Index

AABB see American Association of Blood Banks
acellular pertussis (aP) 175
ACHA see American College Health Association
acquired immunodeficiency syndrome see AIDS
Active Bacterial Core surveillance (ABCs) 12, 95–96
antibiotic resistance 277–278
database 104
  group B streptococcal (GBS) disease 104
active case finding 298
active surveillance 12
acute flaccid paralysis 365
acute respiratory infections 361–362, 365, 373
ADA see Americans with Disabilities Act
adolescents, human immunodeficiency virus (HIV) 306
adults, human immunodeficiency virus (HIV) 306
Advanced Very High Resolution Radiometer 547
adverse event 7
  following immunization (AEFI) 188, 192, 194–195
Adverse Event Reporting System 265
Advisory Committee on Blood Safety and Availability 266
Advisory Committee on Immunization Practices (ACIP) 6, 151
Aedes aegypti
  chikungunya 163
dengue fever 163, 168–169
  yellow fever 163, 551, 553
Aedes albopictus 159, 165
Aedes dorsalis 163
AEFI see adverse event following immunization
Africa, vector-borne diseases 158
African (Lassa) hemorrhagic fever 144
Aggregate Hospitalization and Death Reporting Activity (AHDRA) 661
aggregated antibiograms, antimicrobial resistance 278–279
AHDRA see Aggregate Hospitalization and Death Reporting Activity
AIDS 5–6
  case definitions 10
data analysis 16, 323–331
death rates 6, 99, 530
  emergencies 372
  ethics 597, 599–600
  EuroHIV 83
European HIV/AIDS Surveillance Network 83
health service data 15
  India 317–325
  mobile populations 379–380
  public health statistics 586
  public-private partnerships 652
  registries 436
  resources 8
  risk factors 15
  Russia 327–333
  South Africa 334–341
  surveillance networks 83
  training programs 617–640
  USA 304–307, 310, 312–314
Albana 365–370
alphaviruses 212
America, vector-borne diseases 158
American Association of Blood Banks (AABB) 264, 266
American College Health Association (ACHA) 662
American National Standards Institute Health Level 7 (HL7) 435–444
American Standard Code for Information Interchange (ASCII) 436, 439
Americans with Disabilities Act (ADA) 411
Analysis Software for Word Based Records (AnSWR) 505
anaplasmosis 161
Annex 10
INDEX

antimicrobial resistance (Continued)
retail meat 133, 136–137
Salmonella enterica ser. Newport 139–140
Streptococcus pneumoniae 273–278, 282–285
susceptibility testing 133–138
antimicrobial stewardship programs 7
antimicrobial susceptibility testing 511
EUCAST 83
foodborne diseases 114
antiretroviral prophylaxis 331
antiretroviral therapy (ART) 319–321, 328
data analysis 528, 531
India 318–322
South Africa 338
APEC see Asia–Pacific Economic Cooperation
ArboNet 165–167
arboviruses 159, 161, 165
arenaviruses 144, 212
Argentine (Junin) hemorrhagic fever 144
ARIMA see autoregressive integrated moving average
ART see antiretroviral therapy; automated reagent test
arthropod-borne viruses (arboviruses) 159, 161, 165
Asia see Asia–Pacific Economic Cooperation (APEC) 393, 395–397
Asian tiger mosquito 159
astrovirus 111
ATB see antimicrobial consumption
autism 188
automated reagent test (ART) 360
autoregressive integrated moving average (ARIMA) 538–539
seasonal (SARIMA) 538
average nearest neighbor (ANN) 551–552, 555
avian chlamydiosis 148
avian influenza 144
Babesia microti 158
babesiosis 161, 264
Bacillus 220
Bacillus anthracis 144, 148–149
bioterrorism 212, 217–218
Bacillus Calmette–Guérin (BCG) vaccine 175, 235–236
Bacillus cereus 110, 121
bacteria
culture 511
genetic change 487
infection incidence 514–515
sexually transmitted infections (STIs) 523
vector-borne diseases 158
see also individual species
Balamuthia mandrillaris 270
Banda Aceh (Indonesia) 368
Bartonella benselae/quintana 144
Baylisascaris procyonis 145
BBFE see body fluids exposure
BDS see Biohazard Detection System
BED capture enzyme immunoassay 526, 528
Behavioral Risk Factor Surveillance System (BRFSS) 662, 664
behavioral surveillance
sexually transmitted diseases (STD) 349–350
surveys (BSS) 321, 325
Bell’s palsy 192, 194
BIDS see Border Infectious Disease Surveillance
Biohazard Detection System (BDS) 218
biologic product deviation reports (BPDRs) 265
Biological Space-Time Outbreak Reasoning Module (BioSTORM) 476
biosafety 230
BioSense 661
bioterrorism 211–220
International Health Regulations (IHR) 65
bioterrorism agents 212–213
anthrax 212–214, 218–220
Bacillus 220
Bacillus anthracis 212, 217–218
brucellosis 212–213, 218
cholera 213, 218
eastern equine encephalitis virus 219
plague 212–213, 218–219
Powassan virus encephalitis 215
Q fever 212, 218
ricin toxin 212, 216
Rocky Mountain spotted fever 215
severe acute respiratory syndrome (SARS) 212–214
toxins 215–216
tularemia 212–213, 218
viral encephalitis 212, 218
viral hemorrhagic fever 212–213
West Nile virus 214, 216
western equine encephalitis virus 219
zebra poster 215
zoonoses 216
biovigilance 261–271
blood transfusions 269–270
emerging diseases 269–270
frameworks for 263
global models 263–264
hemovigilance 264–269
organ transplantation 270–271
policy 262
US Food and Drug Administration (FDA) 264–265
BioWatch 218
birds, West Nile virus 166
blood and body fluids exposure (BBFE) 254
blood screening 262
blood transfusion 7
adverse events 7
biovigilance 261–264, 269–270
human immunodeficiency virus (HIV) 309
Serious Hazards of Transfusion (SHOT) 264–265
vector-borne diseases 159, 165
bloodborne diseases at mass gatherings 393
bloodstream infections (BSIs) 249, 251, 256–257
Bolivian (Machupo) hemorrhagic fever 144
Border Infectious Disease Surveillance (BIDS) 13, 382
Borrelia afzelii 158
Borrelia burgdorferi 158–160
ticks 164, 167
Borrelia garinii 158
botulism 212, 215, 218
bovine spongiform encephalopathy (BSE) 145, 148
bovine tuberculosis 145
BPDRs see biologic product deviation reports
Brazilian (Sabia) hemorrhagic fever 144
BRFSS see Behavioral Risk Factor Surveillance System
Brighton Collaboration 192
British Columbia Centre for Disease Control 363
Brucella 110, 144, 212
brucellosis 144, 148, 212–213, 218
Brunner, Wendel 612
BSE see bovine spongiform encephalopathy
BSIs see bloodstream infections
BSSs see behavioral surveillance surveys
Bunyaviridae 158
see also individual organisms

