dental devices used in obstructive sleep apnea. The content is also consistent with the authors’ stated goal of emphasizing common clinical problems, given that there are a noticeable number of questions on chronic obstructive pulmonary disease, infectious pneumonias, and pulmonary malignancies. One of the major challenges in organizing a book like this is to strike an appropriate balance between the common problems that all pulmonologists must master and the “fascinomas” and clinical rarities that make medicine so unpredictable and stimulating. Q&A Color Review of Respiratory Medicine does a nice job of achieving that balance. The backbone of “bread and butter” cases is complemented by questions and illustrations of rare cases that recapture the reader’s interest just when the questions seem to get commonplace.

Despite having a broad range of questions and concise, well-written answers, this book has limitations. The biggest is that it is not comprehensive enough. The topics that are addressed are described to an appropriate level of detail, but this level is far less than one would need to understand a particular disease or problem well, so this book can only be used as a supplement to other more comprehensive texts. To be fair, I think the authors never intended this book to be a comprehensive review. From a practical perspective, however, most health-care professionals are very busy and overwhelmed with the growing list of textbooks, journal articles, and online resources that they do not have time to read. Where, then, does Q&A Color Review of Respiratory Medicine fit into all of this? Is it yet another textbook one should add to the pile of things to read if one had the time? I think one of the advantages of this book is that it can be fit into the small openings of a busy professional’s schedule. The book is compact and light. Each question is independent of the next. The answers do not take long to read. The illustrations are fun and interesting. Thus, I found it a nice book to have on the bus, while waiting for a colleague, or during a lunch break. Would I use this book to engage in a detailed review of pulmonary medicine? Probably not. Do I find it useful as a fun, educational text I can use during the small breaks that thankfully present themselves during the day? Absolutely.

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Infection control and prevention of antibiotic resistance are important issues in the intensive care unit (ICU). Among the various health-care settings, ICU organisms are on top of the resistance pyramid. Considering the exodus of patients from the ICU to other health-care settings, including nursing homes, chronic-care facilities, and the community, the ramifications of spread of antibiotic resistance are tremendous. The spread of antibiotic resistance is like a tidal wave that has its center in the ICU, and the waves are spreading toward the locales to which patients are transferred. The effect of antibiotic resistance is at several tiers, such as the individual, ICU, hospital, other health-care settings, and the community. Everyone who steps into the ICU should be aware of day-to-day measures needed to prevent spread of infection, especially with resistant organisms.

This book is a comprehensive update on infection control and antibiotic resistance in the ICU setting, to help answer some of the outstanding questions and to propose guidelines. Briefly, it defines the extent of the problem of infection control and antibiotic resistance. It establishes clear definitions of the various terms used (eg, carriage and colonization) and describes the antimicrobial agents available. It goes on to discuss infection control, specific infections in ICU populations, and unique considerations in ICU patients.

Section 1 defines the basics of infection control. The first chapter is a good introduction, clarifying commonly used words. It clearly differentiates between terms such as carriage, colonization, and overgrowth, some of which can be confused with each other and are used interchangeably. The next chapter focuses on carriage, reviews normal defense mechanisms, and distinguishes between normal and abnormal flora. The third chapter further expands on these concepts and clarifies the distinction between colonization and infection, specifically in the internal organs, such as the bladder and the respiratory tract, with examples and detailed mechanisms. Normal defense mechanisms and control measures are also reviewed. The fourth chapter discusses (and provides detailed tables on) normal and abnormal hospital flora and the impact of antibiotic resistance.

The chapter on classification of ICU infections provides a different way of looking at this issue. The chapter focuses on the sources of the micro-organisms. This approach deviates from the conventional way of defining infections—community-acquired versus ICU-acquired. The authors of this chapter preferred to classify them as either primary endogenous infections (from flora imported into the ICU by the patient on admission [early infection]), secondary endogenous infections (from flora acquired in the ICU [later infection]), or exogenous infections (abnormal flora, such as Acinetobacter, that cause direct infection without prior colonization). This is the proposed explanation for the limitation of existing measures, such as hand-washing and isolation, as they do not control primary endogenous and secondary endogenous infection (85% of the infections in the ICU). This approach to classifying infections necessitates addressing the carrier state by using a program consisting of surveillance cultures and selective digestive decontamination (SDD). This approach is different from conventional wisdom, is not widely practiced in the United States, and is not part of the common guidelines, such as the American Thoracic Society/Infectious Disease Society of America (ATS/IDSA) guidelines for nosocomial pneumonia. The final chapter in this section, on gut microbiology and surveillance samples, defines techniques and qualitative and quantitative details to distinguish the carrier state, overgrowth, and their clinical importance. The authors make an argument for surveillance cultures in addition to infection-related cultures, and they suggest control measures based on a surveillance culture strategy.

Section 2 is a detailed review of existing antibiotics and antifungal agents, including subclasses. This section comprehensively covers available oral and parenteral antibiotics, with details of their antimicrobial spectrum. This is well categorized and subclas-
sified, with differences between subgroups highlighted. The chapter concludes with an interesting and clinically relevant discussion of concentration-dependent versus time-dependent antibiotic bactericidal activity. The antifungals are reviewed, along with differences between various agents and newer drugs in development. This section concludes with a chapter on enteric antibiotics, with a new addendum in this edition on enteral nonabsorbable antibiotics, which is the basis of SDD. A rationale is made for SDD in keeping antibiotic resistance in check and prolonging the effect of the currently available antimicrobials. Here, hand-washing is proposed as an ancillary measure to SDD; in contrast, hand-washing is one of the primary strategies in most infection-control programs.

