**GUIDELINE-DRIVEN CARE**

Louis-Philippe Boulet
MD FRCP FCCP

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**Guidelines-driven care**

**Learning Objectives:**

- Discuss the grading system and review process used to develop the EPR-3 and GINA guideline recommendations
- Some key-recommendations of current asthma guidelines
- Develop strategies for guideline dissemination to health care professionals and translation to patients
- Explore clinical decision-making when non-guideline based care is indicated

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**Why are guidelines developed?**

- Research
- Discovery
- Education
- Improved care

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**The AIRE Study: data analysis of 753 European children with asthma**


- Analysis of the paediatric data from the study “Asthma insights and reality in Europe”: 73,880 households in 7 countries
- 753 children < 16 y
- Diurnal symptoms: 38.2%
- Sleep disturbance ≥ once a week: 28%
- Limitation of sporting activities: 29.5%
- Absence from school: 42.7% in the past year
- 26% of children used ICS while 45.9% had persistent asthma
- 61% of parents of children with severe persistent asthma considered asthma to be well controlled.

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**Consequences of poor asthma control on health care use**

- Poorly controlled asthma (n=566): 78% vs 24%
- Controlled asthma (n=435): 78% vs 22%

- Chapman & Ernst Can Resp J 2001

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11-11-28
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EPR-3 PROCESS

- In response to a recommendation by the National Asthma Education and Prevention Program (NAEPP) Coordinating Committee, an Expert Panel was convened by the NHLBI to update the asthma guidelines
- In addition to using a methodologist to guide preparation of the Evidence Tables, several layers of external content review were also embedded into the guidelines development process
- In addition to review by consultants, an early draft of the guidelines was circulated to a panel of guidelines end-users for review and feedback on ways to enhance guidelines utilization
- Finally, a draft of the guidelines was posted on the NHLBI Web Site for review and comment by the NAEPP Coordinating Committee and to allow opportunity for public review and comment before the guidelines were finalized and released.

EPR-3 PROCESS

The steps used to develop this report included:

1. completing a comprehensive search of the literature;
2. conducting an in-depth review of relevant abstracts and articles;
3. preparing evidence tables to assess the weight of current evidence with respect to past recommendations and new and unresolved issues;
4. conducting thoughtful discussion and interpretation of findings;
5. ranking strength of evidence underlying the current recommendations that are made;
6. updating text, tables, figures, and references of the existing guidelines with new findings from the evidence review;
7. circulating a draft of the updated guidelines through several layers of external review, as well as posting it on the NHLBI Web site for review and comment by the public and the NAEPP CC; and
8. preparing a final report based on consideration of comments raised in the review cycle.
The Global Initiative for Asthma

Scientific Committee

- Mark Fitzgerald, Chair
- Neil Barnes
- Eric Bateman
- Allan Becker
- Jeffrey M. Drazen
- Robert F. Lemanske
- Paul O'Byrne
- Ken Ohta
- Soren Erik Pedersen
- Emilio Pizzichini
- Helen K. Reddel
- Sean D. Sullivan
- Sally E. Wenzel
- Heather J. Zar

GINA D & I Committee

- Louis-Philippe Boulet, MD, Canada, Chair
- Eric Bateman
- Mark Fitzgerald
- Mark Levy

GINA Assembly

- GINA Assembly members from 45 countries (names are listed on website: www.ginasthma.org)

GRADE

Strength of Evidence and Grades of Recommendations

- Grades of evidence:
  - Grade A: High-quality evidence; consistent evidence from multiple randomized controlled trials
  - Grade B: Moderate-quality evidence; inconsistent evidence from multiple randomized controlled trials
  - Grade C: Low-quality evidence

- Grades of recommendation:
  - Grade 1: Strong recommendation
  - Grade 2: Weak recommendation