672
INDEX

China 96–97, 117, 146, 452, 547
CHIS see California Health Interview Survey
Chlamydia 91, 343–355
incidence 314
International Classification of Diseases 359–360
Chlamydia trachomatis 359–360
Chlamydia psittaci 144, 147, 212
cholera 213, 218, 361, 373
chronic liver disease 297
CHWs see community health workers
CIFOR see Council to Improve Foodborne Outbreak Response
ciprofloxacin resistance 349
civil conflicts 65
CLABIs see central line-associated bloodstream infections
clindamycin resistance 490
clinic-based surveillance, Russia 329–330
Clinical and Laboratory Standards Institute (CLSI) 279, 283
Clostridium botulinum 110, 117, 212, 224
Clostridium difficile 84, 253
Clostridium perfringens 110, 121, 212
CLSI see Clinical and Laboratory Standards Institute
CLUSTAL 497
CLUSTER 505
CMESP see California–Mexico Epidemiological Surveillance Pilot
CMS see Centers for Medicare and Medicaid Services
CNS see central nervous system
cohort studies
South Africa 339–340
vaccine effectiveness 181
communicable disease, complex emergencies 361–373
Communicable Disease Electronic Surveillance System (CDESS) 441
Communicable Disease Global Atlas 507
Communicable Disease Network of Australia 394
communication
case study 618–622
channels 615
credibility 610–611
H1N1 case study 611–613
journalists 614
lay audiences 610
mass media 608–610
outbreak investigations 126–127
presentation 614–615
public health professionals 607–608
INDEX

epidemiology (Continued) participatory 478
Retrovirus Epidemiology Donor Studies (REDS) 269
Salmonella 116
Sentinelles network 422–424
smallpox 33–34
spatial 545, 547, 553, 558
studies 192–193, 423–424
training 637–644
see also European Programme for Intervention Epidemiology Training (EPIET); Field Epidemiology and Laboratory Training Program (FELTP)
vaccine adverse events 192–193
viral hepatitis 298
Web bulletin 422

EPIET see European Programme for Intervention Epidemiology Training
Episcope 502
epsilon toxin 212
equine encephalitis virus 158, 161–163, 167, 219
ESAC see European Surveillance for Antimicrobial Consumption
ESCAPE see European Surveillance of Sexually Transmitted Infections
ESCAIDE see European Scientific Conference on Applied Infectious Disease Epidemiology
Escherichia coli bioterrorism 212
European Union 89, 282, 669
mass gatherings 390
molecular epidemiology 486, 488–489, 494
0157:H7 109–110, 114, 117, 121, 123
pulsed-field gel electrophoresis 8
Shiga toxin 12, 515
USA 135–137, 140
zoonoses 143–149
ESSENCE 477
ESSTI see European Surveillance of Sexually Transmitted Infections
ethics
electronic surveillance Germany 430
mobile technology 433
public health surveillance 596–603
EU-BD see European Invasive Bacterial Diseases Surveillance Network (EU-BD)
EUCAST see European Committee on Antimicrobial Susceptibility Testing
EUIBIS see European Invasive Bacterial Infections
EUPHEM see European Public Health Microbiology Training Programme
EuroCJD 83
EuroHIV 83
Europe 21–23
antimicrobial resistance 274, 281–282
biovigilance 263–264
sexually transmitted diseases (STDs) 344
training 636–644
travel 383
tuberculosis 234–246
vaccine-preventable diseases 174, 178–179
vector-borne diseases 158
viral hepatitis 288–299
European Antimicrobial Resistance Surveillance System (EARSS)
European Antimicrobial Resistance Surveillance System (EARSS) 83, 274, 282, 284
European Centre for Disease Prevention and Control (ECDC) 7, 84–85, 202, 237, 632–633
European Commission on Antimicrobial Susceptibility Testing (EUCAST) 83, 279, 283
European Diphtheria Surveillance Network (EDSN) 83
European Food Safety Authority (EFSA) 7
European Haemovigilance Network (EHN) 264
International Haemovigilance Network
European HIV/AIDS Surveillance Network 83
European Influenza Surveillance Network (EISN) 83, 206
European Invasive Bacterial Diseases Surveillance Network (EU-BD) 83
European Invasive Bacterial Infections (EUIBIS) 83
European Legionnaires’ Disease Surveillance Network (ELDSNET) 83, 89
European Medical Agency 174
European Medicines Agency 188
European Network for Sexually Transmitted Infection (ESSTI) 83, 89
European Network for the Surveillance for Foodborne, Waterborne and Zoonotic Disease (FWD-Net) 83, 89
European Programme for Intervention Epidemiology Training (EPIET) 17, 84, 632–633
European Public Health Microbiology Training Programme (EUPHEM) 17, 632–633
European Remote-Sensing Satellite 547
European Scientific Conference on Applied Infectious Disease Epidemiology (ESCAIDE) 633
European Surveillance for Antimicrobial Consumption (ESAC) 83, 274, 281
ESAC-Net 83
European Surveillance of Sexually Transmitted Infections (ESSTI) 83
European Tuberculous Surveillance Network (EuroTB) 83, 89, 237
European Union (EU) Blood Directive 263
supranational surveillance 81–90
Eurosurveillance 642
EWIDS see Early Warning Infectious Disease Surveillance
EWLGINET 83
Expanded Programme on Immunization (EPI) 177, 192
clusters 177, 181–182
Epi Info 502, 505, 627
Farr, William 25
FDA see US Food and Drug Administration
FELTP see Field Epidemiology and Laboratory Training Program
female sex worker (FSW) 317, 321, 323, 325
FETP see field epidemiology training programs
FF100 see First Few Hundred
FIC see Fogarty International Center
Field Epidemiology and Laboratory Training Program (FELTP) 17, 33, 632–633
filoviruses 144, 212
Finnish Hospital Infection Program (SIRO) 256
First Few Hundred (FF100) system 664

