

Bioterrorism: Guidelines for Medical and Public Health Management. Donald A Henderson MD MPH, Thomas V Inglesby MD, and Tara O'Toole MD MPH, Editors. Chicago: American Medical Association. 2002. Soft cover, illustrated, 244 pages, \$29.95.

The anthrax attacks of 2001 brought to light the desperate and unfortunate need for all health care providers to be familiar with the clinical features and epidemiology of the agents of bioterrorism. Very few practitioners in the United States have seen or managed a case of inhalation anthrax, smallpox, pneumonic plague, or even botulism; yet we all have to be prepared to deal with these and other intentionally inflicted infectious diseases. **Bioterrorism: Guidelines for Medical and Public Health Management** provides up-to-date presentations on the agents most likely to be used in a bioterrorism event, as well as detailed clinical descriptions of the cases associated with the anthrax attacks in Miami, New York, and Washington DC in 2001.

The book is intended primarily for the busy clinician or public health official who must prepare for or respond to a potential bioterrorism event. It is a practical book in that it is concise, and yet it is also comprehensive enough to be a reference. All health care providers must be capable of sounding the alarm for a bioterrorism attack, and this book provides the basic knowledge to recognize the most likely bioterrorism diseases. For physicians who specialize in pulmonary and infectious diseases, the book describes concise management principles by way of updated consensus statements developed by the Working Group on Civilian Biodefense.

The editors, including Donald A Henderson of global smallpox-eradication fame, form the core of the Johns Hopkins Center for Civilian Biodefense and are the foremost experts in this burgeoning field. They initially addressed the growing threat of bioterrorism in a series of articles published in *JAMA* in 1998–2000. This book is a compilation of those articles, updated to include the data from the bioterrorist events of 2001.

Each updated article is a chapter in the book, and together they cover the 6 agents listed by the Centers for Disease Control as Class A, most likely to be used as bioweapons: anthrax, smallpox, plague, botulinum toxin, tularemia, and the collective hemorrhagic fever viruses. Each of these reports forms a consensus statement from an expert panel composed of military, civilian government, and civilian academic experts. The book wisely does not address some of the more esoteric agents, such as staphylococcal enterotoxin B or ricin, as these are thought less likely to be used as bioweapons, for various reasons.

The book is organized in a readable fashion. After a brief foreword by Anthony S Fauci, the first chapter introduces the topic of bioterrorism by explaining the need for this book and the general methods used in creating it. Fauci and H Clifford Lane then set the stage for the next chapters to describe in detail the bioterrorism anthrax of 2001. The cases of those who survived and those who died from inhalation anthrax are presented with concise clinical and laboratory data. Perhaps most useful are the radiology studies, which include standard chest radiographs and computed tomograms, as well as the management strategies employed in the care of those patients.

Next, Julie L Gerberding, the present director of the Centers for Disease Control, discusses the state of public health preparedness vis-à-vis bioterrorism in the United States. She highlights the need for a robust surveillance system, with emphasis on front-line clinicians, as they will be the first to identify a bioterrorism outbreak. The next 3 chapters discuss cases that demonstrate the need for that surveillance system, including the cases of fatal inhalation anthrax in 2 women who had no known risk factors for acquiring the disease. Although a risk factor was later elucidated, a case of cutaneous anthrax in an infant in New York City is also presented.

Following the case descriptions of the anthrax attacks of 2001, the editors placed the updated monographs on each of the 6 Class A bioterrorism agents. The first of these chapters discusses anthrax and is the longest chapter in the book. It is updated to include data

and recommendations learned from the anthrax attacks of 2001. This chapter addresses the clinical management of anthrax in adults, children, and pregnant patients, discusses anthrax immunization and post-exposure prophylaxis, and provides specific details for infection control and decontamination. It closes with a brief section on ongoing research.

The next chapter discusses one of the scourges of humankind: smallpox. Though it was eradicated from the world by a concerted worldwide effort, this killer of millions must be considered a potential bioterrorism agent. The chapter describes the clinical and epidemiological features of smallpox and includes photographs of the progression of the disease as well as a good discussion on the time-honored treatment of post-exposure vaccination with vaccinia virus and potential new therapies like cidofovir. The administration and complications of the smallpox vaccine are discussed, as are infection control, decontamination, and future research. This chapter has been updated since the original publication in *JAMA*, but it does not cover the current controversy regarding pre-exposure vaccination in the United States.

