**Asthma Control – Clinical decision support app for care provider at the point of care:**

**REQUIREMENTS (QUESTIONS, RECOMMENDED ACTIONS AND PROCEDURES TO ASSESS THE ASTHMA CONTROL) BASED ON THE EPR-3 GUIDELINES**

* **0-4 YEARS OLD**

1. **INPUT FORM (ASTHMA CONTROL ASSESSMENT)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **QUESTIONS NUMBER** | **QUESTIONS** | **ANSWER TYPES** | **ANSWER CHOICES** | **ANSWER CHOICE NUMBER** | **USE TO EVALUATE ASTHMA CONTROL?** | **DOMAIN OF CONTROL** |
| **Q1** | Asthma symptoms in previous 2 – 4 weeks | Multiple choice - one answer | ≤2 days /week | A1 | Yes | Impairment |
| >2 days/week | A2 |
| Throughout the day | A3 |
| **Q2** | Night time awakenings in previous 2- 4 weeks | Multiple choice - one answer | ≤ 1x/month | A1 | Yes | Impairment |
| > 1x/month | A2 |
| ≥ 1x/week | A3 |
| **Q3** | Interference with normal activity in previous 2-4 weeks | Multiple choice - one answer | None | A1 | Yes | Impairment |
| Some limitation | A2 |
| Extremely limited | A3 |
| **Q4** | Short-acting  beta2-agonist use for symptom control in previous 2-4 weeks (not prevention of exercise-induced bronchospasm) | Multiple choice - one answer | ≤ 2 days/week | A1 | Yes | Impairment |
| >2 days/week | A2 |
| Several times per day | A3 |
| **Q5** | Exacerbations requiring oral systemic corticosteroids | Multiple choice - one answer | 0-1/ year | A1 | Yes | Risk |
| 2 - 3 / year | A2 |
| >3 / year | A3 |

1. **WORKFLOW TO FOLLOW TO ASSESS THE ASTHMA CONTROL LEVEL**

Please refer to the 1-page document (Figure 4-3a on page 309) taken from the EPR-3 guidelines and sent along with this document to know the conditions under which the asthma control level for children age 0- 4 years old is assessed as “Well Controlled”, “Not Well Controlled” or “Very Poorly Controlled”.

**Attempt of logic to use to assess asthma control:**

**For Impairment domain:**

**If** (Q1 or Q2 or Q3 or Q4) answers are A3 **then**

Asthma Control assessment (Impairment domain) is **“Very Poorly Controlled”**

**Else**

**If** (Q1 or Q2 or Q3 or Q4) answers are A2 **then**

Asthma Control assessment (Impairment domain) is **“Not Well Controlled”**

**Else**

**If** (Q1 and Q2 and Q3 and Q4) answers are A1 then

Asthma Control assessment (Impairment domain) is **“Well Controlled”**

**Note**

Impairment domain is “well controlled” only when Q1=A1 and Q2=A1 and Q3=A1 and Q4= A1

**For Risk domain:**

**If** Q5 answer is A3 **then**

Asthma Control assessment (Risk domain) is **“Very Poorly Controlled”**

**Else**

**If** Q5 answer is A2 **then**

Asthma Control assessment (Risk domain) is **“Not Well Controlled”**

**else**

Asthma Control assessment (Risk domain) is **“Well Controlled”**

1. **OUTPUT ( ASTHMA CONTROL LEVEL ASSESSED AND RECOMMENDED ACTION)**

After that the input form has been completed and the answers to the questions in the form assessed following the EPR- 3 guidelines, a screen should display to the user with the following message:

* **Asthma Control Level (Impairment Domain):** “Well Controlled” or “Not Well Controlled” or “Very Poorly Controlled”

**Recommended Action for treatment**

**Note:** Please look at the **recommended action for treatment** details in the 1-page document (Figure 4-3a on Page 309) corresponding to the asthma control level resulting from the assessment and put it here as recommended action.

* **Asthma Control Level (Risk Domain):** “Well Controlled” or “Not Well Controlled” or Very Poorly Controlled”

**Recommended Action for treatment**

**Note:** Please look at the **recommended action for treatment** details in the 1-page document (Figure 4-3a on Page 309) corresponding to the asthma control level resulting from the assessment and put it here as recommended action.