676
INDEX
INDEX

GPA see Global Programme on AIDS
GPHIN see Global Public Health Intelligence Network
GPRD see General Practice Research Database
granuloma
   granuloma inguinale 347, 359
   lymphogranuloma venereum 344, 347, 359
   group B streptococcal (GBS) disease 103
   Active Bacterial Core surveillance (ABCs) 104
   early onset (EO-GBS) 103
   Emerging Infections Program (EIP) 193–194
Guillain–Barré syndrome (GBS) 187, 627
Guinea worm (Dracunculus) community-based surveillance 46–52
   eradication 4, 41–53, 47–49
   parasite 42–43
   Sudan 42, 44
GWR see geographically weighted regression
HAART see highly active antiretroviral therapy
Haemophilus influenzae type b (Hib) 96, 182
   meningitis decline 514
   vaccine distribution 514
   vaccines 176
   unexplained deaths 224
   vaccine 176
   HAI-Net, healthcare-associated infections 83
   HAI-Net, healthcare-associated infections 83
   HAI-Net, healthcare-associated infections 83
   HAND-KISS 255
   hantavirus 144, 146, 148–149
   bioterorism 212
   emerging disease 212
   hantavirus pulmonary syndrome (HPS) 144–145
   unexplained deaths 223
HBV see hepatitis B virus
HCC see hepatocellular carcinoma
HCT/Ps see human cell and tissue products
HCV see hepatitis C virus
   health agencies 589–591
   behavior 449
   confidentiality 589–591
   departments 218–220, 600–601
   globally mobile populations 379
   mobile technology 449, 453
   services 14–15
   surveys 379
   system integration 453
   Health Commerce System (HCS) 439
   Health Information Exchange (HIE) 15
   Health Information Technology for Economic and Clinical Health (HITECH) 15, 409
   Health Insurance Portability and Accountability Act (HIPAA) 405, 587, 590
   Health Protection Agency (HPA) 290–292
   Health Protection Report 11, 290
   Health Resources and Services Administration (HRSA) 305, 308, 313
   healthcare
   sexually transmitted disease (STD) programs 350–351
   syndromic data evaluation 565–577
   Healthcare Effectiveness Data and Information Set (HEDIS) 351
   healthcare-associated infections (HAIs) 248–258
   HAI-Net 83
   Improving Patient Safety in Europe (IPSE) 83
   HealthMap 391, 463
   Healthy Penis campaign 615, 618–622
   HEDIS see Healthcare Effectiveness Data and Information Set
   Held Hohle and Hofmann (HHH) 539–540, 542
   HELICS see Hospitals in Europe Link for Infection Control through Surveillance
   hemolytic uremic syndrome 144
   hemorrhagic fever 144, 373
   with renal syndrome 144
   hemovigilance 262–264
   hepatitis A virus (HAV) 11, 288–292, 296, 299, 382
   vaccine-preventable disease 182–183
   hepatitis B virus (HBV) 288–299, 490, 511, 537, 641
   biovigilance 262, 264
   case numbers 536
   vaccine-preventable disease 176, 178
   hepatitis C virus (HCV) 288–293, 296–299, 365, 380, 577, 641
   biovigilance 262–264
   hepatitis E virus (HVE) 288, 291, 362
   hepatocellular carcinoma (HCC) 297
   HHS Gateway to Data and Statistics 506
   HIB see Haemophilus influenzae type b
   HIE see Health Information Exchange
   highly active antiretroviral therapies (HAART) 304
   HIPAA see Health Insurance Portability and Accountability Act
   HITECH see Health Information Technology for Economic and Clinical Health
   HIV see human immunodeficiency virus
   Hema-Quebec 263
   Hong Kong 3, 203
   hospitals
   foodborne disease records 115
   hepatitis admission data 293
   influenza 206
   Hospitals in Europe Link for Infection Control through Surveillance (HELICS) 235
   host factors for zoonotic diseases 145
   households
   First National Household Health Survey 23
   Guinea worm 42–43, 46, 49
   hepatitis 296–297
   human immunodeficiency virus 321–322, 335–337, 339
   population-based surveillance 100
   South Africa survey 336–339
   vaccines 177, 180–181
   HPA see Health Protection Agency
   HPS see hantavirus pulmonary syndrome (HPS)
   HPV see human papillomavirus
   HSS see human immunodeficiency virus
   HIV sentinel surveillance
   human cell and tissue products (HCT/Ps) 270
   human herpesvirus-8 262
   human immunodeficiency virus (HIV) 6, 304–314, 379–380, 537, 637
   adolescents 306
   adults 306
   behavior 339, 528
   biovigilance 262–264
   cases 305–307, 309, 312, 528–529
   Council of State and Territorial Epidemiologists (CSTE) 309–312, 314, 344
   data 310–313, 522–532
   diagnoses 352, 532
   disease severity 529
   EuroHIV 83
   European HIV/AIDS Surveillance Network 83
   India 317–325
   interferon-γ 531
   interleukin-2 531
INDEX

laboratory reporting 307–308
Michigan 310–311
mortality 529–530
pediatric 306–307
perinatal 306–307, 311
polymerase chain reaction (PCR) 306
prevalence 318, 328, 335–336
record linkage 309
risk factors 309–310
Russia 327–333
security 310
sentinel serosurveillance 322–323
sentinel surveillance (HSS) 319–320, 323–325
T cells 531
testing 313
and tuberculosis 244
unexplained deaths 224
US guidelines 307
human papillomavirus (HPV) 348–350, 359
recombinant vaccine (HPV4) 191, 194–195
human T-lymphotropic virus 262
humans
antimicrobial resistance 132–133, 136
National Antimicrobial Resistance Monitoring System (NARMS) 132
vector-borne diseases 160–162
zoonotic disease reporting 147
immigrants, chest radiograph 384
immunization 15, 25, 190
Expanded Programme on Immunization (EPI) 177, 181–182, 192, 502, 505, 627
US Advisory Committee on Immunization Practices (ACIP) 6, 151
vaccine adverse events 187–188
vaccine-preventable diseases 175, 181–183
Immunization Monitoring Program-Active (IMPACT) 195
immunologic markers of protection, vaccine-preventable diseases (VPD) 178–179
Improving Patient Safety in Europe (IPSE) 83
IMS Health and Relay Health 281
India
data 323–324
human immunodeficiency virus (HIV) 322–323
laboratory testing 324
population-based surveillance 322
vector-borne diseases 158
Indian Remote-Sensing satellites 547
indirect immunofluorescent antibody (IFA) testing 202
Infectious Disease Prevention and Control Branch (IDPC) 462
infectious disease surveillance 4–9
challenges 16–17
collaborations 15–16
deaths 229
emerging technologies 12–15
partners 15–16
population-based 95–107
reporting 9–15
Sentinelles network 422
system (IDSS) 636–637
influenza 182, 537
activity levels 206–207
bioterrorism 213
epidemics 422–423
epidemiology 105, 107, 203, 658–664
European Influenza Surveillance Network (EISN) 83
European Influenza Surveillance Scheme (EISS) 83
FluNet 201–202
FluSurv-NET 206
FluView 202
H1N1 Vaccine Safety Risk Assessment Working Group (VSRAGWG) 193
hospitals 206
laboratory-based surveillance 202–204
mass gatherings 395
morbidity 204, 207
mortality 208–209
pandemic 145, 200–209, 410, 660, 662
seasonal 200–209
sentinel outpatients 204–206
Sentinelles network 422–423
unexplained deaths 225, 230–231
vaccines 193–194, 423
influenza A virus
adverse event following immunization (AEFI) 193–194
case numbers 536
Emerging Infections Program (EIP) 193
H1N1 vaccine 193–194
pandemic 410, 660, 662
Vaccine Adverse Event Reporting System (VAERS) 193–194
vaccine adverse events 193–194
Vaccine Safety Datalink (VSD) 193
influenza B virus 536
influenza-like illness (ILI) 203–205, 207, 389, 394, 474–476, 572
Influenza-like Illness Surveillance Network (ILINet) 204–205, 659, 661–662
injectable polio vaccine (Salk) (IPV) 175
injecting drug users (IDUs) 294, 317–318, 321–327, 332, 381, 641
INoPSU see International Network of Paediatric Surveillance Units
insects
insecticide resistance 164
vectors 163
institutions
infectious disease surveillance 4–9
interferon-γ 531
interleukin-2 531
integral biologic and behavioral assessment (IBBA) 321
international review board (IRB) 598, 602, 638
integrated biologic and behavioral assessment (IBBA) 321
integrated counseling and testing center (ICTC) 319–322
International Classification of Diseases (ICD) 14, 205, 258, 292–293, 351, 472–476 codes 428
International Classification of Diseases (ICD) 9–9
International Emerging Infections Programs 96–97

