

INDEX



A

abbreviated new drug application (ANDA), 22

abbreviations for medication dosage forms, 98, 264

acronyms. *See* alphabet soup

ADME (absorption, distribution, metabolism, and excretion), 84

administration technique error, 156

admixtures, infusions of, 34, 39, 230

adverse drug reaction, 36, 157

advice-giving response, 272

air embolus, 300

allergic reaction, 300

allergy and disease state information, 13

alphabet soup

- aseptic technique, sterile compounding, and IV admixture programs, 150–151, 299
- billing and reimbursement, 195–196, 330–331
- medication dosage forms and routes of administration, 98, 264
- medication safety, 163, 308
- pharmaceutical supply chain management, 186, 323
- pharmacy and pharmacy technician, 13, 216
- pharmacy informatics and technology, 173–174, 316
- pharmacy law, regulations, and standards, 25, 222–223
- processing medications orders and prescriptions, 122, 279

Alzheimer's disease, 63, 70, 76

ambulatory patient, 37

ambulatory pharmacy, 12, 28, 29

amphotericin B, 33–34, 37

ampules, 146

angiotensin-converting enzyme (ACE) inhibitors, 71

antiepileptic drugs, 70, 73

antihistamines, 72

antithyroid drugs, 72

aseptic technique, sterile compounding, and IV admixture programs, 143–153, 297–304

ASHP/ACPE-accredited technician training program, 14, 215, 216

ASHP Technical Assistance Bulletin on Institutional Use of Controlled Substances, 323–334

ASHP Technical Assistance Bulletin on Single-Unit and Unit-Dose Packages of Drugs, 293

attention deficit hyperactivity disorder (ADHD), 71, 74

automated compounding, 301–302

automated counting devices, 31

automated dispensing devices, 48, 118

automated dispensing model, decentralized, 280

average wholesale price (AWP), 190

B

barcode medication administration (BCMA), 171

beads, 264

benchmark prices, 190

beyond-use-dates (BUDs), 134, 135, 293

biennial inventory, 18

billing and reimbursement, 189–198, 329–333

bioavailability, 84, 85

biological products, 23

biopharmaceutics, 83

biotech drugs, 38

bleeding, IV therapy and, 300

body mass index (BMI), 286

body surface area (BSA), 286

bronchodilator, 71

C

calcium channel blockers, 71

calculation errors, 311–312

caplets, 93

capsules, 93

captopril, 86

catheters, 34, 36, 228

ceftriaxone, 33, 228

celecoxib (Celebrex), 74

cephalosporin antibiotics, 33

chain pharmacy, 28

chemotherapy, 75

child-resistant packaging, 24

ciprofloxacin, 86

Class I recall, 182, 321

Class II recall, 182, 321

Class III recall, 182, 321

clinical decision support rights, 316

clinic pharmacy, 29

clonazepam (Klonopin), 32, 227

color-coding drug product packaging, 159–160

Combat Methamphetamine Epidemic Act, 21, 23

communication and teamwork, 103–113, 269–273

community, ambulatory care, and home care pharmacy practice, 27–41, 227–231

community pharmacy, 28, 29, 223

compliance error, 156

compounded prescriptions, 13, 215

compounding

- automated, 301–302
- nonsterile, 133
- sterile, 47, 143
- total parenteral nutrition, 301–302

computerized physician order entry (CPOE), 47, 171

continuing education (CE), 202, 337–338

continuing professional development (CPD), 337–338

controlled substances

- ordering, receiving, and storing, 323–324
- prescriptions for, 20–21, 23, 25
- storage and documentation of, 46–47

corticosteroids, 71–72, 73

creams, 93–94

credentialing, 15, 217

crossword puzzle

- aseptic technique, sterile compounding, and IV admixture programs, 152–153, 304
- billing and reimbursement, 197–198, 333
- communication and teamwork, 112–113, 273
- community, ambulatory care, and

home care pharmacy practice, 40–41, 231
 hospital and specialty pharmacy practice, 52–53, 238
 human body, 66–67, 244
 learning strategies, 6, 212
 medication dosage forms and routes of administration, 98–99, 265
 nonsterile compounding and repackaging, 140–141
 pharmacy and pharmacy technician, 15–16, 217
 pharmacy calculations, 130–131, 287
 pharmacy informatics and technology, 175–177, 318
 pharmacy technicians in the real world, 205–206, 339
 cytotoxic agents, 146

D

decentralized pharmacies, 44–45
 diphenoxylate, 24, 222
 disease state management, 32, 37
 dispensing fee, 36
 diuretics, 71
 dosage form error, 156
 dosing information, 13
 drug classifications and pharmacologic actions, 69–82, 247–252
 drug distribution service, 46
 Drug Enforcement Administration (DEA), 18, 221, 324
 drug excretion, 85
 drug shortages, 46
 drug storage, 46
 drug utilization review (DUR), 37

