

INFECTION CONTROL IN THE HOME

by Jim Stegmaier, RRT-NPS, RPFT, CCM



In home care, the patient's residence is assessed to insure it is a safe environment for the services prescribed by the physician. The patient and/or caregivers are also taught the safe operation of the durable medical equipment used in the care and treatment of the patient. Another important function is teaching patients appropriate infection control measures in the home.

Infection control is so important that it is included in the National Patient Safety Goals Home Care Program through the JCAHO. The World Health Organization (WHO) in cooperation with JCAHO defines patient safety solutions which include infection control measures as "any system design or intervention that has demonstrated the ability to prevent or mitigate patient harm stemming from the process of health care". The aim of the National Patient Safety Goals is to prevent adverse events by using existing knowledge to *prevent* the event from occurring.

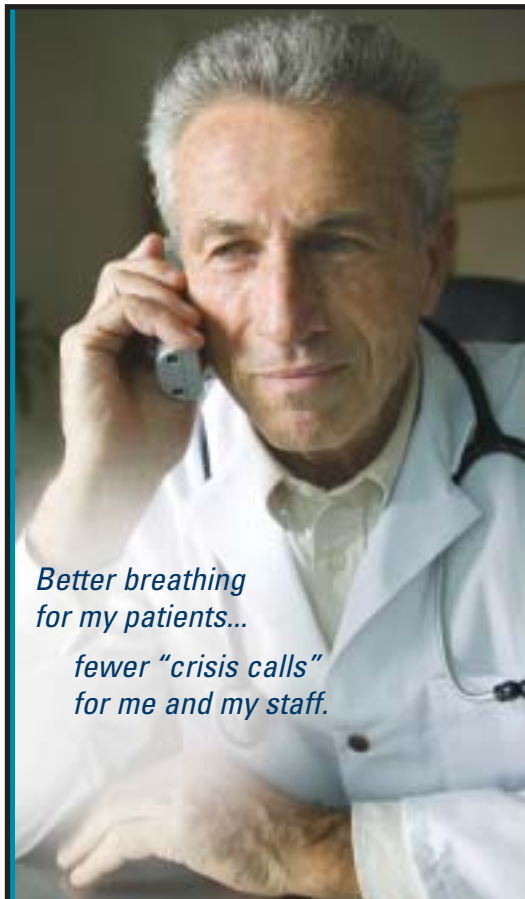
Clinicians have been taught to wash their hands before and after any patient care activities. Any one involved in patient care activities in the home must be taught the proper way to wash their hands before and after handling equipment or providing direct patient care. It is estimated that at any time 1.4 million people world wide are experiencing a hospital acquired infection. There is no data available regarding spread of infections in the home but risk exists where proper prevention is absent. Patients and caregivers should be taught to wash their hands in soapy water for a minimum of fifteen seconds. Hand sanitizers can be used when

hands are not visibly soiled. Patients opting for hand sanitizers should be taught to rub the sanitizer over their entire hands, between their fingers and under their finger nails until dry. Hand washing should not be limited to times when the patient is handling their equipment but put into practice before handling food, after use of the restroom, playing with a family pet or taking out the garbage just to name a few examples.

Patients should be educated as pertains to their need to manage infection control issues in their homes. Gloves should be made available in the patient's residence if a caregiver is expected to be in contact with the patient's bodily fluids when providing care.

The proper care, cleaning and maintenance of respiratory care *equipment* is essential for good infection control as well. All equipment should be cleaned per the equipment manufacturer's guidelines. The patient should understand what products need to be cleaned, and at what intervals. Equipment can be cleaned with commercial disinfectants or with white vinegar and water. The homecare professional should also instruct the patient/family on how to clean and store disposables and the patient should know how frequently respiratory disposable products should be discarded and, of course, how to reorder *new* supplies.

JCAHO's 2008 National Patient Safety Standards for Home Care state that any identified patient-related *continued on next page*



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Tables and Figures. For this project, 596 subjects were randomized into the 5 groups with 371 completing the 12 week study. The placebo group had the largest number of subjects discontinuing the study with $75/125 = 60\%$ discontinued. For efficacy, the improvements in FEV-1 for subjects treated with the combination budesonide/formoterol (group 1) was similar to those treated with budesonide + formoterol (group 4) and significantly greater than those treated with budesonide alone (group 2), formoterol alone (group 3) or placebo (group 5). All treatments were well tolerated with no statistically significant differences between the 5 groups.

The Discussion/Reflections/Future Research offers a comparison with similar research projects and a critique of the research project, suggesting possible modifications that would improve the quality of the research. In this study, formoterol (for use in group 4) was only available as a dry powder inhaler (DPI) in the United States versus the combination budesonide/formoterol (for use in group 1) as a pressurized metered dose inhaler (pMDI). Therefore, subjects in group 1 and group 4 allowed a comparison of efficacy of combination pMDI therapy versus pMDI + DPI monocomponents. There was similar efficacy between these groups.

The Conclusion is the final summary of the research project. This project demonstrated that twice daily budesonide/formoterol as a combination inhaler has similar efficacy and safety compared to the components inhaled separately in adolescents and adults with moderate to severe persistent asthma. Therefore, in this project, the Hypotheses were supported, corresponding to a "yes" answer to both Questions. (Note: When writing the Conclusion, the Hypothesis must be addressed whether supported or not.)

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Conflicts of Interest are listed for all participating in authorship of the project. Conflicts include advisory board membership, ownership of stock, receipt of services, honoraria or gifts from companies related to the project. For this project, Dr. Noonan has served on an advisory board for and received honoraria from AstraZeneca. Dr. Rosenwasser has served as a consultant for and received honoraria from AstraZeneca. Drs. Noonan and Rosenwasser have both received funding from AstraZeneca as investigators in the study. Ms. Martin, Drs. O'Brien and O'Dowd are AstraZeneca employees and own stock in AstraZeneca.

The Bibliography section includes references to support the research as included in the manuscript by reference number. For this project, there were 32 references.

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Clarification Statement:

Articles written by Dr. Herbert Patrick from 2004 to date in 2007 and in the future, were, and will be, presented for educational and training purposes with the emphasis on teaching the scientific method used in clinical research. Actual patient data were not included, nor analyzed. The results and conclusions in each article, as with any educational training scenario, require the reader's clinical judgment to determine actual patient relevance.

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infection which causes unanticipated death or major permanent loss of function is to be treated as a sentinel event. Sentinel events require immediate action including investigating and response from the home care organization. One of the goals of sentinel event reporting is to aid in changing the health care providers' systems and processes so as to reduce the possibility of other future events. Failure on the part of a JCAHO accredited home care provider to report or cooperate in an investigation of a reviewable sentinel event can result in loss of accreditation.

While hand washing and cleaning of home care equipment may seem simple on the surface it can have deadly consequences for patients if not implemented as part of the care plan. An immunosuppressed patient, for example, can be at risk if the appropriate infection control measures are not in place in the residence. The same mentality that has made specific infection control measures common place in health care facilities needs to be applied to home care settings. A positive outcome is the goal of all respiratory care services in the home. Instituting appropriate infection control practices is an essential element towards that goal.

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