679
INDEX

International Haemovigilance Network 264
see also European Haemovigilance Network

International Health Regulations (IHR) 5, 383, 385, 458, 653, 669
bioterrorism 65
civil conflicts 65
communications 68
drug resistance 65
emerging diseases 63–64
environmental changes 65
implementation 74
International Health Regulations (1969) 62–63
International Health Regulations (2005) 66–70
International Sanitary Regulations (1951) 63
negotiations 65–66
notifiable diseases 11–12, 70–74
revisions 63–65
severe acute respiratory syndrome 65
trade 64
travel 64
US notifiable vector-borne disease 161
and World Health Organization 62–63, 70–74

International Network of Paediatric Surveillance Units (INoPSU) 179

International Organization for Migration (IOM) 377, 384

International Sanitary Regulations (1951) 63
International Sanitary Regulations (2005) 66–70
International Sanitary Regulations (1951) 63
International Society of Blood Transfusion and Canada’s Transfusion Transmitted Injuries Surveillance System 269
International Society for Disease Surveillance (ISDS) 472, 474, 568
International Society of Travel Medicine (ISTM) 383
invasive bacterial infections 83
invasive pneumococcal disease (IPD) 106
inverse distance weighted (IDW) 552
interpolation 556
IPH see National Institute of Public Health
IPV see injectable polio vaccine
Iraq 362, 370–371
IRB see institutional review board
Ixodes ticks 159
Borrelia burgdorferi 167
isozymal 242
Japanese encephalitis 158–159
journalists 464–466, 608–614
judicial procedures enforcement 591–592

Kaplan–Meier method 531
Kaposi’s sarcoma 520, 526
Klebsiella pneumoniae 275
Kosovar refugees 365, 369
Krankenhaus Infektions Surveillance System (KiSS) 235–257
HAND-KiSS 255
Kriging 556
La Crosse encephalitis virus 158, 167
Laboratory Response Network (LRN) 217–218
laboratory-based surveillance 9–10
antimicrobial resistance 279
bioterrorism 217–218
confirmed cases 116
foodborne diseases 112–114
human immunodeficiency virus (HIV) 307–308
India 324
influenza 202–204
measles 56–58
quality control 280–281
sexually transmitted diseases (STDs) 351–352
unexplained deaths 227–229
viral hepatitis 291–293
zoonotic diseases 149
Landsat 547
Langmuir, Alexander D. 22
large linked database (LLDB) 193
UK General Practice Research Database 193
US Department of Defense’s Defense Medical Surveillance System 193
larval migrants 145
Lassa virus 177, 214, 241, 462
law enforcement for bioterrorism 220
lay audiences, communication 610
LCMV see lymphocytic choriomeningitis virus (LCMV)
legal issues
contact tracing 588–589
public health emergencies 593
USA 583–593
Legionella pneumophila 490
Legionnaires disease 83, 393
Leishmaniasis 158
Leptospira interrogans 144
leptospirosis 144, 146, 148
Listeria monocytogenes 82, 110
LLDB see large linked database
local Moran’s I 555
Logical Observation Identifier Names and Codes (LOINC) 435, 437, 439, 444
LRN see Laboratory Response Network

Lyme disease 145, 148, 159, 441
Connecticut USA 168
ticks 164
US notifiable vector-borne disease 161
vector-borne diseases 167–168
lymphocytic choriomeningitis virus (LCMV) 144
biovigilance 262, 270
lymphogranuloma 359
Lyssavirus 144

Machupo virus 212
mad cow disease see bovine spongiform encephalopathy
malaria 158–159, 362, 365
biovigilance 262
complex emergencies 365
US notifiable vector-borne disease 161
Mapserver 303
Marburg virus 77, 144, 212, 461
Markov chain Monte Carlo methods 542
mass gatherings 388–398
mass media communication 608–610
MBDS see Mekong Basin Disease Surveillance
MDCH see Michigan Department of Community Health
Médecins Sans Frontières (MSF) 372
ME see medical examiner
mean center 554
mean squared prediction error (MSPE) 538
measles 178, 182, 361, 365, 382, 490, 537
Bangladesh, cases 57
cases 55–57, 536
complex emergencies 365
detection 57
eradication 54–60
immune response 57
laboratory methods 56–58
limited resource countries 54–60
mass gatherings 393
molecular epidemiology 58
vaccine 176
measles, mumps, and rubella (MMR) 178–179, 188, 190, 192
and autism 188
vaccine 608
MECIDS see Middle East Consortium on Disease Surveillance
media-based surveillance 15
Medical Algorithms Project, The 505
Medical Event Reporting System for Transfusion Medicine (MERSTM) 266
INDEX