E

electronic health record (EHR), 170, 317
 emotional intelligence, 5, 211
 emulsions, 94
 enteral nutrition, 37
 ephedrine, 221
 e-prescribing, 171
 erythropoietin, 38

ethical principles, 19
 ExCPT exam, 12
 expectorants, 72
 extended-release products, 263–264
 extravasation, 300
 extrinsic motivation, 5, 6, 211, 212

F

failure and mode effects analysis (FMEA), 310–311
 filgrastim, 38
 fill in the blank
 aseptic technique, sterile compounding, and IV admixture programs, 149–150, 299
 billing and reimbursement, 194–195, 330
 biopharmaceutics, pharmacokinetics, pharmacodynamics, 89, 256
 communication and teamwork, 111, 271
 community, ambulatory care, and home care pharmacy practice, 39, 230
 drug classifications and pharmacologic actions, 80–82, 251
 hospital and specialty pharmacy practice, 51, 237
 human body, 65, 243
 medication dosage forms and routes of administration, 97, 262
 medication safety, 165, 309
 nonsterile compounding and repackaging, 140
 pharmaceutical supply chain management, 185–186, 323
 pharmacy technicians in the real world, 204, 337
 processing medications orders and prescriptions, 121, 279
 first-pass metabolism, 84, 85
 fixed mindset, 5, 6, 211, 212
 fluoxetine, 73
 Food and Drug Administration (FDA), 18, 221
 forged prescriptions, 25, 118, 223

G

gels, 94
 generic drugs, 22, 24, 36, 221–222
 glycerin, 92–93
 grit, 6, 212
 growth mindset, 5, 6, 211, 212

H

hazardous drugs (HDs), 302
 receiving and storing, 324–325
 spills of, 303
 healthcare institution management, 44
 Health Insurance Portability and Accountability Act (HIPAA), 18, 29, 37, 221
 health screenings, 32
 heart contractions/heart rhythms, 243
 high-alert medication, 158, 161
 histamine-2 receptor antagonists (H₂ antagonists), 72
 home care pharmacy, 30
 home infusion services, 33–34, 37
 horizontal LAFW, 302
 hospital and specialty pharmacy practice, 43–53, 235–238
 hospital clinical pharmacy services, 45
 hospital formulary, 46, 49, 180
 human body, structure and function, 57–67, 241–244
 hydrocodone, 24
 hyperlipidemia, 71

I

ideal body weight (IBW), 286
 immunizations, 32–33
 incompatibilities, 300
 infection, IV therapy and, 300
 infusions of admixtures, 34, 39, 230
 infusion systems, 35–36
 institutional patient assistance programs (IPAPs), 332
 institutional pharmacy, 12
 insulin, 72, 74
 internet research
 pharmacy law, regulations, and standards, 25, 223

pharmacy technician, 14, 217
 intrinsic motivation, 5, 6, 211, 212
 inventory, biennial, 18
 inventory management and control,
 180, 182, 280
 isotretinoin, 32, 37, 227
 IV admixture programs, 143, 144
 IV therapy risks, 300–301

J

job application/hiring process, 202,
 203
 judgmental response, 271–272

K

kidneys, 243

L

labeling
 home care medication, 34
 IV products, 146
 medication, 51, 237
 prescription, 31, 117, 118, 277
 laminar airflow workbench (LAFW),
 144, 145, 302
 layers, of extended-release form, 264
 learning strategies, 3–6, 211–212
 “legend” drugs, 23, 29, 37, 222
 levigation agents, 135
 liquid medications, 263
 lorazepam, 24
 Low-Income Subsidy (LIS), 191
 lozenges, 93, 136

M

mail order pharmacy, 28–29
 managed care pharmacy, 28
 matching
 aseptic technique, sterile
 compounding, and IV admixture
 programs, 148, 297
 billing and reimbursement, 193,
 329
 biopharmaceutics,
 pharmacokinetics,