Canadian Respiratory Guidelines

- To address possible local biases in guidelines adaptation, the ADAPTE approach offers a generic adaptation process to foster high-quality CPGs
- The ADAPTE approach recommends the use of the Appraisal of Guidelines Research & Evaluation (AGREE) instrument to assess quality of CPGs. The AGREE instrument does not assess the quality of the evidence.
- Once the decisions about the quality of the CRGs are made, the GRADE software helps the Committee to present the key results in a table format used in Cochrane systematic reviews and guides users through the process of grading the quality of the evidence. (www.gradeworkinggroup.org)

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Clinical Control of Asthma

- No (or minimal)* daytime symptoms
- No limitations of activity
- No nocturnal symptoms
- No (or minimal) need for rescue medication
- Normal lung function
- No exacerbations

* Minimal = twice or less per week
Asthma Management and Prevention Program: Five Components

1. Develop Patient/Doctor Partnership
2. Identify and Reduce Exposure to Risk Factors
3. Assess, Treat and Monitor Asthma
4. Manage Asthma Exacerbations
5. Special Considerations

Asthma Management and Prevention Program

Goals of Long-term Management

- Achieve and maintain control of symptoms
- Maintain normal activity levels, including exercise
- Maintain pulmonary function as close to normal levels as possible
- Prevent asthma exacerbations
- Avoid adverse effects from asthma medications
- Prevent asthma mortality

Asthma Management and Prevention Program

Identify and Reduce Exposure to Risk Factors

- Measures to prevent the development of asthma, and asthma exacerbations by avoiding or reducing exposure to risk factors should be implemented wherever possible.
- Asthma exacerbations may be caused by a variety of risk factors – allergens, viral infections, pollutants and drugs.
- Reducing exposure to some categories of risk factors improves the control of asthma and reduces med. needs.
  - Reduce exposure to indoor allergens
  - Avoid tobacco smoke
  - Avoid vehicle emission
  - Identify irritants in the workplace
  - Explore role of infections on asthma development

Asthma Management and Prevention Program

Develop Patient/Doctor Partnership

Guidelines on asthma management should be available but adapted and adopted for local use by local planning teams

- Clear communication between health care professionals and asthma patients is key to enhancing compliance

- Educate continually
- Include the family
- Provide information about asthma
- Provide training on self-management skills
- Emphasize a partnership among health care providers, the patient, and the patients family

Asthma Management and Prevention Program

Assess, Treat and Monitor Asthma

The goal of asthma treatment:
- "to achieve and maintain clinical control"
- "can be achieved in a majority of patients"
- "a pharmacologic intervention strategy should be developed in partnership between the patient/family and the health care professional"
**STEPWISE APPROACH FOR MANAGING ASTHMA IN YOUTHS ≥12 YEARS OF AGE AND ADULTS**

NAEPP 2007

**LEVEL OF CONTROL**
- controlled
- partly controlled
- uncontrolled
- exacerbation

**TREATMENT OF ACTION**
- maintain and find lowest controlling step
- consider stepping up to gain control
- step up until controlled
- treat as exacerbation

**LEVEL OF CONTROL** vs. **TREATMENT STEPS**

**Asthma control (GINA)**

- Level of asthma control
- Current treatment
- Pharmacological properties and availability of the various forms of asthma treatment
- Economic considerations

**Asthma Management and Prevention Program**

Assess, Treat and Monitor Asthma

The choice of treatment should be guided by:
- Level of asthma control
- Current treatment
- Pharmacological properties and availability of the various forms of asthma treatment
- Economic considerations
Treating to Maintain Asthma Control

Stepping up treatment in response to loss of control

- Rapid-onset, short-acting or long-acting inhaled β2-agonist bronchodilators provide temporary relief.
- Need for repeated dosing over more than one/two days signals need for possible increase in controller therapy.
- Use of a combination rapid and long-acting inhaled β2-agonist (e.g., formoterol) and an inhaled GCS (e.g., budesonide) in a single inhaler both as a controller and reliever is effective in maintaining a high level of asthma control and reduces exacerbations (Evidence A).
- Doubling the dose of inhaled glucocorticosteroids is not effective, and is not recommended (Evidence A).