Medical Examiner Infectious Disease Death Surveillance (MED-X) 223–225, 230
medical examiner (ME) 223
Medical Monitoring Project 15, 314
Medisys 463
MedWatch 265
Mekong Basin Disease Surveillance (MBDS) 653
meliodosis 212
men who have sex with men (MSM) 317–325, 347, 352–353
meningitis 362, 365, 393
*Haemophilus influenzae* type b (Hib) 514
meningococcus 536–541
vaccine 176, 192
MERSTM see Medical Event Reporting System for Transfusion Medicine
metillin-resistant *Staphylococcus aureus* (MRSA) 96, 234, 257, 490
antibiotic resistance 276–277
yearly trends 257
mHealth 453–455
Michigan Department of Community Health (MDCH) 311
human immunodeficiency virus (HIV) surveillance program 310
microbial ecology 487–488
Microbial Identification and Typing Databases 490
microcommerce, mobile technology 449
*Microsporum canis* 145
Middle East, vector-borne diseases 158–159
light trap 163
gravid trap 164
mosquitoes
gravid trap 164
light trap 163
vector-borne diseases 158–159
yellow fever 551, 553
MRB see multiresistant bacteria
MRSA see meticillin-resistant *Staphylococcus aureus*
MMR see multiresistant bacteria
MSPE see mean squared prediction error
multilocus sequence typing (MLST) 488–489
multilocus VNTR analysis (MLVA) 488–489, 492, 495
MMWR see Morbidity and Mortality Weekly Report
mobile phone users 448
mobile technology 15, 447–455
animal health surveillance 452
community health workers 453
crowd-sourcing disease outbreaks 452–453
data 450–451
disaster response 452

dissemination of results 451–452
emerging 15
ethics 453
evaluation frameworks 454
gaps in surveillance 449–452
health system integration 453
health-seeking behaviors 449
microcommerce 449
mobile telephones 448
performance/cost ratio 449
personal digital assistants (PDAs) 448
personal ownership 454
sexually transmitted diseases 453
smartphones 449
syndromic surveillance 453
tablet computers 449
technologic convergence 449
workforce capacity 454
Model Public Health Privacy Act 397
Model State Emergency Health Powers Act (MSEHPA) 590
molecular epidemiology 485–498
molecular techniques 114, 298
monitoring antimicrobial resistance 280–281
population-based surveillance 101
supranational surveillance 89
monkeypox 144, 152–155, 153
Moran’s I 550, 552, 554
morbidity influenza 204, 207
South Africa 339
Morbidity and Mortality Weekly Report 11, 29, 407, 506
mortality human immunodeficiency virus (HIV) 529–530
influenza 208–209
South Africa 339
Mortality Reporting System, 122 Cities 208
MIRU-VNTR see Mycobacterium interspersed repetitive unit-variable number tandem repeat
MLST see multilocus sequence typing
MLVA see multilocus VNTR analysis
MMR see measles, mumps, and rubella
MMWR see Morbidity and Mortality Weekly Report
mobile phone users 448
mobile technology 15, 447–455
animal health surveillance 452
community health workers 453
crowd-sourcing disease outbreaks 452–453
data 450–451
disaster response 452
multimedia messaging service (MMS) 448
multiresistant bacteria (MRB) 234
mumps 182
vaccine 176
*Mycobacterium* 235–243, 490
*Mycobacterium* interspersed repetitive unit-variable number tandem repeat (MIRU-VNTR) 243
Naegleria fowleri, unexplained deaths 226
National AIDS Control Organization (NACO) 317, 321–324
National Ambulatory Medical Care Survey (NAMCS) 281, 350
National Antimicrobial Resistance Monitoring System (NARMS) 131–132
National Electronic Telecommunications Systems for Surveillance (NETSS) 405, 407
National Family Health Survey (NFHS) 321–322
National Health Interview Survey 379
National Healthcare Safety Network (NHSN) 249, 254, 256, 266, 269
National Healthcare Surveillance Network (NHSN) 281
National Hospital Discharge Survey 350
(NHDS) 350
National Hospital Ambulatory Medical Care Survey Emergency Department (NHAMCS-ED) 350
Outpatient Clinic Discharge (NHAMCS-OPD) 350
National Institute of Health & Family Welfare (NIHFW) 324
National Institute of Public Health (NIPH) 369–370
National Institute for Public Health Surveillance [Institut de Veille Sanitaire (InVs)] 254
National Institutes of Health (NIH) 264
National Nosocomial Infections Surveillance (NNIS) 249, 253, 256
National Notifiable Disease Surveillance System (NNDSS) 11, 209, 404, 407
National Public Health Information Coalition 608
national regulatory authorities (NRAs) 188
INDEX

National Respiratory and Enteric Virus Surveillance System (NREVSS) 203, 506
national sentinel site surveillance (NSSS) 372
National Surveillance of Infections in Hospitals (NIH) 256
National Survey of Family Growth (NSFG) 349
National Vital Statistics System (NVSS) 208
NATO see North Atlantic Treaty Organization
NDD see Notifiable Diseases Database
NEDSS see National Electronic Disease Surveillance System

Neisseria gonorrhoeae 349, 360
Neisseria meningitidis 96, 224–226
nematodes 158
see also individual organisms
NetDraw 503
Netherlands, The 203, 263, 291–295
NETSS see National Electronic Telecommunications Systems for Surveillance
New Immigrant Survey (NIS) 382
New Mexico Office of the Medical Investigator (NM OMI) 224
New York
City Bioterrorism Response Laboratory 218
electronic clinical laboratory reporting 439–442
State Department of Health (NYSDOH) 639
State ECLRS 439
State International Training Program 637–639
news distribution 465
NHFS see National Family Health Survey
NGOs see non-governmental organizations
NHIS see US National Health Interview Survey
NHSN see National Health Care Safety Network
NIH see National Institutes of Health
NIHFW see National Institute of Health & Family Welfare
Nipah virus 146, 212
NIS see New Immigrant Survey
NNDSS see National Notifiable Disease Surveillance System
NNIS see National Nosocomial Infections Surveillance
non-governmental organizations (NGOs) 317–325, 362, 462–463
norovirus 111, 490, 516