pharmacodynamics, 87–88, 255
 communication and teamwork, 109,
 270
 community, ambulatory care, and
 home care pharmacy practice,
 35–36, 228
 drug classifications and
 pharmacologic actions, 75–77,
 248–249
 human body, 61–62, 241–242
 learning strategies, 5, 211
 medication dosage forms and
 routes of administration, 95–96,
 261–262
 medication safety, 162–163, 308
 nonsterile compounding and
 repackaging, 137–138
 pharmaceutical supply chain
 management, 182–183, 321
 pharmacy and pharmacy
 technician, 12–13, 215
 pharmacy informatics and
 technology, 172, 315
 pharmacy law, regulations, and
 standards, 23, 222
 processing medications orders and
 prescriptions, 118–119, 277
 matrix, 264
 “meaningful use” program, 170
 MedGuides, 22, 70
 Medicaid patient’s medication profile,
 29
 Medicare part B, 191
 Medicare part D, 192, 193
 medication carts, 48
 medication dosage forms and routes
 of administration, 91–99, 261–265
 medication error rate, 156
 medication safety, 155–165, 307–312
 medication therapy management
 (MTM), 39
 medication-use evaluation (MUE), 48,
 50, 51, 237
 meperidine, 24
 metformin (Glucophage), 74
 methadone, 24
 methylphenidate, 24, 221
 monitoring error, 156
 mortar and pestle, 293

multiple choice
 aseptic technique, sterile
 compounding, and IV admixture
 programs, 144–147, 297
 billing and reimbursement, 190–
 193, 329
 biopharmaceutics,
 pharmacokinetics,
 pharmacodynamics, 84–86, 255
 communication and teamwork,
 104–109, 269–270
 community, ambulatory care, and
 home care pharmacy practice,
 28–34, 227–228
 drug classifications and
 pharmacologic actions, 70–75,
 247
 hospital and specialty pharmacy
 practice, 44–49, 235–238
 human body, 58–61, 241
 learning strategies, 4, 211
 medication dosage forms and
 routes of administration, 92–95,
 261
 medication safety, 156–161, 307
 nonsterile compounding and
 repackaging, 134–136
 pharmaceutical supply chain
 management, 180–182, 321
 pharmacy and pharmacy
 technician, 10–12, 215
 pharmacy calculations, 124–125,
 283
 pharmacy informatics and
 technology, 170–172, 315
 pharmacy law, regulations, and
 standards, 18–23, 221–222
 pharmacy technicians in the real
 world, 202–203, 337
 processing medications orders and
 prescriptions, 116–118, 277
 multiple sclerosis (MS), 70
 muscle relaxers, 72

N

National Association of Boards of
 Pharmacy (NABP), 18, 24, 222
 National drug code (NDC), 31, 180

neuropathic pain, 70–71, 73
 nitrates, 71
 nonsterile compounding and
 repackaging, 133–142, 291–294
 nonsteroidal anti-inflammatory drugs
 (NSAIDs), 72
 nucleoside reverse transcriptase
 inhibitors, 75

O

OBRA-90, 30
 opioids, 74
 oral Factor Xa inhibitor, 75
 oral solutions, 92
Orange Book, 22, 24
 ordering
 community, ambulatory care, and
 home care pharmacy practice,
 38, 230
 hospital and specialty pharmacy
 practice, 49, 236
 human body, 63, 242
 nonsterile compounding and
 repackaging, 137
 pharmacy calculations, 125–126,
 283
 processing medications orders and
 prescriptions, 119, 278
 osmotic pump, 264
 over-the-counter (OTC) drugs, 29

P

pain, assessment of, 72
 Parkinson's disease treatment, 70, 73
 particulate matter, 300
 patient assistance programs (PAPs),
 332
 patient counseling, 19
 patient package inserts, 22, 221
 patient privacy, 18, 24, 25, 29, 37, 221,
 223
 patient profile, 280
 penicillin antibiotics, 33
 pharmaceutical supply chain
 management, 179–187, 321–325
 pharmacodynamics, 83
 pharmacokinetics, 84

pharmacy, 11–16, 215–217
 ambulatory, 12, 28, 29
 chain, 28
 clinic, 29
 community, 28, 29, 223
 decentralized, 44–45
 home care, 30
 institutional, 12
 mail order, 28–29
 managed care, 28
 telepharmacy, 172
 pharmacy benefit managers (PBMs),
 191–192
 pharmacy calculations, 123–131,
 283–287
 pharmacy informatics and technology,
 169–175, 315–318
 pharmacy law, regulations, and
 standards, 17–25
 pharmacy satellite, 51
 pharmacy technician, 10–12
 ambulatory care and community
 pharmacies and, 30
 biopharmaceutics,
 pharmacokinetics, and
 pharmacodynamics, 256–257
 certification, 10–11, 12, 15, 202, 215,
 216
 certification renewal, 12, 15
 Code of Ethics, 11
 continuing education, 202, 337–338
 continuing professional
 development, 337–338
 defined, 104
 duties, 10, 13
 duties in hospital clinical
 pharmacy, 45
 registration, 17, 24, 202
 responsibilities, 11
 role in pharmacy informatics,
 316–317
 Pharmacy Technician Certification
 Board (PTCB), 12
 Pharmacy Technician Certification
 Exam (PTCE), 12
 Pharmacy Technician Forum, 14, 217
 phenobarbital, 24
 phlebitis, 301
 placating response, 272

prescription identification card, 331
 prescription monitoring programs,
 18–19
 priming IV tubing, 302–303
 processing medications orders and
 prescriptions, 115–122, 277–280
 professional organization benefits, 338
 prospective payment, 332
 Protected health information (PHI),
 24, 25
 pseudoephedrine, 21, 221
 pyrogens, 300–301

