Systematic Review Search Strategy

Concurrent with the review of existing guidelines, a systematic review for recent literature relevant to the scope of the guideline was conducted by a health sciences librarian.

Databases Searched: Cumulative Index to Nursing and Allied Health (CINAHL), Cochrane Controlled Trials (CT), Cochrane Systematic Reviews (SR), Education Resource Information Centre (ERIC)*, Embase, MEDLINE, MEDLINE in Process and PsycINFO.

*Only searched for research question 3

Inclusion Criteria:
- Target Population of clinical condition:
  - Diagnosed with asthma
  - Adults: ($\geq$18 years)
- Target user:
  - Nurses (primary target -the article must be applicable to nursing scope of practice) and may apply to other professionals within the health-care team (secondary target) – Q1 & Q2
  - Nursing educators/administrators – Q3
  - Health-care administrators, health-care organizations and policy makers – Q4
- Intervention(s)
  - Needs to be within the scope of nursing practice (primary focus – targets nursing actions within a variety of health-care settings) and could be within the scope of other health-care professionals (e.g. respiratory therapists)
  - Primary focus on topic area: control of asthma
  - Focuses on secondary and tertiary prevention
- Study Characteristics
  - Published May 2006 to Present (search date August 2015)
  - Published in English
  - Ability to retrieve article
  - Study methodology: meta-analysis, systematic reviews of RCTs and other quantitative study designs, integrative reviews and meta-synthesis of qualitative studies that address the research question(s) and primary quantitative studies post 2011 (i.e. 2012- August 2015)
  - Conducted in any geographic region
- Context/Setting
  - All health settings

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Exclusion Criteria:

- Target Population of clinical condition:
    - o Adults without a diagnosis of asthma
    - o Children with a diagnosis of asthma
- Intervention(s):
    - o Interventions that focus on the primary prevention of asthma
    - o Interventions which target special populations (ex. pregnancy, individuals with asthma and lung cancer)
- Study Characteristics
    - o Dissertations, commentaries, narrative
    - o Non-English studies
    - o Not related to the topic of asthma control
    - o Unpublished (grey literature)

Search Terms

Below are condensed search strategies used for each research question in MEDLINE. Comparable terms were used in all other databases searched.

1. What are the appropriate nursing assessment (initial, follow-up) strategies to use with adults living with asthma to achieve optimal asthma control?

Target User	Target Population	Intervention	Comparison	Outcome
• Nurses and/or regulated health-care professionals (should at minimum include the nurse as part of the inter-professional team)	• Adults (>18 years) living with asthma	• assessment • needs assessment • nursing assessment • symptom assessment (e.g., cough, wheezing: day and night, daily, weekly, monthly and associated impact on activity levels and sleep) • asthma control assessment • validated assessment tools • risk assessment • risk factor(s) • triggers • monitoring • re-assessment • measurement	• None (usual care)	• classification of asthma control • classification of asthma severity • identification of asthma risk factors/complications (e.g. smoking) • identification of changes in symptoms • identification of improvement of asthma control • identification of deterioration of asthma control • health literacy level • identification of skills/abilities to self-manage

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		• evaluation • objective and subjective assessments (e.g. physical, psychological) • physical examination • respiratory assessment • history taking/health history • tests e.g., peak flow, spirometry • assessment of severity: e.g., (mild, moderate, severe) • documentation • education assessment • health literacy assessment • assessment of knowledge, behavior and skills		

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2. *What are the appropriate nursing management strategies to use with adults living with asthma to achieve optimal asthma control?*

Target User	Target Population	Intervention	Comparison	Outcome
• Nurses and/or regulated health-care professionals (should at minimum include the nurse as part of the inter-professional team)	• Adults (>18 years) living with asthma	• Pharmacological (asthma medications: relievers and controllers) • Self-management strategies • Self-monitoring • medication adherence/use • proper technique and use of metered-dose inhaler and inhaler with spacer • asthma education • environmental control measures • environmental monitoring • action plans • follow-up care • referrals • care co-ordination • risk management (managing risk factors that can impact interventions) • behavior change • asthma diaries • infection control • inter-professional team • written action plans • community resources • home visits • house calls • social support/psychosocial support • coaching	• None (usual care)	Primary: • Asthma control • Management and prevention of complications • Frequency of exacerbations • Frequency of symptoms • Emergency room visits • Hospitalization Secondary: • Patient knowledge & skills • Patient behaviors (ex. trigger avoidance, smoking) • Quality of life • Patient Satisfaction

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3. *What education and training do nurses require to assist persons living with asthma achieve optimal asthma control?*

Target User	Population	Intervention	Comparison	Outcome
• Educators, educational administrators and health-care administrators (within the context of asthma education)	• Nursing and regulated health-care professionals (should at minimum include the nurse as part of the inter-professional team) • Undergraduate nursing students	• education • training • teaching • information • instruction • in-service • professional education • continuing education • curriculum • in-service • preceptorship • workshop • professional development • education on asthma control (identify level of) • education on self-management strategies for persons living with asthma • education on patient criteria for patient referral to asthma specialists • education on medications used in asthma care • education on proper medication use and techniques • training on available community	• None	• increased/improved knowledge among health-care providers and students regarding asthma control and asthma care • increased/improved skills among health-care providers working with adults with asthma • effective asthma control assessment • effective management of individuals with asthma to improve asthma control

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		resources for patients living with asthma *Intent of question = content and delivery of education and training*		

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4. *What organization or health system level supports are needed to enable health-care providers to assist persons living with asthma achieve optimal asthma control?*

Target User	Target Population	Intervention	Comparison	Outcome
Health-care organizations, health-care policy makers, health-care administrators, health-care leaders, organizational leaders and governmental agencies (ex. ministry of health and long-term care)	Adults (≥18 years) living with asthma	• Communication strategies & systems • Policy & procedures • Strategy • Model of Care delivery • Supports for ongoing training and education • Supports for client-family education • Quality improvement indicators or metrics • Monitoring and evaluation parameters: client, team, organization or system level • Funding • Government programs/initiatives • Decision support techniques • Decision trees • Facilitating *access* to specialty services/clinics in community/primary care settings for assessment and management of asthma • Facilitating *access to certified asthma educators* • Standardized *use of evidence based practice* for asthma treatment and	• None	Primary: • Organizational support • Optimal assessment and management of asthma • Resources to support health-care providers in the assessment and management of asthma • Policy development/implementation • Health-care providers are supported in evidence based practices to optimize asthma care Secondary Outcomes • Cost-effective care • Reduced hospitalization

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		management (e.g., action plans for asthma care, algorithms, care pathways, guidelines) • Facilitating access to *standardized evidence based educational materials* & resources for client & nurse education (e.g., how to use spacers, peak flow monitoring equipment) • *List of community/primary care resources* available to nurses/health-care providers to refer patients for specialty services		

Hand Search

Panel members were asked to review personal libraries to identify key articles not found through the above search strategies. Articles identified by panel members were included in the search results if two nursing research associates independently determined the articles had not been identified by the literature search and met the inclusion criteria.