North Atlantic Treaty Organization (NATO) 362
Nosocomial Infection Early Warning, Investigation and Surveillance Network 254
Nosocomial Infection National Surveillance System (NINSS) 256
notifiable diseases
foodborne diseases 113
International Health Regulations 11–12
Notifiable Diseases Database (NDD) 394
NRAs see national regulatory authorities
NREUSS see National Respiratory and Enteric Virus Surveillance System
NSFG see National Survey of Family Growth
NSIH see National Surveillance of Infections in Hospitals
NSSS see national sentinel site surveillance
NVSS see National Vital Statistics System
NYSDOH see New York State Department of Health

oculorespiratory syndrome 192
Office of Public Health (OPH) 599
OLS see ordinary least squares
Olympic Games
Beijing 391
Sydney 393
onchocerciasis 158
Online Tuberculosis Information System 507
ophoritis 359
Open Source Epidemiologic Statistics for Public Health (OpenEpi) 502, 505
operational taxonomic unit (OTU) 496
OPH see Office of Public Health
oral polio vaccine (OPV) 175, 188
paralytic poliomyelitis 192
ordinary least squares (OLS) 550–551, 554
Oregon system, electronic clinical laboratory reporting 442–444
Organ Procurement and Transplantation Network (OPTN) 270
organ transplantation
adverse events 7
biovigilance 270–271
human immunodeficiency virus (HIV) 7
orthopoxvirus 144
OTU see operational taxonomic unit
PAHO see Pan American Health Organization
Pan American Health Organization (PAHO) 372

pandemic influenza 191, 200–209, 657–666
epidemiology 105, 107
population-based surveillance 105–107
preparedness planning USA 638
and seasonal influenza 657–665
parametrists 359
parasitic infections, incidence 514–515
participatory epidemiology 478
parvovirus B19 262
passive surveillance, antimicrobial resistance 279
pathogen detection 13
pathogen-specific surveillance, foodborne disease outbreaks 122–125
pattern detection 506
PDAs see personal digital assistants
pediatric influenza-associated deaths 223
pelvic inflammatory disease (PID) 347, 355
International Classification of Diseases 359
National Ambulatory Medical Care Survey (NAMCS) 350
pelvic peritonitis, International Classification of Diseases 359
PEPI see Computer Programs for Epidemiologic Analyses
performance/cost ratio, mobile technology 449
Peromyscus 149
personal digital assistants (PDAs) 448
mobile technology 448
pertussis
acellular (aP) 175
mass gatherings 393
polymerase chain reaction (PCR) 180
vaccines 175
whole cell (wP) 175
PFGE see pulsed-field gel electrophoresis
PHAC see Public Health Agency of Canada
PHEIC see public health emergencies of international concern
PHI see protected health information
phylogenetics 486
and molecular epidemiology 487
PID see pelvic inflammatory disease
plague 144–146, 148, 159, 162
bioterrorism 212–213, 218–219
pneumonic 161
US notifiable vector-borne disease 161
Plasma Protein Therapeutics Association 264
Plasmodium 158
INDEX

pneumococcus 182
polyaccharide conjugated vaccines 105, 176
population-based surveillance 105
Pneumocystis pneumonia 520
pneumonic plague 161
Poisson regression model 539–540
poliomyelitis 178
vaccines 175
genes 175
polymerase chain reaction (PCR) 98, 228, 298, 511, 653
Campylobacter 134
human immunodeficiency virus (HIV) 306
pertussis 180
real-time 218, 653
reverse transcriptase 202, 207
Tuberculosis 235
population-based surveillance 95–107
antimicrobial resistance 276–277
emerging infections 95–96
group B streptococcal disease 103–105
India 322
influenza 105–107
sexually transmitted diseases (STDs) 350
Thailand 105
populations, sexually transmitted diseases (STDs) 352–353
positive predictive value (PPV) 571
Powassan virus 161
ArboNet 167
encephalitis 215, 226
practitioners and the Sentinelles network 420–421
prevalence of sexually transmitted diseases (STDs) 348
PREventie ZIEkenhuizeninfecties door surveillance (PREZIES) 256
prion diseases 145, 148
program development for vaccine-preventable disease (VPD) 182–183
ProMED 427, 463
ProMED-mail 391, 394
protected health information (PHI) 591
protozoa 258
see also individual species
Pseudomonas aeruginosa 275
pseudomembranous colitis 144–145, 148, 212
public health agencies 230–231
communication 607–608
electronic clinical laboratory reporting 434–445
emergencies of international concern (PHEIC) 466–467
emergencies and legal authority 593
ethics 596–603
intelligence 294–298
law 583–589
research 598–599
training 17
unexplained deaths 230–231
vaccine adverse events 187–195
vector-borne disease burden 160
Public Health Agency of Canada (PHAC) 462–464
Public Health Service (PHS) Interagency Working Group for Blood Safety and Availability 270
public–private partnerships 649–655
business practices 651
government procurement 650–651
international disease detection 654
policy 655
regional networks 653
Vaccine Adverse Events Reporting System (VAERS) 652–653
tuberculosis 585–592
PulseNet 8, 149, 486, 490, 495
Q fever 144, 147–148, 212, 218
quadrivalent human papillomavirus vaccine (HPV4) 194–195
quality-adjusted life years (QALYs) 527
Quantum Geographic Information System (QGIS) 503, 505
quarantine 23, 213
influenza 662, 664
refugees 383
tuberculosis 585–592
R (program language) 502–503, 505, 507
rabies 144–152, 270
RADARSAT 547
RAISING see Réseau d’Alerte, d’Investigation et de Surveillance des Infections Nosocomiales ranked probability score (RPS) 540
rapid plasma reagin (RPR) 346
rapid screening method, vaccine effectiveness 180–181
rash 373
RDS see respondent-driven sampling
real-time epidemiologic data, Sentinelles network 419–420
Real-time Outbreak Detection System (RODS) 473
real-time polymerase chain reaction (PCR) 218, 653
REDs see Retrovirus Epidemiology Donor Studies
refugees
complex emergencies 369–370
immigrant health screenings 383–384
regional networks, public–private partnerships 653
reporting systems, vaccine adverse events 190–192
reproductive health clinics offering antenatal services [ANC(R)] 323
resource allocation 8
respondent-driven sampling (RDS) 381
response protocols, syndromic surveillance 478
restriction length polymorphism (RFLP) 488
retail meat
isolates, antimicrobial resistance 133
monitoring, National Antimicrobial Resistance Monitoring System (NARMS) 132
sampling evolution, antimicrobial resistance 136–137
Retrovirus Epidemiology Donor Studies (REDs) 269
Allogeneic Donor and Recipient (RADAR) 269
reverse transcription polymerase chain reaction (RT-PCR) 202–203
RFLP see restriction length polymorphism (RFLP)
ricin toxin 212, 216
Ricinus communis 212
Rickettsia prowazekii 212
Rickettsia rickettsii 158, 231–232
Rickettsia typhi 158
Rift Valley fever 158, 161
ringworm see dermatophytosis
Ripley’s K-function 552, 555
risk
Cryptosporidium 393
factors 15, 293, 309–310
human immunodeficiency virus (HIV) 309–310
viral hepatitis 293
Rods see Real-time Outbreak Detection System