The following chapters cover the other 4 Class A bioweapons. These agents are considered somewhat less likely to be used as bioweapons, but have been weaponized by several nations in the past. All these agents still exist as naturally occurring diseases, so care must be taken in determining if a case represents a bioterrorism event. Obviously, the epidemiology will often declare the nature of a case or cluster of cases; for instance, Lassa fever is not a naturally occurring disease in someone who has not traveled outside the United States. These chapters provide excellent discussions on plague, botulinum toxin, tularemia, and the viral hemorrhagic fever agents. They cover the epidemiology and clinical features of each of these agents, and also address the treatment, infection control, decontamination, and future research for each agent.

The final chapter discusses some of the legal challenges regarding the public health response to a bioterrorism event. This mainly concerns involuntary confinement for quar-

antine, which may become a contentious issue.

I have only a few criticisms of this book. As with any text concerning a rapidly evolving field, some of the ideas on management have now progressed beyond what is covered in the book. Issues that are not up to date in this book include the role of anthrax vaccine in post-exposure prophylaxis and the role of smallpox vaccination in pre-exposure cohorts such as health care workers. Additionally, a description of the efforts at the United States Capitol to prevent anthrax cases would have provided the only published insights into that unfortunate event. Finally, as any bioterrorism event is designed to cause fear, a chapter addressing the psychological management of such an event would be germane and should be included in any future texts on this subject.

This book is published as a soft-cover edition, with a microscope photo of anthrax on the cover. The book is generally organized in a clear and logical manner. There are very few typographical errors, and the text is generally very readable. The copy I received had several pages that were blurred to varying degrees (pages 145, 153, 156, 161, 164), one of which was barely readable. The clinical, microscopic, and radiographic photographs were all of high quality, and the tables are easily readable and concise. The references were appropriate and well documented, and the authors are leaders in their respective fields.

Overall, I think this book provides a concise and readable summary of the important aspects of bioterrorism and would fit well into the library of any physician, public health official, nurse, or respiratory therapist interested in this growing field.

David L Blazes MD MPH*
 Infectious Diseases Department
 National Naval Medical Center
 Uniformed Services University of the
 Health Sciences
 Bethesda, Maryland

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Comprehensive Management of Chronic Obstructive Pulmonary Disease. Jean Bourbeau MD MSc, Diane Nault RN MSc, and Elizabeth Boyrcki RN HBScN, MN, GNC(c). Hamilton, Ontario: BC Decker. 2002. Soft cover, illustrated, 372 pages, with CD-ROM, \$59.95

Comprehensive Management of Chronic Obstructive Pulmonary Disease is a new text from an impressive multidisciplinary collaboration of authors working in Canada. It is intended to reach a diverse audience of health professionals involved in COPD management and is based on the belief that a team approach delivers the best possible quality of care. Furthermore, the authors consider the patient the central member of this team. The editors express the innovative, admirable aim of going beyond the traditional topics covered in COPD texts, such as lung function and pharmacotherapy, to include those areas less familiar but arguably just as important to the patient: psychosocial issues, travel, leisure, and sexual function, for example.

Each chapter begins with clearly stated objectives and concludes with a summary, illustrative case history, and bulleted key points. There are also practical suggestions of when to refer to an appropriate specialist from the multidisciplinary team. The book is extensively referenced and comprehensively indexed. Each chapter also includes a list of suggested extra reading, with useful, brief descriptions of why the items might interest the reader. Text, tables, figures, and photographs are clear but black-and-white throughout. The book includes a CD-ROM that contains the full text and illustrations, in PDF (portable document format), but no additional features.

The first 3 chapters concern the epidemiology, basic pathogenesis, and clinical features of COPD, presenting a rather bleak outline of the impact of this disease on the patient, the patient's family, and society. The rationale in moving from a reactive, crisis-oriented model of care to a planned, longer-term approach is discussed in depth, since this strategy forms the basis of the remaining chapters.