Guidelines-driven care

Learning Objectives:

- Discuss the grading system and review process used to develop the EPR-3 and GINA guideline recommendations.
- Some key-recommendations of current asthma guidelines.
- Develop strategies for guideline dissemination to health care professionals and translation to patients.
- Explore clinical decision-making when non-guideline based care is indicated.

Knowledge and use of guidelines

2002 Release of NZ guidelines for Dx and Tx of adult asthma
2 wks later Fax-back questionnaire to all NZ GPs (n=729)
Response rate : 422 (58%)

<table>
<thead>
<tr>
<th>Have you?</th>
<th>422</th>
</tr>
</thead>
<tbody>
<tr>
<td>Read them in detail?</td>
<td>51 (12%)</td>
</tr>
<tr>
<td>Put in future reading pile?</td>
<td>84 (20%)</td>
</tr>
<tr>
<td>Skim-read them?</td>
<td>133 (32%)</td>
</tr>
<tr>
<td>Not read them at all and have no intention of reading them?</td>
<td>24 (6%)</td>
</tr>
<tr>
<td>Missing</td>
<td>130 (30%)</td>
</tr>
</tbody>
</table>


- 309 comparisons derived from 235 studies.
- The overall quality of the studies was poor.
- The majority of comparisons (86.6%) observed improvements in care.
- The median absolute improvement in performance across interventions ranged from
  - 14.1% for reminders,
  - 8.1% for dissemination of educational materials,
  - 7.0% for audit and feedback,
  - 6.0% for multifaceted interventions involving educational outreach.

How to improve implementation of guidelines recommendations?

Research findings

How to improve translation of guidelines

- At the level of caregivers...
Do practices comply with key recommendations of the British Asthma Guideline? If not, why not?

*Sharon Wiener-Ogilvie*, Hilary Remnok, Gare Hybu, Azza Shokri, Martin R Patterson, John Critch

Primary Care Respiratory Journal 2009

<table>
<thead>
<tr>
<th>Recommendation</th>
<th>Aware of it ?</th>
<th>Useful ?</th>
<th>Audit %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objective tests to confirm asthma</td>
<td>95.3%</td>
<td>72.6%</td>
<td>67.0%</td>
</tr>
<tr>
<td>Trial of other meds before increasing the dose of ICS over 800 mcg/day (adults)</td>
<td>100%</td>
<td>85.9%</td>
<td>67.1%</td>
</tr>
<tr>
<td>Self-management education offered, including a written action plan</td>
<td>98.4%</td>
<td>79.7%</td>
<td>22.8%</td>
</tr>
</tbody>
</table>

Ian Graham, 2005

How to improve the situation?
- Shorter, more user-friendly guidelines
- More effective methods of guideline D&I
- Provide support to D&I (tools)
- Team work
- System changes
- Provide resources
- Integration of recommendations to electronic patient chart
- Patients’ involvement

GINA GUIDELINES

DEVELOPMENT OF AN IMPLEMENTATION PLAN

Assess needs and current environment
Collect data on asthma outcomes (hospitalizations, ED visits, general practice acute visits, etc...)
Identify stakeholders and motivation to contribute
Develop a working group (including representatives of the targeted population)
Examine possible implementation strategies and priorities
Establish goals, evaluate resources required and distribute tasks
Perform strategy (ideally with an initial pilot project)
Evaluate how the strategy was successful (reassess changes in asthma outcomes)
Determine if strategy should be pursued/improved
Consider how strategy can be further disseminated and sustained