683
INDEX

rotavirus 182, 188
diarrhea, vaccines 176
vaccine 176, 191, 193
round worms see nematodes
routine monitoring, data analysis 511
KPR see rapid plasma reagin
Réseau d'Alerte, d'Investigation et de
Surveillance des Infections Nosocomiales (RAISIN) 254, 256
RT-PCR see reverse transcription
rubella 182, 382
Bangladesh, case-based surveillance 57
mass gatherings 393
rubella 182, 382
Bangladesh, case-based surveillance 57
mass gatherings 393
Rubella World Cup (2003) 393, 395
Russia 328–333
Ryan White HIV/AIDS Program (RWHAP) 305, 309–310, 313
Sabin vaccine 175
SACS see State AIDS Control Societies;
state-based implementation arms of
NACO
St. Louis encephalitis virus 158, 161–162
ArboNet 167
Salmonella 4–5, 12, 110, 114, 116–117
antimicrobial resistance 130, 137–138
bioterrorism 212
foodborne disease outbreaks 121,
124–125
Salmonella enterica 123
ser. Enteritidis 82
ser. Newport 139–140
ser. Oranienburg 89
ser. Typhi 110, 133, 135–136
ser. Typhimurium 211, 492, 496
salmonellosis 144, 148
salpingitis 359
SARCMA see seasonal autoregressive
integrated moving average
SARS see severe acute respiratory syndrome
SAS see single nucleotide polymorphism
software 502
data mining 458
free 503–506
Soundex 523
South Africa
antenatal 335–336
cohort studies 339–340
household surveys 336–339
morbidity 339
mortality 339
South African National AIDS Council 340
spatial analysis
Cryptococcus gattii 559–560
generalized information system (GIS)
358–362
spatial concepts, disease ecology 548–553
spatial modeling 560–562
spline interpolation 556
spontaneous reporting systems (SRSs)
190–192
spotting fever rickettsiosis 161
SSP 502
SRGs see syphilis reactor grids

684
SSIs see surgical site infections
SuN see STD Surveillance Network
standard deviational ellipse 554
standard distance 554
Staphylococcus aureus 110, 121
central line-associated bloodstream infections (CLABSiS) 257
inducible clindamycin resistance 490
meticillin-resistant (MRSA) 257, 285
starhs see serologic testing algorithm for recent HIV seroconversion
StatA 502–503
State AIDS Control Societies (SACS) 317, 321, 324
State and Territorial Epidemiologist’s Report 207
state-based implementation arms of NACO (SACS) 323
statistical modeling 535–542
spatiotemporal modeling 541–542
temporal modeling 537–541
Stata 502–503
STI see sexually transmitted infection
Streptococcus 96, 110
Streptococcus pneumoniae 95
European Antimicrobial Resistance Surveillance System (EARSS) 284
penicillin resistance 275, 278, 280, 282
unexplained deaths 224–225, 231
Streptococcus pyogenes 95
inducible clindamycin resistance 490
M-typing, emm sequencing 490
unexplained deaths 224–225
Strongyloides 145
STSs see serologic tests for syphilis
Sudan, Darfur 371–372
Guinea worm disease 41–53
surgical site infections (SSIs) 248, 250, 254
surveillance
active 12
animal reservoirs 13
computer algorithms 15
cross-border 13–14
data 14–15
emerging mobile technologies 15
environmental pathogens 14
epidemiology 17
health services 14–15
media-based 15
population-based surveillance 98–100
public health training 18
risk factors 15
sentinel 12–13
strategies 148–155
supranational 85–90
syndromic see syndromic systems see surveillance systems training 636–643
vectors 13–14
see also individual topics
Surveillance Standards for Antimicrobial Resistance 275
surveillance systems 17, 21–30
pandemic influenza 659–663
public health practice 27–30
Survey of Migration at the Northern Border of Mexico [La Encuesta sobre Migración en la Frontera de Mexico (EMIF)] 380–381
SurvNet 429
SurvStat 428–429, 431
SurvStat@RKI 507
susceptibility to antimicrobial resistance 133–136, 138
susceptible–infected–removed (SIR) model 537, 539, 541–542
swine influenza 144
syndromic surveillance 470–480
agents of bioterrorism 216–217
anthrax 565, 574–576
basic steps in 472–473
challenges in 474–477
contact tracing 566
Cryptosporidium 471
electronic health records 478–479
foodborne diseases 112
history of 471–472
mass gatherings 391–392
mobile technology 453
participatory epidemiology 478
response protocols 478
seasonal influenza 216, 472, 566
sexually transmitted diseases (STDs) 347–348
syndromic systems 565–577
syphilis 346, 352, 618–619
biovigilance 262
Current Procedural Terminology-4 (CPT-4) codes 360
Healthy Penis campaign 619–621
International Classification of Diseases 359
men who have sex with men 347
reactor grid (SRG) 346
Systematized Nomenclature of Medicine (SNOMED) 435, 437, 439, 444
t cells 178
tuberculosis (TB) 234–246, 319–320, 362, 377, 379
bacteriological 213
biovigilance 262, 270
Directly Observed Treatment Short Course (DOTS) 235, 241
European Centre for Disease Prevention and Control (ECDC) 237
European Tuberculosis Surveillance Network 83
EuroTB 83, 237
and human immunodeficiency virus (HIV) 244
mass gatherings 393
skin testing (TST) 527
vaccines 175
WHO Directly Observed Treatment Short Course (DOTS) 235
685
INDEX

tularemia 144–146, 148, 159, 565
bioterrorism 212–213, 218
US notifiable vector-borne disease 161
typhoid fever 373
typhus fever 212

UAT see unlinked anonymous testing
UCInet 503
UK General Practice Research Database, large linked database (LLDB) 193
UN see United Nations
UNAIDS see United Nations Program on HIV/AIDS
UNEX see Unexplained Deaths Project
unexplained deaths 223–232
biosafety 230
Clostridium botulinum 224
Emerging Infections Program (EIP) 224
Haemophilus influenzae 224
hantavirus pulmonary syndrome 223
human immunodeficiency virus (HIV) 224
influenza 225, 230–231
Medical Examiner Infectious Disease Death Surveillance 224
Minnesota Department of Health (MDH) 225–226, 231–232
Neisseria fowleri 226
Neisseria meningitidis 224–226
pediatric influenza-associated deaths 223
Powassan virus 226
public health agencies 230–231
Rickettsia rickettsii 231–232
Rocky Mountain spotted fever 232
specimen collection 227–228
Streptococcus pneumoniae 224–225, 231
Streptococcus pyogenes 224–225
West Nile virus encephalitis 226