Section 3 targets various aspects of infection control in the ICU: it presents an evidence-based, comprehensive approach with respect to invasive devices such as peripheral catheters, central venous catheters, ventilator-related equipment, and urinary catheters. The authors make the point that the widely used antiseptic-coated central venous catheters reduce catheter contamination but do not reduce catheter-related infections. A device-management program is recommended as an infection-control measure. The chapter on ICU antibiotic policies focuses on balancing efficacy, safety, and costs to achieve good outcomes. It outlines a process that is difficult to plan, implement, and monitor, especially with the widely prevalent "open ICU" structure.

Advancements in molecular techniques are described in the next chapter, which analyzes 57 infection outbreaks. These outbreaks were usually polyclonal. The molecular techniques used were more effective in pinning down external infection sources, since internal sources could not be easily identified without surveillance cultures. This is a rapidly advancing field, with many exciting developments. This section concludes with an in-depth discussion of SDD as an important limiter of infection, resistance, and mortality in the ICU.

Section 4 gives clinical descriptions of ICU infections, including ventilator-associated pneumonia (VAP), bloodstream infections, pleuropertitoneal infections, wound infections, and urinary-tract infections. Other topics include pediatric and neonatal ICU infections; immunocompromised patients, such as transplantation patients and patients with acquired immune deficiency syndrome; and clinical virology in the ICU. Broadly speaking, these are updated and exhaustive reviews of these topics, with treatment guidelines for these infections. Two chapters stand out: the one on "immediate adequate antibiotics" as a major factor impacting on morbidity and mortality, and the one on "therapy of infection." Both these chapters present data to justify a comprehensive approach of surveillance cultures, early systemic antibiotics (to eradicate abnormal organisms present in patients on ICU admission), SDD, device-management, and other infection-control measures to minimize infection, optimize outcomes, and minimize the risk of increasing antibiotic resistance.

Section 5 is a potpourri; it describes sepsis definitions, metabolic and nutritional aspects of sepsis, and clinical aspects of sepsis and septic shock. The chapter on antibiotic resistance builds on the data presented extensively earlier. It points out the limitations of existing strategies referred to by the authors as the "traditional approach"—namely antibiotic restriction, hand-washing, and isolation. The authors address the overall issue of antibiotic resistance with a multipronged strategy of surveillance cultures, early systemic antibiotics, SDD, and hygiene practices. They present 5-year data from a pediatric ICU that used this strategy and eradicated the abnormal resistant gut organisms, with good outcomes. The pharmacist’s role in SDD is defined in detail. The book concludes with an evidence-based section on ICU therapies.

In summary, this book is a very good review of infection control and ICU infections in general, covering adult and pediatric populations and focusing on specific subsets such as VAP, acquired immune deficiency syndrome, and transplantation. To the authors’ credit, evidence-based practices are extensively presented and reviewed. The index is well-organized, the sections are well defined, and specific information is presented. The text is well written, and for a topic that has many technical terms and descriptions, it makes for relatively easy reading. There is some redundancy; several chapters introduce and reflect on the different types of infections: primary endogenous, secondary endogenous, and exogenous. The same is true for descriptions of terms such as the carrier state and overgrowth. This book is an all-inclusive review, so it is fairly voluminous, and it goes beyond the title’s description. This is partly because the authors describe ICU infections in detail and touch on a substantial number of related ICU topics. System-specific diseases such as VAP and abdominal infections are described at great length; though this may be relevant from an overall infection-control perspective, it makes for intense reading.

In addition, from the perspective of therapeutic infection control, the data presented here lean heavily toward SDD as the recommended antibiotic-resistance-prevention and infection-control method. This is an eye-opener, since SDD is not a common practice in ICUs in the United States. The data presented for commonly followed approaches, such as antibiotic restriction and hand-washing, highlight their limitation to control short-term and long-term antibiotic resistance. However, at this point it appears that SDD can increase the incidence of methicillin-resistant Staphylococcus aureus (MRSA), as MRSA coverage is usually not included in SDD protocols, and SDD is not useful in ICUs that have a high level of endemic MRSA. In the 2005 ATS/IDSA nosocomial pneumonia guidelines, SDD is not recommended for routine use, especially in patients who may be colonized with multiple-drug-resistant pathogens such as MRSA. The final decision on the implementation of SDD remains ICU-specific.

This book is directed mainly toward personnel involved in infection control and ICU care, such as physicians, nurses, and pharmacists. It contains abundant useful information for ICU workers interested in building policies and protocols to control the epidemic of antibiotic resistance, maintain the efficacy of available antibiotics, and promote good outcomes. Respiratory therapists may find interesting the chapters on VAP, device control, tubing, and humidifiers. The concept of SDD is well explained and may be of interest to all involved in ICU care, including nurses, therapists, infection control personnel, and physicians.

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In 2014, 6,995 (8%) of patients staying in an intensive care unit (ICU) for more than two days presented with at least one ICU-acquired healthcare-associated infection (HAI) under surveillance. Of all patients staying in an ICU for more than two days, 6% presented with pneumonia, 4% with bloodstream infection (BSI) and 3% with urinary tract infection (UTI). Inclusion criteria, risk factors and case definitions of ICU-acquired HAIs are described in detail in the protocol [1]. Infections occurring after 48 hours in the ICU are considered as ICU-acquired in both protocols. With admission day being counted as day 1, infections with onset from day 3 onwards should therefore be reported. One record per HAI is collected, together with antimicrobial resistance markers for isolated microorganisms.

Fig. 2. Description of the acute and late phases following infection/stress/injury. After injury, the acute phase is composed of an early and a late period.