Urbanization and Industrialization have caused tremendous increase of respiratory diseases. This is causing huge socioeconomic burden. Care giving is becoming more and more difficult and economically pressing. Hence the idea of managing the respiratory cases at home has evolved. Home management of respiratory patients were first developed in early 1980. Soon abandoned due to high health care cost. More recently usefulness of specialty practice in the home setting is again realized and attempts to implement it are being taken.

Goals of home care are to increase survival, decrease mortality, improve functional quality of life, support independence and self management, encourage positive health behaviors and prompt optimal growth and development of children with lung disease. For terminally ill patients home care goal include physical and psychological comfort and making dying at home comfortable.

Home care is used to reduce total health care cost, primarily by reducing acute care hospital-days.

Home care is the provision of services and equipment in the place of residence of individuals who have needs resulting from acute illness, long term health conditions, permanent disability or terminal illness.

Respiratory disorders that require homecare are: 1. Airway diseases like Asthma, COPD 2. Restrictive respiratory conditions like Asbestosis 3. Neuromuscular Disorders Like Amyotrophic lateral sclerosis 4. Sleep related Breathing Disorders and many other important respiratory disorders like Central Hypoventilation syndrome.

Home respiratory therapy and home infusion companies provide oxygen system, home ventilators, apnea equipment, apnea monitors, nebulizers and nebulized medications. Also employ respiratory therapist or registered nurses to train patients and families.

Home infusion therapy companies provide intravenous medications and fluids, and also employ pharmacists and specialized nurses to manage the cases at home.

Physicians make regular home visits, refer patients to home care agencies and participate in the multidisciplinary team providing home care. Also discharge the service as a medical director of home health and hospice agencies and make visits to supervise home management of mechanical ventilation or other care.

Regular interaction between physicians, the course coordinator and other home care agency personnel is essential to assure appropriate clinical care.

The Global Initiative of Lung Diseases recommends short acting bronchodilators as needed for symptom management, routine use of long acting bronchodilators in moderate to severe chronic obstructive pulmonary disease(COPD), use of short acting beta 2 agonist and anti-cholinergic combinations and annual or bi–annual influenza vaccination. Routine inhaled corticosteroids are recommended only for severe or very severe COPD. GOLD recommends treatment of exacerbation with Bronchodilators, oral or i.v corticosteroids and antibiotics when sputum is purulent or increased in volume.
The National Asthma Education and Prevention recommends inhaled steroid for mild persistent asthma in patients of any age, low to medium dose inhaled steroid plus a long acting beta 2 agonist for moderate and severe persistent asthma; and high dose inhaled steroids plus a long acting beta2 agonist and oral corticosteroids as need for severe persistent asthma. Antibiotics are recommended for treatment of exacerbations only when there is fever and purulent sputum, pneumonia or bacterial sinusitis.

Opiates – oral or parenteral may reduce severe dyspnoea that cannot be controlled by pharmacologic measures.18,19

Non adherence is the greatest problem of home management.20

Poor adherence has been demonstrated with the use of Metered dose inhalers21-24 and loss of correct technique over time has been shown as well.92,93 Incorrect MDI use has been correlated with Asthma instability.27 Introduction of a space device reduces technique problem of inhalation.28 DPI’s are used more correctly.29,30,31 Technique errors are faced more with elderly people.32

Devices must be cleaned properly to reduce accumulation of electrostatic charges that reduces respirable dose. Spacers should be washed with diluted house hold detergent, left unrinsed, allowed drip dry.33

Nebulisers are preferred against MDI’s and DPI’s.104,105

Home nebulizers are potential reservoir of respiratory pathogen mainly S. aureas and Ps. aeruginosa.36,37 The usual recommendation of cleaning include rinsing after each use, disinfecting three times per week, and air drying.38 Washing with house detergent removes S. aureas,39 washing followed by vinegar soak (which removes Ps. aeruginosa) is the accepted practice. For Cystic fibrosis, recommendations were more stringent.40

In-home administration of intravenous antibiotics for patients with cystic fibrosis with chronic Ps. aeruginosa infection, CAP, and COPD exacerbations were done. No difference of outcome was noted between in-hospital and in-home management by intravenous antibiotics.41,42 The recommendation of European consensus conference is that the first dose should be administered in hospital setting under medical supervision.41 Examining cost-effectiveness of outpatient intravenous therapy, United states and Canadian workers recommended initiation of treatment at outpatient setting.43,44,45

Exploring barrier to adherence, providing education and assisting patients to use medications correctly are essential in-home interventions. Involving family care-givers is indicated for cognitively impaired patients.46,47,48

Survival benefits with long term oxygen therapy (LTOT) for patients with COPD with hypoxemia were demonstrated by randomized controlled trials.49,50 The findings were extrapolated to other chronic respiratory diseases.51

Evidence suggests that 30 to 60 % of patients who initially qualify for LTOT no longer qualify when retested 1 to 3 months later. Current recommendations for patients initially prescribed LTOT at hospital, to retest by the physician 90 days after discharge.52

Concentrators, Liquid Oxygen and Compressed Oxygen are used to deliver LTOT.

For patients hypoxic at rest the nocturnal dose was empirically increased by 1 Lit / min.49

All patients with respiratory disease should advised to stop smoking.16,53 Clinical practice guidelines encourage smoking cessation interventions in parents to eliminate second hand smoking in their children.54

Achievement and maintenance of maximum functioning and independence of patients with lung disease is the goal of pulmonary rehabilitation.55

Successful in--home pulmonary rehabilitation has been reported.56,57,58,59,60,61 Supervised out-patient exercise proved to cause greater improvement in exercise tolerance and dyspnoea with activities of daily living (ADLS) than self maintained home exercise.62,63

The prevalence of dyspnoea is high in elderly patients with COPD and is associated with lower self related quality of life64,65 and reduced ability to perform ADL’s.66 Counseling, treatment with antidepressants when indicated, home based or outpatient exercise, relaxation techniques,and formal education classes with other chronic respiratory disease patients may be beneficial.

In pediatric asthma patients depression, anxiety, recent loss, and denial of symptoms are associated with increased mortality and morbidity.67 Asthma self management courses and peer support group can enhance patients’ abilities to manage their child’s asthma and stressors.68

With progressively decreasing pulmonary function, care of chronically ill pulmonary patients shifts towards palliation and preparation for eventual death. They need to consider options for end-life care.69,70 That home care is helpful and cost-effective in achieving stated goals, but no data is available in the literature in support of the statement.71,72,73

In United States and Australia home care delivered by specialist respiratory nurses could not demonstrate any survival benefit at I year follow- up compared with usual care.74,75 or with home health care provided by generalist nurses.74 Spanish LTOT users receiving usual care did not differ in mortality over 1 year.76 Two Hospital at-home service in lieu of acute hospitalization in United Kingdom and Spain
could not demonstrate any difference in mortality between patients treated for acute exacerbation of COPD in hospital and those treated at home.77,78

CONCLUSION

Home care for patients with respiratory diseases is an important need of the day. But studies so far conducted could not demonstrate its cost effectiveness. Yet we must be optimistic and give our best to improve outcomes for respiratory patients receiving home care service.

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