The only 2 interventions that have shown a survival benefit in COPD (smoking cessation and long-term oxygen therapy) are dealt with in subsequent, separate chapters. These are also sections on the pharmacotherapy of stable COPD, with equal emphasis on the important topic of drug *delivery*,

not merely the drugs themselves. The text is commendably up to date, including, for example, new classes of drug, such as the long-acting anticholinergics. However, readers will find no reference to oxitropium, presumably because that drug is not marketed in Canada. The chapter contains a thoughtful summary on the still controversial role of inhaled corticosteroids in stable COPD. A particularly useful and detailed section aids the teaching of inhaler technique to patients and includes all the currently available types of drug delivery systems.

As a physician and a research fellow investigating exacerbations of COPD, I was particularly interested to read Chapter 8, "Managing Acute Exacerbation." The authors provide a clear, concise, and readable summary of current thought on this topic. Respiratory viruses are increasingly being recognized as the most important cause of COPD exacerbation, but this point was not made specifically. This is a minor criticism. In-hospital treatment strategy is not covered. The important topic of self-management is discussed in detail, and an example self-management plan is included as an appendix. Though there is a large body of literature in support of such an approach for asthma, surprisingly little work has been pursued regarding COPD. Here the authors refer to their own data, presented in abstract form, in support of their arguments.

Chapter 9 considers the management of dyspnea and cough, which are the 2 most troublesome and difficult symptoms. A lucid account of the pathophysiology, including more difficult concepts such as dynamic hyperinflation, precedes a discussion of both pharmacologic and nonpharmacologic treatment options. Fatigue and approaches to energy conservation are covered in Chapter 10. Building from there, Chapter 11 provides a detailed review of exercise training in the context of pulmonary rehabilitation. This section comprehensively covers the concepts of different types of exercise, providing a rationale for the in-depth description, enhanced by figures, of appropriate exercise techniques. Psychosocial factors, affecting both patient and family, are the subject of Chapter 12. The important interplay of psychological morbidity and physical functioning is discussed, including methods of assessment and treatment for the commonly encountered problems of anxiety and depression in these patients.

Other aspects that can profoundly affect quality of life including nutrition, sleep, sex-

uality, and leisure time, are considered in Chapters 13–16. The latter includes a review of recommendations for patients contemplating air travel, a question that often arises in clinical practice. Self-management is playing an increasing role, and Chapter 17 is devoted to patient education, including a review of relevant learning theories and principles of adult learning.

The penultimate chapter deals with palliative care issues. This often neglected topic is of increasing interest given trends in the epidemiology of COPD. The important subjects of end-of-life discussion and symptom control are covered. Though the book as a whole is commendably free from important errors, this chapter refers to continuous positive airway pressure as the usual mode of noninvasive ventilation for COPD exacerbations (rather than, for example, bi-level positive airway pressure), and I found the use of the term “cure” a little clumsy in relation to symptoms in a chapter on palliative care.

Throughout the book the emphasis is on multidisciplinary team care and, having established that, the final chapter is appropriately devoted to methods of program evaluation and outcome measurement.

In summary, **Comprehensive Management of Chronic Obstructive Pulmonary Disease** aims to reach a multidisciplinary audience and to go beyond the traditional topics covered in COPD texts. Does it succeed in these stated aims? I believe it does. The impressive collaboration of authors from a variety of backgrounds brings expertise to each of the subjects covered. I have a couple of criticisms: I am surprised at the omission of sections considering noninvasive ventilation and surgical options in a book that claims to be “comprehensive,” and I think color printing would have enhanced the book’s appeal. That said, color printing is more expensive and would surely have pushed up the purchase price. To conclude, there truly is something for everyone between the covers of this book. This text brings together expertise from all members of the multidisciplinary team, and I recommend it as a useful reference work in helping attain our common goal: improving the outlook of our COPD patients.

John R Hurst BSc MRCP

Clinical Research Fellow
Academic Unit of Respiratory Medicine
Dominion House
St Bartholomew’s Hospital
London, United Kingdom

Advancing the Frontiers of Cardiopulmonary Rehabilitation. Jean Jobin PhD, François Maltais MD, Paul Poirier MD, Pierre LeBlanc MD, and Clermont Simard PhD, Editors. Champaign, Illinois: Human Kinetics. 2002. Soft cover, illustrated, 263 pages, \$32.