**Note:** (This note should appears after the recommended action for treatment message)

At present, there are inadequate data to correspond frequencies of exacerbations with different levels of asthma control. In general, more frequent and intense exacerbations (e.g., requiring urgent, unscheduled care, hospitalization, or ICU admission) indicate poorer disease control. For treatment purposes, patients who had ≥2 exacerbations requiring oral systemic corticosteroids in the past year may be considered the same as patients who have **not-well-controlled** asthma, even in the absence of impairment levels consistent with **not-well-controlled** asthma.

* **5-11 YEARS OLD**

1. **INPUT FORM (ASTHMA CONTROL ASSESSMENT)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **QUESTIONS NUMBER** | **QUESTIONS** | **ANSWERS TYPES** | **ANSWERS CHOICES** | **ANSWER CHOICE NUMBER** | **USE TO EVALUATE ASTHMA CONTROL?** | **DOMAIN OF CONTROL** |
| **Q1** | Asthma symptoms in previous 2 – 4 weeks | Multiple choice - one answer | ≤2 days /week but no more than once on each day | A1 | Yes | Impairment |
| >2 days/week or multiple times on ≤2 days /week | A2 |
| Throughout the day | A3 |
| **Q2** | Nighttime awakenings In previous 2- 4 weeks | Multiple choice - one answer | ≤ 1x/month | A1 | Yes | Impairment |
| ≥ 2x/month | A2 |
| ≥ 2x/week | A3 |
| **Q3** | Interference with normal activity in previous 2-4 weeks | Multiple choice - one answer | None | A1 | Yes | Impairment |
| Some limitation | A2 |
| Extremely limited | A3 |
| **Q4** | Short-acting  beta2-agonist use for symptom control in previous 2-4 weeks (not prevention of exercise-induced bronchospasm) | Multiple choice - one answer | ≤ 2 days/week | A1 | Yes | Impairment |
| >2 days/week | A2 |
| Several times per day | A3 |
| **Q5** | FEV1or peak flow in previous 2-4 weeks | Multiple choice - one answer | > 80% predicted / personal best | A1 | Yes | Impairment |
| 60-80 % predicted/personal best | A2 |
| < 60 % predicted / personal best | A3 |
| Not available | A4 |
| **Q6** | FEV1/FVC | Multiple choice - one answer | >80% | A1 | Yes | Impairment |
| 75-80% | A2 |
| < 75% | A3 |
| Not available | A4 |
| **Q7** | Exacerbations requiring oral systemic corticosteroids | Multiple choice - one answer | 0-1 /year | A1 | Yes | Risk |
| ≥ 2 / year | A2 |

1. **WORKFLOW TO FOLLOW TO ASSESS THE ASTHMA CONTROL LEVEL**

Please refer to the 1-page document (Figure 4-3b on page 310) taken from the EPR-3 guidelines and sent along with this document to know the conditions under which the asthma control level for children age 5- 11 years old is assessed as “Well Controlled”, “Not Well Controlled” or “Very Poorly Controlled.”

1. **OUTPUT ( ASTHMA CONTROL LEVEL ASSESSED AND RECOMMENDED ACTION)**

After that the input form has been filled out and the answers to the questions in the form assessed following the EPR- 3 guidelines, a screen should display to the user with the following message:

* **Asthma Control Level (Impairment Domain):** “Well Controlled” or “Not Well Controlled” or Very Poorly Controlled”

**Recommended Action for treatment**

**Note:** Please look at the **recommended actions for treatment** details in the 1-page document (Figure 4-3b on Page 310) corresponding to the asthma control level (Impairment domain) resulting from the assessment and put it here as recommended action.

* **Asthma Control Level (Risk Domain):** “Well Controlled” or “Not Well Controlled” or Very Poorly Controlled”

**Recommended Action for treatment**

**Note:** Please look at the **recommended actions for treatment** details in the 1-page document (Figure 4-3b on Page 310) corresponding to the asthma control level (Impairment domain) resulting from the assessment and put it here as recommended action.

**Note:** (This note should appears after the recommended action for treatment message)

At present, there are inadequate data to correspond frequencies of exacerbations with different levels of asthma control. In general, more frequent and intense exacerbations (e.g., requiring urgent, unscheduled care, hospitalization, or ICU admission) indicate poorer disease control. For treatment purposes, patients who had ≥2 exacerbations requiring oral systemic corticosteroids in the past year may be considered the same as patients who have **persistent** asthma, even in the absence of impairment levels consistent with **persistent** asthma.