Barriers to Guidelines Implementation: Practice Environment

<table>
<thead>
<tr>
<th>Structure Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work pressure</td>
</tr>
<tr>
<td>Information overload</td>
</tr>
<tr>
<td>Competing demands/time</td>
</tr>
<tr>
<td>Chaotic environment</td>
</tr>
<tr>
<td>Human resources</td>
</tr>
<tr>
<td>Decision-making</td>
</tr>
<tr>
<td>Policies, rules, laws</td>
</tr>
<tr>
<td>Available technology</td>
</tr>
<tr>
<td>Equipment, testing</td>
</tr>
<tr>
<td>Physical layout</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Culture/social Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture &amp; belief systems</td>
</tr>
<tr>
<td>Norms, institutionalized habits</td>
</tr>
<tr>
<td>Leadership</td>
</tr>
<tr>
<td>Politics &amp; personalities</td>
</tr>
<tr>
<td>Peer influence</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Other Factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patients/Consumers</td>
</tr>
<tr>
<td>Case mix, behavior, attitudes, preferences &amp; demands</td>
</tr>
<tr>
<td>Economic Considerations</td>
</tr>
<tr>
<td>Resources, remuneration, funding systems</td>
</tr>
<tr>
<td>Medical/Legal Issues</td>
</tr>
<tr>
<td>Other Organizational/System b Factors</td>
</tr>
</tbody>
</table>

Knowledge to Action: From: Graham et al: Lost in Knowledge Translation: Time for a Map?

Effectiveness of Knowledge Translation Interventions

Generally Effective
- Educational outreach visits
- Reminders
- Interactive educational meetings
- Multifaceted interventions including two or more of:
  - Audit and feedback
  - Reminders
  - Local consensus processes
  - Social marketing

Bero et al. 1998, Grimshaw et al. 2001
How to improve translation of guidelines

- At the level of patients and their family...

How to improve guidelines recommendations uptake by patients

- Patient education
- Improve monitoring of asthma control
- Promote adherence to treatment
- Shared-decision making
- Adapt recommendations to patient’s characteristics and background
- Regular review/follow-up

Patient education

- To know
- To understand
- To agree
- To be motivated
- To have tools and means to apply self-management skills
- To be supported and followed

We may have the best medical care... if patients do not apply recommendations properly... there will be no improvement of outcomes...

Effects of asthma self-management

- Reduced
  - hospitalisations
  - emergency room visits
  - unscheduled visits to the doctor
  - days off work or school
  - nocturnal asthma
- Improved quality of life
- Measures of lung function mostly unchanged

Information only not effective. Gibson 2002

Effects of asthma action plans

- Reduced
  - hospitalisations
  - emergency room visits
  - unscheduled visits to the doctor
  - days off work or school
  - nocturnal asthma
- Improved quality of life
- Measures of lung function mostly unchanged

Information only not effective. Gibson 2002

A Structured Education Program Reduces Emergency Department Visits for Asthma

- Basic notions
- Inhaler technique
- Action Plan
- Reference to an asthma educator

C: control group
SE: structured education
LE: limited education

Cote J. Am J Respir Crit Care Med 2001;163:1415
Influence of action plans on asthma-related morbidity

<table>
<thead>
<tr>
<th>Action plan component</th>
<th>RR [95% CI (fixed)]</th>
<th>Total [95% CI (fixed)]</th>
</tr>
</thead>
<tbody>
<tr>
<td>% predicted PEF</td>
<td>0.44 (0.36, 0.54)</td>
<td>0.44 (0.36, 0.54)</td>
</tr>
<tr>
<td>Personal best PEF</td>
<td>0.66 (0.49, 0.91)</td>
<td>0.66 (0.49, 0.91)</td>
</tr>
<tr>
<td>4 action points</td>
<td>0.65 (0.46, 0.88)</td>
<td>0.65 (0.46, 0.88)</td>
</tr>
<tr>
<td>&lt;4 action points</td>
<td>0.23 (0.07, 0.73)</td>
<td>0.23 (0.07, 0.73)</td>
</tr>
<tr>
<td>ICS and OCS</td>
<td>0.59 (0.44, 0.78)</td>
<td>0.59 (0.44, 0.78)</td>
</tr>
</tbody>
</table>

Figure 1 Comparison of the effects of action plan components on hospital admissions for asthma. ICS, inhaled corticosteroid; OCS, oral corticosteroid.