The content of this book is a compilation of 30 original reports presented at the 2001 International Symposium on Cardiopulmonary Rehabilitation in Québec City on “Integrating Cardiopulmonary Rehabilitation to the Treatment of the Disease.” The reports are grouped into 9 parts: Cardiopulmonary Rehabilitation: Services and Organization; Update on the Pharmacologic and Non-Pharmacologic Treatment of CHF and COPD Patients; Integrating New Technologies in Cardiopulmonary Rehabilitation; Home Rehabilitation Programs; Cardiopulmonary Rehabilitation and Cardiac and Thoracic Surgery; Selecting and Screening Patients for Rehabilitation; Integrating Non-Conventional Approaches in Cardiopulmonary Rehabilitation; Integrating Psychosocial Factors into Rehabilitation; and Exercise Prescription: Special Considerations. These reports are introduced by a call to shift from the traditional mechanistic physician-directed medical paradigm to one that is patient-centered, interdisciplinary, and considers the patient as a whole person, including not only biological factors but psychosocial and spiritual needs.

Since the aim of this book is integration of knowledge, the intended readers include all participants in the flow of knowledge-interactions in rehabilitation, including the patient, physician, psychologist, social worker, nurse, nutritionist, family, community, occupational therapist, respiratory therapist, physical therapist, exercise specialist, and pharmacist. However, only a small portion of the book would appeal to that broad audience. By and large this is a book written by physicians for other physicians who have similar world-views.

Perhaps reflective of the mechanistic, physician-directed medical paradigm, the book primarily addresses the “bio” portion of the “bio-psychosocial-spiritual” paradigm described by the editors in the first chapter. Only 2 of the 30 reports were categorized as psychosocial and they were disappointingly short and noncomprehensive. One addresses involvement of the partner in rehabilitation, and the other is a discussion of whether smoking cessation should be a

goal or prerequisite in pulmonary rehabilitation and did not actually address psychosocial issues. The report on maintenance of long-term rehabilitation completely overlooked the volume of literature on motivation and other theories that underlie cognitive and behavioral interventions that would advance our understanding of why certain interventions are more effective in promoting long-term adherence to rehabilitation. None of the reports discussed patients’ spiritual needs.

Although in the opening chapter the editors recommended an interdisciplinary approach to rehabilitation and they made a call to moving beyond secondary prevention, the psychosocial and spiritual needs of the patient were either omitted in the remaining chapters or were addressed quite superficially. This may be a reflection on the state of the science as well as the result of only token representation from disciplines that can speak more authoritatively and in depth about these important issues.

The editors pointed out at the beginning of the book that several important topics were left out; unfortunately, they did not share which these were. A few of the reports discussed the divergence of rehabilitation from health sciences into medical sciences and argued effectively that rehabilitation is more than secondary prevention and that a new concept of wholeness, of bringing the person to maximum functioning as a human being, should be adopted with an integrated approach. Certainly I agree with the idea of an integrated approach to rehabilitation and the need for multiple disciplines to work together and to place the patient at the center of that effort. What is interesting is the characterization of this approach as something new that would represent a paradigm shift; in fact it is not at all new for disciplines outside of medical sciences.

Back in the 1950s and 1960s public health education programs were actively promoting healthy behaviors, including disease prevention. In 1974 the Canadian Health Minister called for an expanded definition of health, beyond the medical model, beyond biology, to include attention to lifestyle, social, and physical environments, and health organizations and policies that impact health. Health care providers were urged to move from a model of treating the disease to illness-prevention and health promotion. In 1979

the United States Surgeon General adopted the “lifestyle theory of illness etiology.” The mechanistic, physician-directed medical paradigm described by the editors inhibits advances in rehabilitation by ignoring advances in other disciplines.

Fortunately, a number of disciplines have traditionally approached human beings as complex, whole persons and do not share the mechanistic medical model that has a microscopic view of people through a disease or an organ. Some of these disciplines such as psychology, sociology, and theology have a vast body of knowledge on the “psychosocial-spiritual” aspects of the human being. Other health care disciplines, such as nursing, have a long history of integrating “biopsychosocial-spiritual” needs in the promotion of optimal health (a balance of physical, emotional, social, spiritual, and intellectual health) and do not focus only on the treatment of the disease.

The editors should be congratulated for their call for an openness to think more broadly about rehabilitation. The traditional topics of pharmacology, technology, exercise protocols and prescription, and physiologic abnormalities were well presented and offer a nice overview. However, since physicians were over-represented as contributors to the chapters, it was unlikely that there would be much depth of perspective from the disciplines that can advance the psychosocial-spiritual aspects of rehabilitation. The chapters addressed the usual topics in pulmonary rehabilitation, but the book falls short in moving towards the paradigm of integration.