* **>= 12 YEARS OLD**

1. **INPUT FORM (ASTHMA CONTROL ASSESSMENT)**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **QUESTIONS NUMBER** | **QUESTIONS** | **ANSWERS TYPES** | **ANSWERS CHOICES** | **ANSWER CHOICE NUMBER** | **USE TO EVALUATE ASTHMA CONTROL?** | **DOMAIN OF CONTROL** |
| **Q1** | Asthma symptoms in previous 2 – 4 weeks | Multiple choice - one answer | ≤2 days /week | A1 | Yes | Impairment |
| >2 days/week | A2 |
| Throughout the day | A3 |
| **Q2** | Nighttime awakenings in previous 2- 4 weeks | Multiple choice - one answer | ≤ 2x/month | A1 | Yes | Impairment |
| 1-3x/week | A2 |
| ≥ 4x/week | A3 |
| **Q3** | Interference with normal activity in previous 2-4 weeks | Multiple choice - one answer | None | A1 | Yes | Impairment |
| Some limitation | A2 |
| Extremely limited | A3 |
| **Q4** | Short-acting  beta2-agonist use for symptom control in previous 2-4 weeks (not prevention of exercise-induced bronchospasm) | Multiple choice - one answer | ≤ 2 days/week | A1 | Yes | Impairment |
| >2 days/week | A2 |
| Several times per day | A3 |
| **Q5** | FEV1 or peak flow in previous 2-4 weeks | Multiple choice - one answer | > 80% predicted / personal best | A1 | Yes | Impairment |
| 60-80 % predicted/personal best | A2 |
| < 60 % predicted / personal best | A3 |
| Not available | A4 |
| **Q6** | Validated questionnaire: ATAQ | Multiple choice - one answer | 0 | A1 | Yes | Impairment |
| 1-2 | A2 |
| 3-4 | A3 |
| Not available | A4 |
| **Q7** | Validated questionnaire: ACQ | Multiple choice - one answer | ≤ 0.75 | A1 | Yes | Impairment |
| ≥1.5 | A2 |
| N/A | A3 |
| **Q8** | Validated questionnaire: ACT | Multiple choice - one answer | ≥ 20 | A1 | Yes | Impairment |
| 16-19 | A2 |
| ≤15 | A3 |
| Not available | A4 |
| **Q9** | Exacerbations requiring oral systemic corticosteroids | Multiple choice - one answer | 0-1 /year | A1 | Yes | Risk |
| ≥ 2 / year | A2 |

1. **WORKFLOW TO FOLLOW TO ASSESS THE ASTHMA CONTROL LEVEL**

Please refer to the 1-page document (Figure 4-7 from page 345) taken from the EPR-3 guidelines and sent along with this document to know the conditions under which the asthma control level for children age >= 12 years old is assessed as “Well Controlled”, “Not Well Controlled” or “Very poorly Controlled”.

1. **OUTPUT ( ASTHMA CONTROL LEVEL ASSESSED AND RECOMMENDED ACTION)**

After that the input form has been filled out and the answers to the questions in the form assessed following the EPR- 3 guidelines, a screen should display to the user with the following message:

* **Asthma Control Level (Impairment Domain):** “Well Controlled” or “Not Well Controlled” or Very Poorly Controlled”.

**Recommended Action for treatment**

**Note:** Please look at the **recommended actions for treatment** details in the 1-page document (Figure 4-7 on Page 345) corresponding to the asthma control level (Impairment domain) resulting from the assessment and have it here

* **Asthma Control Level (Risk Domain):** “Well Controlled” or “Not Well Controlled” or Very Poorly Controlled”

**Recommended Action for treatment**

**Note:** Please look at the **recommended actions for treatment** details in the 1-page document (Figure 4-7 on Page 345) corresponding to the asthma control level (Impairment domain) resulting from the assessment and put it here as recommended action.

**Note:** (This note should appears after the recommended action for treatment message)

At present, there are inadequate data to correspond frequencies of exacerbations with different levels of asthma control. In general, more frequent and intense exacerbations (e.g., requiring urgent, unscheduled care, hospitalization, or ICU admission) indicate poorer disease control. For treatment purposes, patients who had ≥2 exacerbations requiring oral systemic corticosteroids in the past year may be considered the same as patients who have **Not-well-controlled**  asthma, even in the absence of impairment levels consistent with **Not-well-controlled** asthma.