecticide control of, 173
- Hookworm
 effects of, 167
 and iron-deficiency anemia, 176
 protein deficiency and, 177
- House density, as explanatory variable, 311–312
- Household composition, 312
- Household income, 312
 in Amman study, 263
- Household-level research, in social science research, 13
- Household-level variables, 36–37
- Household surveys
 contradictory results of, 209
 design of, 207–210
 elements of good survey, 209–210
 medical beliefs and, 210
 site of, 207–208
 time budgets in, 208
- Housing, in Amman study, 263
- Illness, physical growth and, 52
- Immune system, 53
 undernutrition and, 130
- Immunocompetence, malnutrition and, 53, 64, 65
- Incidence rate, definition of, 149
- Independent variables, in social science research, 13–14
- Individual-level variables, 34–36
- Infant deaths, mother's age and, 313–315
- Infant feeding, asking questions about, 201–202
- Infant mortality
 breastfeeding in, 315–317
 sanitation and, 315, 320
- Infection
 biological synergy of malnutrition and, 9
 in malnourished infants, frequency and severity of, 54–58
 malnutrition and, 42
 in nutrient metabolism, 52
 nutritional intervention in, 64
 nutritional status and risk of, 56–58
- Infectious diseases
 biomedical research on, 5
 mathematical models of, 17–18, 347–363
- Instrumental variables, 340
- Intermediate variable approach, *see* Proximate determinants framework
- Intervention projects, *see* Health intervention programs
- Intervention studies, purpose of, 26
- Intestinal parasites, fecal sample analysis of, 182–183
- Iron-deficiency anemia, hookworms and, 176
- Lagrange's method, 251
- Leishmania*, 169–170
- Life history matrix, 318
- Life table probabilities, 325–326
- Longitudinal observation, in population studies, 15–16
- Longitudinal studies, in diarrheal morbidity, 155–156
- Malaria
 acquired immunity and, 171, 173
 chemotherapy and, 167, 174
 consequences of, for infant mortality, 172–173
 control of, 166, 167
 duration of, 164
 on epidemic scale, 171–172
 as explanatory variable, 13–14
 immunosuppressive effect of, 178
 insecticidal control of, 174
 intensity of transmission of, 166
 long-term control of, 8
 low transmission areas of, 170–171
 mechanisms of, 166
 modeling history of, 349
 mortality due to, 170–174

Malaria (continued)

- perinatal mortality from, 172
- prenatal effect of, 170
- prevention of effects of, on children, 166–167
- Ross–Macdonald model of transmission of, 355
- stopping transmission of, 173–174
- Malarial parasites
 - detection of, 179
 - identification of, 181–182
- Malaysian Family Life Survey (MFLS), 307–321
 - breastfeeding and, 315–317, 320–321
 - conceptual framework of, 310–313
 - children “unwanted” in, 319
 - children given away and, 309
 - data used in mortality analysis of, 308–309
 - empirical model in, 310–313
 - explanatory variables in, 310–312
 - illustrative findings in, 313–317
 - initial purpose of, 308
 - mortality rates in, 307
 - quality of data in, 309–310
 - research strategy in, 312–313
- Male bias, in reporting on women’s roles, 203
- Male infants, advantages given to, 206
- Malnutrition
 - biomedical research on, 9–10
 - diarrhea and, 52, 374
 - estimating cumulative effect of, 50
 - extent of, in developing countries, 174
 - grade of, 30
 - immune system and, 53
 - infection and, 9, 42, 54–58
 - mild and moderate, 52–63
 - redefinition of, 10
 - synergism between infection and, 8, 174–175
- Market prices, shadow prices of
 - commodities produced in home versus, 234
- Market wage opportunities of men and women, 220–221
- Maternal education, 193–203, 312, 335
 - in Amman study, 277
 - belief systems and, 194
 - bias in, 337
 - birth intervals and, 262
 - breastfeeding and, 102–103, 274
 - choice of measure for, 193

