Aerosol therapy has gone through some pretty significant changes over the past few years. Not only are there more of these medications on the market today than ever before, but we’ve seen a major phase-out of metered-dose inhalers containing chlorofluorocarbons — traditionally a mainstay in the treatment of people with asthma and COPD.

For patients and families, these changes have led to confusion and, in some cases, downright frustration as they try to get used to new formulations of their inhaled medications. For respiratory therapists, it’s meant the need to brush up on the knowledge of aerosol delivery across the board to be sure we are providing the best care to our patients.

“There is a tremendous need to ensure RTs understand all facets of aerosol delivery, because it is the respiratory therapist who teaches the patients and families,” says AARC Executive Director Sam Giordano, MBA, RRT, FAARC. “Much has changed in the past three years — new medications, new delivery devices, better understanding of the barriers to adherence to aerosol therapy. We are the experts, and we must be up to date.”

In order to meet these needs, the AARC has just published an updated version of its popular “A Guide to Aerosol Delivery Devices for Respiratory Therapists,” authored by Arzu Ari, PhD, RRT, PT, CPFT; Joseph L. Rau, PhD, RRT, FAARC; Dean Hess, PhD, RRT, FAARC; and Timothy R. Myers, BS, RRT-NPS. It includes a foreword by Giordano. Supported by an unrestricted grant from Philips Respironics, the second edition is available at www.aarc.org/education by selecting “AARC Continuing Education Courses.” AARC members who read the guide and take an online post test can earn six free CRCE contact hours.

What’s in the expanded version and how can you put it to use in your practice? We turned to one of the guide’s authors, Dr. Arzu Ari, a faculty member in the division of respiratory therapy at Georgia State University in Atlanta, to walk us through it.
Aerosol Delivery Guide

“Making an informed decision about which aerosol delivery system to use for a specific patient and teaching that patient how to properly use that device will augment not only clinical excellence but also professional representation and recognition,” says Dr. Ari. She offers six ways bedside RTs can put the guide to work on the job:

1. Identify how to use each device properly.
2. Identify the best device to meet the needs of your patient.
3. Find time to teach patients and use techniques such as demonstration and return demonstration.
4. Repeat patient education during follow-up visits.
5. Notify the ordering physician when patient and device are not properly matched. The drugs don’t work when the patient can’t or won’t administer them properly.
6. Keep implementing the information provided in the guide in your clinical practice. A knowledgeable respiratory therapist can provide valuable input to physicians and patients alike.

### Take-Home Messages

According to Dr. Ari, “Aerosol medicine is experiencing a period of tremendous growth with many new and exciting developments. With the vast number of aerosol delivery devices available on the market and also in development, there is a need to improve the efficiency, precision, and consistency of aerosol drug delivery to patients with pulmonary diseases.”

We asked the AARC member to come up with her top four take-home messages from the updated guide, and here is what she said:

1. All three types of aerosol generators can be equally effective if they are used correctly by the appropriate patient.
2. The criteria to select an aerosol generator include patient-related, drug-related, and device-related factors, as well as environmental and clinical factors.
3. Aerosol drug administration differs in children and infants as they are not anatomically scaled-down adults. Consider age, and physical and cognitive ability, as well as patient-device interface when selecting an aerosol delivery device for children.
4. Aerosol drug delivery can be effective only if patients or care providers are educated in correct use of aerosol devices and patient adherence in aerosol drug administration is achieved.
One Down, Two To Go

“A Guide to Aerosol Delivery Devices for Respiratory Therapists, 2nd Edition” is just the first in a series of three aerosol guides to be published by the AARC. “To follow will be a book that will cover many of the concepts in this book but will be written at the level of the patient,” says AARC COO Thomas Kallstrom, BS, RRT, AE-C, FAARC. The patient guide will take various literacy levels into account, enabling just about any patient or family to benefit from the information. Then the third version of the guide will target health professionals outside of respiratory care. “By taking three different approaches, we hope to bring caregivers, patients, and respiratory therapists to a better position of understanding on aerosol therapy devices,” says Kallstrom.

