

In-home multi-component, multi-trigger intervention for pediatric patients with asthma

As part of a comprehensive approach to asthma management, Community Care of Wake and Johnston Counties, in partnership with Wake County Human Services and Wake County Environmental Services, conduct in-home multi-trigger, multi-component interventions for pediatric patients with asthma.

Evidence Base

NIH Guidelines of Asthma Management 2007

- Exposure to allergens (Evidence A) or irritants (EPR-2 1997) to which patients are sensitive increases asthma symptoms and exacerbations
- Clinicians should evaluate the potential role of allergens, particularly indoor inhalant allergens (Evidence A), in patients with persistent asthma
- Patients who have asthma at any level of severity should reduce exposure to allergens to which the patient is sensitized
- Reducing exposure to indoor allergens can improve asthma control, a multi-faceted approach is required

Community Preventive Services Task Force 2008 <http://www.thecommunityguide.org/asthma/index.html>

- Due to strong evidence of effectiveness in reducing symptom days, improving quality of life or symptom scores, and in reducing the number of school days missed, the Task Force recommends the use of home-based, multi-trigger, multi-component interventions with an environmental focus for children and adolescents with asthma defined as:
 - Trained personnel making ≥ 1 home visit
 - Focus on reducing exposures to > 1 asthma triggers in the home through environmental assessment, education, and remediation.
 - Most programs include additional components, such as self-management training, social support, and coordinated care

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Home-based, multi-trigger, multi-component interventions with an environmental focus are effective in improving overall quality of life and productivity in children and adolescents with asthma. The effectiveness of these interventions in adults is inconclusive due to the small number of studies and inconsistent results.

Patient Identification

- Hospital Admissions, Emergency Visits, Direct PCP Referrals and Priority Patient List (PPL)

Services Provided

- Home visit by RN Care Manager and Environmental Specialist (0.5 FTE of Wake County Environmental Services Specialist dedicated to this project and funded by Wake County Human Services)
- Assessment of multiple triggers (e.g. Dust mites, Chemical Irritants, Pests, Second Hand Smoke, Mold/Excessive Moisture, Combustion By Products, Warm Blooded Pets)
- Education on general asthma management and specific control of identified triggers
- Follow-up home visit at 6 weeks and 1 year
- Medication reconciliation by network pharmacist
- Written reports to family, PCP, and Landlords (with permission from family)
- Resources for renters' advocacy, if needed

Results

- Data base tracks costs 1 year pre and 1 year post intervention for patients receiving in-home environmental assessments— on average, $> \$700$ decreased cost per patient
- Overall Network Asthma rates have declined from 2003 to 2012
 - Asthma ED rate decreased from 40 visits/1000MM to 17 visits/1000MM
 - Asthma Inpatient rates decreased from 8.3 hospitalizations/1000MM to 1.9 hospitalizations/1000MM