Salzburg statement on shared decision making

We call on clinicians to:
- Recognise that they have an ethical imperative to share important decisions with patients
- Stimulate a two way flow of information and encourage patients to ask questions, explain their circumstances, and express their preferences
- Provide accurate information about options and the uncertainties, benefits, and harms of treatment in line with best practice for risk communication
- Tailor information to individual patient needs and allow them sufficient time to consider their options
- Acknowledge that most decisions do not have to be taken immediately, and give patients and their families the resources and help to reach decisions

We call on patients to:
- Speak up about their concerns, questions, and what’s important to them
- Recognise that they have a right to be equal participants in their care
- Seek and use high quality health information

We call on policy makers to:
- Adopt policies that encourage shared decision making, including its measurement, as a stimulus for improvement
- Amend informed consent laws to support the development of skills and tools for shared decision making

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Explore clinical decision-making when non-guideline based care is indicated

1) For many recommendations, there is insufficient or minimal evidence
2) Some recommendations do not apply to all patients
3) The final decision should be made by the clinician in light of each individual case’s characteristics

Should we always use guidelines recommendations in all patients?
- Guidelines remain “a general guide”
- Evidence is gathered from well standardized studies in specific sub-populations
- We need more detailed guidelines according to the asthma phenotype (e.g. smoker with asthma, obese patient...)
- Recommendations to be adapted according to:
  - Characteristics of the disease
  - Preferences & background of the patient
  - Contra-indications for some treatments
  - Available resources
Conclusions

- CPGs are useful tools for optimizing asthma treatment
- Guidelines such as the NAEP and Global Initiative for Asthma reports offer international standards for the management of asthma – to be adapted in each country
- Efforts should be made to help implement recommendations
- The GINA 5-year asthma control challenge is a major world-wide initiative to help reduce asthma hospitalisations

Additional slides

- ASThma Control Challenge
  Cut hospitalisations 50% by 2015!

GINA challenges health care providers worldwide to cut asthma-related hospitalizations in half over the next 5 years

Why target hospitalization?

- **Expensive**: a major portion of the financial burden of asthma for individual families and for societies at large
- **Measurable**: a clear outcome that is comparable across many different socioeconomic conditions and health care systems. Many countries already collect data on asthma hospitalizations.
- **Preventable**: The vast majority of emergency visits and hospital admissions caused by asthma can be avoided if patients avoid triggers whenever possible and know how to use medication when their symptoms increase.

How to do it?

**Form a group**
At the national or local level, bring together stakeholders including public health authorities, government representatives, NGOs, respiratory societies, and others to participate in the Asthma Control Challenge.

**Determine the baseline**
Find the number of hospitalizations caused by asthma in 2010 or 2011. Use national or local registries, or make educated estimates. Implement more effective data recording practices if necessary.
How to do it?

Make a plan
Focus on asthma control and preventing asthma exacerbations through appropriate care

Carry it out
With local specialists and opinion leaders, create an effective network with a motivated group of general practitioners, nurses, pharmacists, and other health educators

Track the results
Organize follow-up of hospitalizations caused by asthma and collect yearly numbers to be analyzed for further actions and benchmarking.

How GINA will help

The GINA Report, *Global Strategy for the Diagnosis and Management of Asthma*, offers an evidence-based program for achieving, monitoring, and maintaining asthma control.

- Data regarding the burden of asthma worldwide.
- Guidance on how to collect data and measure hospitalizations at the local/national level, to make sure that all participants are collecting comparable data.

How GINA will help

- Evidence-based “Guide on How to Implement GINA Guidelines” and other guideline implementation tools
- Asthma Care Map: Treatment flow charts to present individualized management strategies in a variety of settings with a framework to evaluate effectiveness
- Models of asthma guideline implementation initiatives
- Suggestions of activities for World Asthma Day, to increase awareness of asthma and the 5-year Asthma Control Campaign

Which groups should be targeted?

- Specialists
- General Practitioners
- Allied Health Professionals
- Patients and their family
- Policy Makers and Health Administrators
- General Public