Table E1. Categorization of questionnaire outcomes by 4 key components of the EPR-3 guidelines

|  |  |
| --- | --- |
| **1. Assessment and monitoring of asthma severity and control** | **Question** |
| **Assessment of impairment frequency**  For what percentage of asthma visits do you document overall asthma control?  For what percentage of asthma visits do you ask about patient’s ability to engage daily activities?  For what percentage of asthma visits do you ask about frequency of daytime symptoms?  For what percentage of asthma visits do you ask about frequency of nighttime awakening?  For what percentage of asthma visits do you ask about patient’s perception of symptom control?  For what percentage of asthma visits do you use control assessment tool (e.g., Asthma Control Test, Asthma Control Questionnaire, Asthma Therapy Assessment Questionnaire, etc.)  For what percentage of asthma visits do you ask about frequency of rescue inhaler use (e.g., Albuterol)? | 7  8a  8b  8c  8d  8e    8f |
| **Assessment of risk frequency**  For what percentage of asthma visits do you ask about frequency of emergency department visits or urgent care visits for asthma?  For what percentage of asthma visits do you ask about frequency of exacerbations requiring oral steroids? | 8h      8g |
| **Objective assessment and monitoring**  For what percentage of asthma visits do you ask about patient’s peak flow results from home?  For what percentage of asthma visits do you perform spirometry (among those who can perform spirometry)? | 8i  8j |
| **Ongoing monitoring frequency**  For what percentage of asthma visits do you assess daily use of controller medication (e.g., ICS) for patients with severe asthma?  For what percentage of asthma visits do you perform repeated assessment of inhaler technique? | 9g    9h |

|  |  |
| --- | --- |
| **2. Patient education** |  |
| **Asthma action plans**  For what percentage of asthma visits do you provide a new or review an existing written asthma action plan outlining medications, triggers, and when to seek emergency care? | 9a |
| **Asthma therapies**  How often do you encounter patient misunderstandings about medication risks or side effects or belief in myths (e.g., muscle development, addiction)?  How often do you encounter patient concerns about short-term side effects of inhaled corticosteroids (e.g., thrush)?  How often do you encounter patient concerns about long-term side effects of inhaled corticosteroids (e.g., delayed growth in children)?  How often do you encounter confusion between symptom relief medications and daily controller medications? | 13a    13b      13c      13d |
| **3. Control of environmental factors** |  |
| For what percentage of asthma visits do you assess triggers at home (e.g., pets, mold, tobacco smoke)?  For what percentage of asthma visits do you assess triggers at school or workplace (e.g., mold, dust, exhaust, fumes, chemicals)?  For what percentage of asthma visits do you test allergic sensitivity via skin or allergen-specific IgE (e.g., RAST) testing?  For the following 7 questions, do you make recommendations for 1) Most asthma patients, 2) Only patients with sensitivity to this trigger, or 3) Rarely or never recommend  Do you recommend using dust mite control measures (e.g., mattress covers)?  Do you recommend controlling household mold and pests (e.g., cockroaches)?  Do you recommend removing pets from home?  Do you recommend avoiding pollen (e.g., limit outdoor time, close windows)?  Do you recommend avoiding air pollution (e.g., ozone warnings)?  Do you recommend making changes to cooking appliances (e.g., exhaust vents)?  Do you recommend avoiding second-hand smoke? | 9b  9c, 9e  9f      10a  10b    10c    10d    10e    10f    10g |
| **4. Pharmacologic treatment** |  |
| Do you use the following medications for: 1) Symptom relief/acute exacerbation, 2) Daily long-term control, 3) Add on daily control therapy, 4) Difficult to control asthma, 5) Never use  Short acting beta agonists  Inhaled corticosteroids  Long acting beta agonists (LABA)  Combination medication that includes both LABA and ICS  Leukotrine modifiers  Anticholinergics  Methylxanthines  Omalizumab  Short course of oral/injectable corticosteroids  Long course of oral corticosteroids (> 10 days) | 11a  11b  11c  11d  11e  11f  11g  11h  11i  11j |

NOTE: \* A) Adherence categories: Almost always (75%-100%), Often (25%-75%), Sometimes (1%-24%), Never (0%)

\* 2012 Asthma Supplement Questionnaire is available at: <https://www.cdc.gov/nchs/data/ahcd/2012_NAMCS_Asthma_Supplement.pdf>

Table E2. Agreement and perceived competency with the EPR-3 guidelines

|  |  |
| --- | --- |
| **A. Assessment of agreement** | **Question** |
| Spirometry is an essential component of a clinical evaluation for asthma diagnosis in patients able to perform it (please do not include peak flow monitoring as spirometry)  Inhaled corticosteroids are the most effective medications to control persistent asthma  Asthma action plans are an effective tool to guide patient self-management efforts  Patients with persistent asthma should have follow-up visits at least every 6 months to assess control  Assessing asthma severity is necessary to determine initial therapy | 5a      5b    5c  5d    5e |
| **B. Assessment of perceived competency** |  |
| Using spirometry data as a component of a clinical evaluation for an asthma diagnosis in patients  Assessing underlying asthma severity using standard criteria  Prescribing the appropriate dose of inhaled corticosteroids  Evaluating the need to step up controller therapy  Evaluating the need to step down controller therapy | 6a  6b  6c  6d  6e |