- cultural context and, 196, 210–211
- economic effects of, 221–222
- and educational level of society as a whole, 197
- family planning programs and, 233
- geographic access to medical facilities and, 200
- immunization and, 272
- income and, 194–195
- and increase in birth weight, 232
- and maternal nutrition, 198
- measuring, 193
- medical beliefs and practices and, 200–201
- and mortality, 11–12, 262, 298, 336–337, 343
- and prospective education of children, 195
- and public program interventions, 222–223, 233
- and reduction in child mortality, testing hypothesis of, 194–198
- relative risk of death and, 335
- and shift of power away from patriarch, 194
- underestimation of women’s power in traditional societies and, 196–197
- and urban/rural residence, 332
- vital intermediate factors and, 199–200
- Maternal factors, in proximate determinants framework, 27, 30
- Maternal reproductive behavior, 271
- Mathematical models
 - biological and epidemiological “acceptability” of direct parameter estimates in, 357–358
 - goodness-of-fit criteria in, 357
 - health programs and, 17–18
 - of infectious diseases, 347–363
 - models guiding intervention, 358–361
 - monitoring and data collection designs, 361–362
 - in planning control programs, 360
 - problem-dependent goodness-of-fit criteria in, 358
- Matlab project, 288, 298–300
 - characteristics of, 285–286
 - mortality rates in, 289–291, 298
 - objectives of, 288
 - sex differentials in, 299–300
- Measles, 128–133

Measles (continued)

- availability of medical care and, 132
 - case-fatality rates in different geographic areas, 129
 - complications from, 131
 - infection and, 131
 - mortality due to, 55–56, 128–130
 - mortality risk factors and, 130–132
 - nutritional status and, 130–131
 - prevention of, 132
 - vaccinations for, 132–133, 210
- Model life tables (Coale–Demeny), 326
- Modeling resource allocation, 367–387
- policy issues in, 368–370
 - resource constraints in, 367–368
- Morbidity
- definition of, 26
 - nutrition interventions and, 62–64
- Morbidity survey, 154–155
- Mortality
- anthropometric indicators and, 58–63
 - arm circumference-to-height and, 59, 61
 - birth intervals and, 335
 - Brass-type estimates of, 328–331
 - breastfeeding and, 103, 335
 - growth faltering and, 30–32
 - and height-for-age, 60
 - maternal education and, 262, 298, 336–337, 343
 - mathematical models and, 17
 - measures of, in Amman study, 263–264
 - and nutrition interventions, 62–64
 - nutritional status and, 276–277
 - obstacles to measuring, 191–193
 - proximate determinants of, 5
 - socioeconomic characteristics and, 25
 - and weight-for-age status, 59–60
 - and weight-for-height, 60
- Mortality analysis, problems posed by, 28–29
- Mortality rate
- and age composition, 325
 - definition of, 150
- Mortality risks, 11–12
- Mortality survey, 153–154
- Mother's age at time of birth, 336
- as explanatory variable, 311
 - infant mortality patterns and, 313–315
- Mother's education, *see* Maternal education

Mother's employment

- and abandonment of breastfeeding, 204–205
 - and children left at home, 204
 - and illness of child, 205
 - in modern formal sector, 205–206
- Mother's health and nutritional status, 34
- Multiple classification analysis (MCA), 265, 268, 270
- Multivariate statistical analysis, 339–340
- Multivariate techniques, and data from randomized samples, 343
- Narangwal project, 283–287
- anthropometric measurement and, 292–293
 - caloric intake and economic resources in, 295
 - characteristics of, 285–286
 - differential growth in, 292, 293
 - growth determinants using data from, 293–295
 - mortality rates in, 288–289, 291
 - objectives of, 283–287
 - postneonatal mortality rates in, 292
 - socioeconomic determinants and, 292–295
 - socioeconomic status in, 293
- Neonatal tetanus, 119–125
- incidence per 1,000 live births by country, 120
 - mortality from, 120–121
 - mortality risk factors and, 121–123
 - prevention of, 123–125
 - prospective longitudinal studies in, 121
 - TBA training and, 123
 - tetanus toxoid immunization and, 123
- Nippostrongylus brasiliensis*
- and protein–energy malnutrition, 176–177
 - reduction in food intake and, 175–176
- Nonlinear computer optimization program, 380–386
- Nutrient deficiency
- assessing, 33
 - biological interactions among proximate determinants and, 42
 - in proximate determinants framework, 27–28, 31
- Nutrient intake
- in breastfeeding, 100–102
 - food-composition tables and, 84