Given the popularity of the original guide — the AARC saw more than a quarter million downloads of the booklet from people all over the world — Kallstrom is confident the three-guide series will make a significant impact on the health and well being of people who depend on aerosol delivery devices to treat their respiratory conditions. “It is with this momentum that we are excited to release this new edition of the first book.”

Assignments for Respiratory Care Managers

While bedside RTs can do a lot on their own to implement the guide in their day-to-day care of patients, it takes a manager to really incorporate the document into official practice. “The AARC has quickly responded to changes in aerosol medicine and kept its members current on the latest information in the profession by providing them with the premier publications and cutting-edge education on aerosol delivery devices,” says Dr. Ari. “A Guide to Aerosol Delivery Devices for Respiratory Therapists, 2nd Edition’ is a way of increasing the power of the respiratory care profession and fostering professional growth and success, not only in your hospital, but across the United States and around the world.” Here are her seven key assignments for managers of respiratory care:

1. Incorporate the information provided in the guide into the policies and procedures of your department. It is essential to involve your therapists in the implementation plan as soon as you can because you need their commitment in order to be successful.

2. Provide in-service education about new policies and procedures on aerosol delivery devices that are based on the information in the guide. Training your respiratory therapists is the key to optimizing aerosol delivery to patients and implementing new policies and procedures successfully at your institution.

3. Incorporate some questions into your training sessions to determine how staff learning is progressing and to identify points that need to be reviewed for better understanding.

4. Schedule time for your therapists to have hands-on experience with all of the aerosol delivery devices used at your institution. This will not only make them feel more comfortable in using each aerosol device but will also improve their techniques and the effectiveness of aerosol therapy.

5. After initial training and hands-on experience, monitor policies and procedures for quality assurance with the aim of optimizing aerosol drug delivery to patients and determining compliance with new procedures on aerosol therapy.

6. The guide provides technique boxes explaining steps for correct use, general steps to avoid reduced or no dosing, troubleshooting, and cleaning procedures for each aerosol delivery device. Instruct your staff to utilize the technique boxes to go over common problems, disadvantages, and errors with each type of aerosol device when educating patients in correct use of their devices.

7. The guide provides valuable information on establishing an infection control management system in aerosol drug delivery and maintaining the occupational health and safety of respiratory therapists. Utilize this section for the well-being of your patients and staff.
“A Guide to Aerosol Delivery Devices for Respiratory Therapists, 2nd Edition,” will be distributed at the AARC Congress in San Antonio this December.

About Author Arzu Ari

Dr. Arzu Ari first became interested in aerosol therapy research as a student at Georgia State University (GSU). “Dr. Joseph L. Rau nurtured an appreciation of aerosol medicine in me and the importance of in vitro testing in providing guidance to clinicians for both device selection and use,” she recalls.

Now a member of the GSU faculty, she’s continuing that interest under the tutelage of James B. Fink, PhD, RRT, FAARC. “Both Joe and Jim have served as role models and mentors in aerosol research, providing constructive feedback on lab methods, study design, publication development, and strategies to help maintain and develop the role of the aerosol laboratory at GSU as a center of excellence. Our goal is to attract graduate students who wish to do their thesis research in aerosol science.”

She learned about plans to update the AARC’s “A Guide to Aerosol Delivery Devices for Respiratory Therapists,” originally authored by Dr. Rau, Dr. Hess, and Timothy Myers during conversations with AARC Executive Director Sam Giordano, MBA, RRT, FAARC, and COO Thomas J. Kallstrom, BS, RRT, AE-C, FAARC, at the 2008 European Respiratory Society Congress in Berlin, Germany. “When I was offered the great honor of updating the guide, I had no doubt that I would finish writing the guide with a great sense of accomplishment as the result of their genuine support and valuable guidance,” says Dr. Ari.

Free CRCEs for AARC Members

AARC members can earn six free CRCE contact hours for reading “A Guide to Aerosol Delivery Devices for Respiratory Therapists, 2nd Edition” and passing an online post test. To access the guide, go to www.aarc.org/education and click on “AARC Continuing Education Courses.” Then scroll down the list to find the guide. Nonmembers can access the booklet and post test for a $15 fee.