NOTE: \* A) Agreement categories: Strongly agree, agree, neutral, disagree, strongly disagree; B) Competency categories: Very confident, somewhat confident, not at all confident, do not perform

\*\* 2012 Asthma Supplement Questionnaire is available at: <https://www.cdc.gov/nchs/data/ahcd/2012_NAMCS_Asthma_Supplement.pdf>

Table E3. Adjusted oddsa and 95% confidence intervals of clinician-reported agreement and perceived confidence with EPR-3 guideline recommendations, 2012

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
|  | Primary care clinician | | | Asthma specialists | | |
| Guideline recommendation | n | Strong Agreement (versus other) | High Confidence (versus. other) | n | Strong Agreement (versus other) | High Confidence (versus. other) |
| Provide written asthma action plan | 1391 | 1.8 (0.9, 3.4) | 3.7 (2.0, 6.9)\* | 233 | 1.7 (0.8, 3.4) | 1.0 (0.4, 2.4) |
| **Assessment of impairment frequency** |  |  |  |  |  |  |
| Document asthma control | 1321 | 1.4 (0.8, 2.5) | 2.0 (1.2, 3.3)\* | 226 | 0.7 (0.2, 1.9) | 1.6 (0.6, 4.1) |
| Ask about ability to engage in normal activities | 1392 | 1.5 (0.8, 2.8) | 2.8 (1.6, 4.8)\* | 232 | 1.2 (0.4, 3.8) | 1.6 (0.6, 4.6) |
| Ask about frequency of daytime symptoms | 1398 | 1.4 (0.7, 2.5) | 3.3 (1.9, 6.0)\* | 233 | 2.0 (0.3, 11.7) | 3.7 (1.0, 13.9) |
| Ask about frequency of nighttime awakening | 1396 | 1.2 (0.7, 2.2) | 2.4 (1.4, 4.1)\* | 233 | 0.7 (0.3, 2.0) | 2.4 (0.8, 6.9) |
| Ask about perception of control | 1395 | 0.8 (0.5, 1.4) | 2.2 (1.3, 3.8)\* | 233 | 1.8 (0.7, 4.6) | 1.2 (0.5, 3.1) |
| Use control assessment tool | 1395 | 1.6 (0.8, 3.1) | 1.8 (1.0, 3.4) | 233 | 1.0 (0.5, 2.1) | 1.4 (0.6, 3.2) |
| Ask about frequency rescue inhalerb | 1398 | 2.5 (1.4, 4.7)\* | 3.6 (2.0, 6.7)\* | 233 | 0.5 (0.1, 2.2) | 2.5 (0.6, 10.8) |
| **Assessment of risk frequency** |  |  |  |  |  |  |
| Ask about ED visit frequency | 1398 | 1.1 (0.6, 2.0) | 3.9 (2.3, 6.5)\* | 232 | 0.9 (0.3, 2.9) | 2.8 (1.0, 7.8) |
| Ask about oral steroid frequency | 1396 | 1.0 (0.5, 1.8) | 5.7 (3.3, 9.7)\* | 232 | 0.6 (0.2, 2.6) | 1.2 (0.3, 4.2) |
| **Objective assessment and monitoring** |  |  |  |  |  |  |
| Ask about peak flow resultsc | 1396 | 2.2 (1.1, 4.6)\* | 3.4 (1.7, 7.0)\* | 231 | 1.6 (0.5, 4.9) | 2.7 (0.8, 9.0) |
| Perform spirometry | 1378 | 2.2 (1.0, 5.0) | 6.6 (2.9, 15.2)\* | 232 | 1.0 (0.5, 2.1) | 4.0 (1.8, 8.7)\* |
| **Ongoing monitoring frequency** |  |  |  |  |  |  |
| Assess daily controller use for persistent asthma | 1392 | 1.8 (1.1, 3.1)\* | 2.8 (1.5, 4.9)\* | 232 | 0.7 (0.2, 2.6) | 2.2 (0.7, 7.0) |
| Repeated assessment of inhaler technique | 1393 | 1.4 (0.7, 2.8) | 3.5 (1.9, 6.3)\* | 233 | 1.6 (0.8, 3.2) | 0.8 (0.4, 1.9) |
| **Environmental assessment** |  |  |  |  |  |  |
| Assess home triggers | 1394 | 1.5 (0.9, 2.5) | 3.7 (2.1, 6.3)\* | 233 | 0.7 (0.3, 1.6) | 1.9 (0.9, 4.4) |
| Assess school or workplace triggers | 1408 | 1.5 (0.9, 2.6) | 3.9 (2.2, 6.8)\* | 233 | 0.7 (0.3, 1.6) | 1.6 (0.7, 4.1) |
| Test for allergic sensitivity | 1383 | 1.1 (0.4, 3.4) | 6.9 (2.7, 17.9)\* | 233 | 1.2 (0.5, 2.6) | 2.1 (1.0, 4.5)\* |

\* *P*<.05. a. Controlled for clinician age, clinician sex, region and patient age group

a. Adjusted for clinician age, clinician sex, region, patient age group. Specialist model for assessment of frequency of rescue inhaler use omits clinician sex. Specialist model for assessing peak flow results omits patient age.

b. Asthma specialist model controlled for clinician age, region and patient age group due to zero cells for clinician sex

c. Asthma specialist model controlled for clinician age, clinician sex and region due to zero cells for patient age group

Source: NCHS, National Asthma Survey of Physicians, 2012.

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