Q

quality control, 51, 237
 quality improvement, 51, 237
 quizzing response, 272

R

real world, pharmacy technician in
 the, 201–206, 337–339
 recalls, 181–183
 relationship management, 5, 211, 212
 repackaging, 136, 293
 retrospective payment, 332
 Risk Evaluation and Mitigation
 Strategy (REMS) drugs, 32
 root cause analysis, 311
 routes of administration, 91, 92, 256

S

Safety Data Sheet (SDS), 134
 Schedule I prescription, 24, 222
 Schedule II drugs, 324
 prescription for, 19, 20, 21, 221, 222
 Schedule III drugs, 324
 prescription for, 20, 221
 Schedule IV drugs, 324
 prescription for, 20, 221, 222
 Schedule V drugs, 324
 prescription for, 20, 23, 221, 222
 selegiline, 86
 self-advocacy, 5, 211
 self-management, 5, 6, 211
 short answer
 aseptic technique, sterile

compounding, and IV admixture programs, 151, 300–303
 billing and reimbursement, 196, 331–332
 biopharmaceutics, pharmacokinetics, pharmacodynamics, 89, 256–257
 communication and teamwork, 111, 271–272
 community, ambulatory care, and home care pharmacy practice, 39, 230
 drug classifications and pharmacologic actions, 82, 252
 hospital and specialty pharmacy practice, 51, 237
 human body, 65, 243
 learning strategies, 5, 211
 medication dosage forms and routes of administration, 98, 263–264
 medication safety, 165, 309–312
 nonsterile compounding and repackaging, 140
 pharmaceutical supply chain management, 187, 323–325
 pharmacy and pharmacy technician, 14, 216–217
 pharmacy calculations, 130, 286
 pharmacy informatics and technology, 174, 316–317
 pharmacy law, regulations, and standards, 25, 223
 pharmacy technicians in the real world, 204, 337–338
 processing medications orders and prescriptions, 122, 280
 simvastatin, 86
 social awareness, 6, 212
 solve, pharmacy calculations, 127–129, 284–286
 specialty medications, 48–49
 spill kit, 146, 303, 325
 standard units, 125
 STAR safety tool, 156
 State Boards of Pharmacy, 17, 19, 222, 324

step therapy, 331
 sterile compounding, 47, 143
 study protocol, 48
 substance inventory, 13
 suppositories, 93
 compounding, 136
 SureScripts, 171
 syrups, 92

T

teamwork, 103, 111, 272
 technology downtime planning, 317
 telepharmacy, 172
 thalidomide, 37
 third-party payers, 30–31, 37
 third-party reimbursement, 190
 time management, 4, 211
 total parenteral nutrition (TPN), 34, 37, 147
 automated compounding of, 301–302
 transitions of care, 48
 trituration, 293
 troches, 136
 true or false
 aseptic technique, sterile compounding, and IV admixture programs, 148–149, 298
 billing and reimbursement, 194, 329–330
 biopharmaceutics, pharmacokinetics, pharmacodynamics, 88, 255–256
 communication and teamwork, 110–111, 270–271
 community, ambulatory care, and home care pharmacy practice, 36–38, 229
 drug classifications and pharmacologic actions, 77–80, 249–250
 hospital and specialty pharmacy practice, 49–50, 236
 human body, 63–64, 242–243
 learning strategies, 5, 211

medication dosage forms and routes of administration, 96–97, 262
 medication safety, 164–165, 308–309
 nonsterile compounding and repackaging, 138–139
 pharmaceutical supply chain management, 183–185, 321–322
 pharmacy and pharmacy technician, 13, 215–216
 pharmacy calculations, 126–127, 283–284
 pharmacy informatics and technology, 173, 315–316
 pharmacy law, regulations, and standards, 23–24, 222
 pharmacy technicians in the real world, 203, 337
 processing medication orders and prescriptions, 119–121, 278–279
 tunneled central venous catheters, 34

U

universal precautions, 40
 USP Chapter <800>, 324–325

V

vancomycin, 33, 228
 vertical LAFW, 302
 vitamins, 75

W

warfarin, 86
 wellness programs, 32
 wholesale acquisition cost (WAC), 190
 workplace issues affecting medication errors, 309–310