- Nutrient requirements, 71–72
 as affected by disease, 85–86
- Nutrients
 bioavailability of, measuring, 70
 recommended allowance of, 69
- Nutrition, and host resistance to infection, 53–54
- Nutrition interventions
 effects of, 51
 in infections, 64
 morbidity and, 62–63
 mortality and, 62–63
 role of, 370
- Nutrition research, purpose of, 26
- Nutritional status
 and acute lower respiratory tract infections, 134–135
 definition of, 49, 69–70
 as determinant of child mortality, 274–276
 diarrhea and, 56, 57
 input indicators in, 49
 measles and, 130–131
 measurement of, 9, 49–51
 mortality and, 276–277
 nutrient intakes in, 49
 and risk of infection, 56–58
- Occupation of head of household, 263, 277–278
- Omitted variables bias, 339
- Oral rehydration therapy (ORT)
 in diarrheal diseases, 6, 36
 effectiveness of, 6
 in Kenya, 14
 studies on, 19–20
- Ordinary least squares (OLS), 313
- Parasites
 as direct cause of mortality, 168
 diversity of, 168–170
 generation delayed effect on mortality, 169
 as indirect cause of mortality, 169, 170
 prenatal effect on mortality, 169
- Parasitic diseases, 163–183
 anorexia associated with, 176
 biomedical research on, 8–10
 characteristics of, 164
 general issues and policy on, 163–168
 incidence rate in, 164
 incomplete immunity in, 164–165
 infections distinguished from diseases in, 164
 intensity of infection in, 164
 prevalence rate of, 164
 sampling frequency in, 180
 social dimensions of, 8
 “social synergy” in control of, 8
- Parasitic infections
 cross-sectional studies of, 180
 detection of, 179
 duration of, 164
 in first 5 years of life, 178–179
 in human growth, 177
 indirect effects of, 174–178
 intensity of pathogenic activity in, 180
 longitudinal observations of, 180
 measurement of, 165, 178–183
 prevalence of, 174
 reductions in food intake in, 175–176
 synergism between malnutrition and, 174–175
 techniques for measurement of, 181
- Paternal education, 20, 34, 335
- Personal hygiene, in Amman study, 271–272
- Personal injury control
 measuring, 33–34
 in proximate determinants framework, 28, 32
- Pertussis, 125–128
 age-specific morbidity and, 126
 complications from, 126–127
 mortality due to, 126
 mortality risk factors and, 126–127
 prevention of, 127
 vaccine effectiveness in, 127
- Physical growth of child
 illness and, 52
 mother’s weight and relationship to, 297
- Placental malaria, 172
- Plasmodium falciparum*, 169
 infection histories of, 350–351
 infection rates of, 171
- Political economy, 38
- Polygynous marriages, infant mortality in, 208–209
- Population at risk, definition of, 149
- Population studies, basic approaches to, 15
- Postpartum abstinence, and breastfeeding, 107–108

- Postpartum amenorrhea, mean duration of
 breastfeeding and, 107
- Prevalence models, 348–349
- Prior reproductive loss, as explanatory
 variable, 311
- Probability relationships, 377
- Proportional hazards model, 333
- Prospective studies
 of diarrheal morbidity, 155–156
 of dietary intake, 72–73
- Protein–energy malnutrition, 9
 response to, 50
 stages of development in, 50
- Protozoa, 163
 controlling chronic parasitism due to,
 168
 measurements of, 181
- Proximate determinants, 32–34
 biological interactions among, 42
- Proximate determinants framework, 26–28
 categories of, 27
 premises of, 26
- Proximate determinants model
 advantages of, 40
 cost subsidies in, 39
 formal health system operation in,
 38–40
 institutionalized (imposed) actions in,
 38–39
 public information/education/
 motivation in, 39
 technology in, 40
- Public program interventions
 and education interactions, 222–223
 maternal education and effect of, 233
- “Recall lapse,” cultural factors and, 192
- Relative risk of death, 335
- Resource constraints, 367–368, 370, 378–
 379
- Respiratory illness
 breastfeeding and, 102
 weight-for-age and, 56–57
- Retrospective community data, 318
- Retrospective data on births and deaths,
 accuracy of, 317–318
- Retrospective maternity histories, 327–328
- Retrospective studies of dietary intake,
 72–73
- Rotavirus diarrhea, 144–148
 immunologic protection from, 147
 natural immunity to, 147
 prevention of, 147
 transmission of, 147, 157
- “Routine” surveillance data, in diarrheal
 morbidity and mortality rates,
 150–151
- Rurality scale, as explanatory variable, 312
- Sanitary engineering (water supply and
 sanitation), 237–252
 behavioral and cost relationships in,
 245
 behavioral determinants of water
 usage, 247
 chlorination, 238
 conceptual models available for
 problems of, 241–243
 conventional design procedures in,
 241–243
 development of, 238
 distance to source and quantity of
 water used in, 249–250
 economics of, 241
 epidemiological factors and, 247–248
 as explanatory variable, 311
 health services versus, 369
 holistic conceptual framework of, 238
 incorporating epidemiological
 considerations into design
 procedure, 247–250
 incorporating household behavior into
 design process in, 244–247
 in industrialized countries, 237–241
 inefficiencies due to neglect of actual
 demand information in, 245
 and infant mortality, 315, 320
 interdisciplinary research in, 250
 Lagrange’s method in, 251
 level of service and, 243
 mathematical model for design
 capacity of system and distance
 to water, 244–245
 price levied for water in, 240, 243
 quantities of water used in, 243, 247–
 250
 refinements in techniques of, 239–240
 sewage treatment and, 239
 slow-sand filtration in, 238
 social aspects of health and disease
 and, 251
 “standard water requirements” in,
 244, 245
 “targets” for water use in, 247