UNOS see United Network for Organ Sharing
unlinked anonymous testing (UAT) 601–602
Vaccine Adverse Event Reporting System (VAERS) 7, 16, 190–192, 195
vaccine adverse events (VAE) 194–195
vaccine-preventable diseases (VPD) 174–184, 188

disease morbidity 179–180
EUVAC-Net 83
immunologic markers of protection 178–179
program development 182–183
vaccines 174–178, 180–182

vaccines 6–7, 180–182, 653–654
Cutter incident 189
diphtheria 175
distribution 514
Haemophilus influenzae type b (Hib) 176, 514
hepatitis B 176
measles 176
meningococcal infection 176
mumps 176
pertussis 175
pneumococcal invasive disease 176
poliomyelitis 175
probe method 182
public–private partnerships 653–654
rotavirus diarrhea 176
rubella 176
safety 7, 189–190
tetanus 175
tuberculosis 175
VAE see vaccine adverse event
VAERS see Vaccine Adverse Event Reporting System
vancomycin
vancomycin-intermediate
Staphylococcus aureus 279
vancomycin-resistant Enterococcus faecium 278
vancomycin-resistant enterococci (VRE) 490, 492
vancomycin-resistant Staphylococcus aureus (VRSA) 275–276, 279–280
variable number tandem repeats (VNTRs) 488
multilocus VNTR analysis (MLVA) 488
varicella 182
variola major 212
vector-borne diseases 157–169
ArboNet 165–167
dengue fever 168–169
Lyme disease 167–168
West Nile virus 165–167
vectors 13–14
Venezuelan equine encephalitis 158–159, 162

MedWatch 265
biovigilance 264–265, 270
Adverse Event Reporting System 265
biosurveillance 264–265, 270
MedWatch 265
US Influenza Sentinel Provider Surveillance Network 216
US national context electronic clinical laboratory reporting 434–435
US National Health Interview Survey (NHIS) 378
US notifiable vector-borne diseases 161
US novel swine-origin influenza A (H1N1) virus vaccine 193
US Postal Service 218
US Public Health Service (PHS)
biovigilance Working Group 266
USCSIS see US Customs and Immigration Services
Usutu virus 167
uterine inflammatory disease 359
UTIs see urinary tract infections
vaccination 6–7
vaccine-preventable diseases (VPD) 174–177
Vaccine Adverse Event Reporting System (VAERS) 7, 16, 190–192, 195
causality 191
influenza A vaccine 193–194
public–private partnerships 652–653
vaccine adverse events (VAE) 188
unlinked anonymous testing (UAT) 601–602

Vaccine Safety Datalink (VSD) 192–193, 195
influenza A (H1N1) 2009 vaccine 193
vaccine-preventable diseases (VPD) 174–184, 188
disease morbidity 179–180
EUVAC-Net 83
immunologic markers of protection 178–179
program development 182–183
vaccines 174–178, 180–182

vaccines 6–7, 180–182, 653–654
Cutter incident 189
diphtheria 175
distribution 514
Haemophilus influenzae type b (Hib) 176, 514
hepatitis B 176
measles 176
meningococcal infection 176
mumps 176
pertussis 175
pneumococcal invasive disease 176
poliomyelitis 175
probe method 182
public–private partnerships 653–654
rotavirus diarrhea 176
rubella 176
safety 7, 189–190
tetanus 175
tuberculosis 175
VAE see vaccine adverse event
VAERS see Vaccine Adverse Event Reporting System
vancomycin
vancomycin-intermediate
Staphylococcus aureus 279
vancomycin-resistant Enterococcus faecium 278
vancomycin-resistant enterococci (VRE) 490, 492
vancomycin-resistant Staphylococcus aureus (VRSA) 275–276, 279–280
variable number tandem repeats (VNTRs) 488
multilocus VNTR analysis (MLVA) 488
varicella 182
variola major 212
vector-borne diseases 157–169
ArboNet 165–167
dengue fever 168–169
Lyme disease 167–168
West Nile virus 165–167
vectors 13–14
Venezuelan equine encephalitis 158–159, 162

MedWatch 265
biovigilance 264–265, 270
Adverse Event Reporting System 265
biosurveillance 264–265, 270
MedWatch 265
US Influenza Sentinel Provider Surveillance Network 216
US national context electronic clinical laboratory reporting 434–435
US National Health Interview Survey (NHIS) 378
US notifiable vector-borne diseases 161
US novel swine-origin influenza A (H1N1) virus vaccine 193
US Postal Service 218
US Public Health Service (PHS)
biovigilance Working Group 266
USCSIS see US Customs and Immigration Services
Usutu virus 167
uterine inflammatory disease 359
UTIs see urinary tract infections
vaccination 6–7
vaccine-preventable diseases (VPD) 174–177
Vaccine Adverse Event Reporting System (VAERS) 7, 16, 190–192, 195
causality 191
influenza A vaccine 193–194
public–private partnerships 652–653
vaccine adverse events (VAE) 188
unlinked anonymous testing (UAT) 601–602

Vaccine Safety Datalink (VSD) 192–193, 195
influenza A (H1N1) 2009 vaccine 193
vaccine-preventable diseases (VPD) 174–184, 188
disease morbidity 179–180
EUVAC-Net 83
immunologic markers of protection 178–179
program development 182–183
vaccines 174–178, 180–182

vaccines 6–7, 180–182, 653–654
Cutter incident 189
diphtheria 175
distribution 514
Haemophilus influenzae type b (Hib) 176, 514
hepatitis B 176
measles 176
meningococcal infection 176
mumps 176
pertussis 175
pneumococcal invasive disease 176
poliomyelitis 175
probe method 182
public–private partnerships 653–654
rotavirus diarrhea 176
rubella 176
safety 7, 189–190
tetanus 175
tuberculosis 175
VAE see vaccine adverse event
VAERS see Vaccine Adverse Event Reporting System
vancomycin
vancomycin-intermediate
Staphylococcus aureus 279
vancomycin-resistant Enterococcus faecium 278
vancomycin-resistant enterococci (VRE) 490, 492
vancomycin-resistant Staphylococcus aureus (VRSA) 275–276, 279–280
variable number tandem repeats (VNTRs) 488
multilocus VNTR analysis (MLVA) 488
varicella 182
variola major 212
vector-borne diseases 157–169
ArboNet 165–167
dengue fever 168–169
Lyme disease 167–168
West Nile virus 165–167
vectors 13–14
Venezuelan equine encephalitis 158–159, 162