This paperback book has a reasonable price and offers a quick reference on several cardiopulmonary rehabilitation issues. The text is easy to read and formatted much like journal articles, which adds familiarity for the reader. The incidence of typographic errors was low and the clarity of the illustrations was excellent. Overall this book is a useful beginning resource for health care professionals working in cardiopulmonary rehabilitation.

Amy H Tsang PhD
Practice Division
College of Nursing
University of Arizona
Tucson, Arizona

Hyperbaric Surgery: Perioperative Care. Dirk Jan Bakker MD PhD and Frederick S Cramer MD, Editors. Flagstaff, Arizona: Best Publishing. 2002. Hard cover, illustrated, 459 pages, \$154.

When I first saw the title of this book I assumed it would be a treatise on anesthesia and surgery performed in the hyperbaric environment: an interesting but rare occurrence. Instead, though it does cover that topic, primarily the book is a broad overview of the history of hyperbaric oxygen (HBO) therapy and its modern indications.

The first chapter, by Dirk J Bakker, which provides a history of hyperbaric therapy, is a standout chapter. It summarizes the use of high ambient pressure, dating back to the 17th century, when Henshaw constructed a chamber in which environmental pressure could be manipulated: high pressure for treating acute diseases and low pressure for chronic ones. The modern era of hyperbaric therapy started in the 19th century, when compressed air was used to prevent the work environment from flooding during tunnel excavation and bridge tower construction in marshy ground. Men exiting the compressed air environment often suffered joint pain, spinal cord injury, or death (which became known as caisson disease, the bends, or decompression sickness). Investigations by Paul Bert in Paris revealed the cause to be in situ bubble formation caused by nitrogen supersaturation. It was recognized that recompression using air could cure this disease or at least reduce its mortality. Using animals, Bert showed that oxygen was also effective, although he didn't try it under pressure because he believed that at high concentrations it was toxic, even at 1 atmosphere. It was not until the 1930s that Behnke, working for the United States Navy, demonstrated in humans that using HBO at 2.8 atmospheres was highly effective and safe for decompression sickness.

In parallel with sharply focused investigations into its use for decompression sickness were several well-intentioned but misguided efforts to promote hyperbaric air, then oxygen therapy, for a variety of diseases for which there is neither evidence of efficacy nor rationale. The most dramatic example was a 60-foot diameter hyperbaric chamber built in 1928, outfitted with bedrooms, lounges, a library, and a smoking room.

Though some practitioners continued to promote HBO as a panacea, Behnke's work was followed by careful studies designed to

elucidate its physiologic, pharmacologic, and clinical effects. In the 1950s cardiac surgery in hyperbaric chambers was tried on both sides of the Atlantic in an attempt to prolong the safe period of total circulatory arrest. Though this was quickly supplanted by cardiopulmonary bypass, intermittent application (1–3 times daily) of HBO was shown to be effective as an adjunct to antibiotic and surgical therapy in gas gangrene (clostridial myonecrosis) and several other clinical situations in which tissue oxygen delivery is impaired. For example, HBO appears to be uniquely able to improve perfusion in tissues previously irradiated for cancer, which may then facilitate wound healing. Recent studies appear to indicate that HBO reduces the effects of ischemia-reperfusion injury in muscle flaps.

Undersea and hyperbaric medicine is evidence-based, and trained physicians can be credentialed by an American Board of Medical Specialties subspecialty board examination process. In that spirit, **Hyperbaric Surgery's** introduction promises evidence-based reviews, which, in addition to containing a good bit of personal observation and experience, it largely delivers.

There are chapters on most of the accepted indications for HBO, including chronic refractory osteomyelitis, osteoradionecrosis, soft tissue radiation injury, necrotizing soft tissue infections, crush injuries, and hypoxic non-healing wounds. Bakker's extensive experience with gas gangrene and mixed aerobic/anaerobic soft tissue infections remains an international “yardstick” in the management of these deadly diseases. There are chapters on the physiologic and pharmacologic effects of HBO, hyperbaric chamber design and safety, and the basic mechanisms underlying the effect of HBO on wound healing. A chapter on care of critically ill patients in the hyperbaric environment is the best review of its kind that I have seen. There is also a chapter on conditions (eg, thermal burns and frostbite) for which there is a rationale for HBO and supportive evidence but as yet no consensus as to whether HBO should be routinely used. Although there are sections dedicated to the nonsurgical indications of air embolism and decompression illness, the book lacks a chapter on carbon monoxide poisoning.