- Sanitary engineering (continued)*
 threshold values in, 247, 248
 typhoid death and, 238
 in underdeveloped countries, 241–252
 water quality standards and, 239
 water supply “design rules,” 240–241
- Schistosomiasis, 170
 morbidity due to, 361
- Sentinel surveillance, 152
- Sewage treatment, 239
- Shiga dysentery, 148
- Shigella*
 classifications of, 148
 in diarrhea, 144, 145
 prevention of, 148
 transmission of, 148, 157
- Shigellosis, 148
- Sickness care, as socioeconomic differential,
 272–273
- Single-round surveys, in population studies,
 15–16
- Smoking, effects of on birth weight, 230
- Social aspects of health and disease, 257
- Social determinants of child mortality, 257–
 279
- Social policy, health consequences of, 257
- Social science research, 10–15
 anthropological approach to, 14–15
 macro-level research strategies and
 policy implications in, 11–13
 micro-level research, 13–14
- Socioeconomic characteristics, mortality
 and, 25
- Socioeconomic determinants, 34–40
 in Amman study, 260–263
 child mortality rates for categories of,
 264–267
 community-level variables, 37–39
 dependent variables, 270
 household-level variables, 36–37
 independent variables, 270
 individual-level variables, 34–36
 intermediate mechanisms and, 269–
 276
 intervention projects and, 281–303
 research on, 291–300
- Socioeconomic status
 and acute lower respiratory tract
 infections, 135
 breastfeeding and, 109
 economic factors and, 298–299
- Squatter settlements in Jordan, *see* Amman
 study
- Structural equations, 375–377
- Suckling, measuring frequency of, 105–106
- Surveys, types of, 152–153
- Technology, in proximate determinants
 model, 40
- Technology-oriented health intervention, 4
- Techniques for estimating child mortality,
 325–344
 Brass-type estimates in, 328–331
 design effects in, 340–341
 endogeneity in, 339–340
 estimation of levels and trends, 327–
 331
 estimation of covariates, 332–336
 evaluation of intervention schemes,
 336–338
 independence of observations in, 340
 preliminary methodological
 considerations in, 328–327
 research priorities in, 338–341
 retrospective maternity histories in,
 327–328
 unobserved heterogeneity in, 339
- Tetanus, *see* Neonatal tetanus
- Time-dependent effects, 334
- Time-varying covariates, 333
- Toxoplasmosis, 170
- Transmission model of Dietz, Molineaux,
 and Thomas, 356
- Trichuris*, 170, 174
- Typhoid death rates, reductions due to
 advances in water treatment, 238
- Urban development and health, 259–260
- Urban/rural residence, maternal education
 and, 332
- Vaccine programs, acceptance of, 7
- Value of children, 35–36
- Vibrio cholerae*, in diarrhea, 144
- Viral diarrheas, as term, 142
- Vital records, in developing countries, 151
- Wage rate, paid to women relative to men,
 220–221
- Water and sanitation interventions, health
 services versus, 369
- Water quality standards, 239

Index

401

- Water-related diseases, classifying, 242–243
- Weaning, 201–202
 - food in, 311
- Weaning-food contamination, 98–99
- Weight, as indicator of stunting, 54
- Weight-for-age measurements, 42
 - diarrhea and, 56–57
 - as indicator of general health, 30
 - and mortality, 59–60
- nutritional status and, 274–275
- respiratory infections and, 56–57
- Weight-for-height
 - classifications of, 65
 - diarrhea and, 56–58
 - as indicator of malnutrition, 50
 - and mortality, 60
- Women’s roles, 203–210
- Women’s work, equated with paid employment, 204