The authors include many eminent and well-published surgeons and investigators in the field of soft tissue infections, wound management, and radiation-induced tissue damage, such as Bakker, Thomas K Hunt, John

J Feldmeier, Michael B Strauss, and William A Zamboni. Though some of the material consists of personal experience, the text is well referenced. Some of the information is dated, such as that pertaining to the use of corticosteroids for air embolism. However, most of the book's recommendations are up to date.

Though **Hyperbaric Surgery** is a good overview, it is difficult to use as a reference book. There is quite a bit of overlap among chapters. For example, fundamental mechanisms of wound healing and the effects of oxygen are covered in 5 chapters. That is not a major fault, but it is a major fault that the book—inexplicably—has no index.

Except for carbon monoxide poisoning, the book summarizes very well the clinical aspects and scientific underpinnings of hyperbaric medical practice. Despite its few shortcomings, it is a volume that will be useful to both the clinician interested in reading more about the field and the hyperbaric specialist. The format is exceptionally "high class." Glossy pages make the many excellent photographs and radiographs outstanding. For anyone even slightly interested in hyperbaric medicine, the illustrations alone make the book worth owning.

Richard E Moon MD

Departments of Anesthesiology
and Medicine
Center for Hyperbaric Medicine
and Environmental Physiology
Duke University Medical Center
Durham, North Carolina

Hyperbaric Nursing. Valerie Larson-Lohr and Helen C Norvell, Editors. Flagstaff, Arizona: Best Publishing. 2002. Hard cover, illustrated, 400 pages, \$73.

Hyperbaric Nursing is a textbook that fills a long-standing need within the community. The editors, Valerie Larson-Lohr and Helen C Norvell, spent many long hours pulling this major project together, and they are to be commended for their superb effort. Twenty-eight dedicated baromedical professionals contributed to the text.

The target audience is presumed to be baromedical nurses. However, this book is an excellent reference for hyperbaric technicians who manage programs or for organizations considering instituting new programs.

Each chapter's table of contents is presented in short form in the beginning of the book and in a longer, very detailed form at the beginning of each chapter. The detailed chapter tables are a useful feature in that they enable the reader to quickly access information. However, concordance between the tables of contents and the index is lacking. For example, from the index one would assume that the only mention of the Baromedical Nurses Association Standards of Care is on page 279, but the standards are actually spelled out beginning on page 85.

The editors have done a superb job of gathering useful baromedical information that has previously been available only from scattered sources. Editing problems, such as content overlap, inconsistent writing style, differing methods of citation, and differing approaches to the target audience, are evident to a degree in the book. Some source references, such as the list of Internet sites contained of page 377, have erroneous information.

Neither the list of contributors nor any of the chapters list the writers' credentials. Knowing the background and training of the authors would help the reader

understand the perspective and focus of the chapter.

The book is comprehensive and can serve as an excellent guide for program coordinators and staff members from all disciplines. Section II is a comprehensive review of documentation. It includes fundamentals of documentation and current requirements and standards. The examples of documentation and assessment forms that are included will be very helpful for programs that need to institute new forms or modify current ones. The source and copyright information for the forms are not always present, nor are the sources of the photographs.

Section III contains information specific to care of hyperbaric therapy patients. There are sections addressing generic issues, the multiplace environment, age-specific, critical care, and diabetic considerations. This section also includes the current approved indications for hyperbaric therapy, with reviews of each condition.

Other sections in the book address hyperbaric nursing research, patient education, regulatory requirements, and safety considerations. These sections are comprehensive, and the authors have excellent credentials even though these credentials are not given in the book. The section on transcutaneous oximetry and laser Doppler studies is a comprehensive reference for hyperbaric care providers.

Overall, this first-edition textbook on hyperbaric nursing is an exceptional addition to the professional literature.

Kathy Furnas RN BSN A-CHRN

Hyperbaric Medicine Department
Presbyterian/St Luke's Medical Center
Denver, Colorado