Immigrant Health Screening in Primary Care for Children: An Implementation Guide for CDS

Introduction

This document includes instructions for building Clinical Decision Support (CDS) to help with culturally sensitive determination of children potentially in need of Immigrant Health Screening (e.g. children born outside the US). The content for this CDS module was informed by two immigrant health advisory groups, one comprised of clinicians and another of parents of immigrant children- and immigrant youth. Guidance on screening is adapted from recommendations by the Centers for Disease Control and Prevention (CDC).

The CDS includes 3 interaction points:

- 1. A Best PracticeAlert (BPA) informing clinicians of potential immigrant health screening needs
- 2. Documentation support using a SmartList and Smart Phrases intended to be embedded within a well template.
- 3. A SmartSet which includes the recommended orders for immigrant health screening by the CDC

The build includes ~20 EHR components. Where able, you are encouraged to use existing content in your EHR if available (e.g. SmartDataElements for Non-US Birth) and should adapt the build guide accordingly. It is recognized that no two builds will be exactly alike. The included build list uses a suggested build order, but feel free to modify as needed.

Special Features:

In addition to standard EPIC content, the following are included in this CDS module.

Hyperlinks

Two hyperlinks are used and need to be made accessible in the EPIC environment (request to add to the 'white list').

- CareRef: (https://careref.web.health.state.mn.us/refugee-info)
 CareRef is a comprehensive guidance tool for immigrant and refugee health and is the reference for recommended orders contained within this CDS
- 2. Ask Where: (https://www.health.state.mn.us/communities/rih/coe/askwhere.pdf)
 The *Ask Where* document is a 2-page handout that provides guidance for clinicians on how to ask about birth location in a culturally sensitive way.

SmartSet Links

The following code can be inserted as a hyperlink in EPIC to launch a SmartSet from within a Progress Note. Replace the *** below with the PRL ID of the SmartSet.

EpicAct:SECTION_REDIRECTOR_WEB,RunParamsURLEncoded:SMARTSETS%04MR_SMARTSET_VN;SKIPOPCHECK;STARTUPFIRST=1%2CSTARTUPCONTEXT=PRLs%0E***-%2CTOC=0

Purpose & Target Users:

The purpose of the CDS is to help primary care clinicians for children (1) identify patients who may need immigrant health screening in settings where birth country is not already collected as part of standard care and (2) to guide them to a smart set with suggested screenings. Rules prevent the display in patents who are unlikely to need this screening based on data in the EHR indicating a likely US birth or evidence of previous screening being considered. Our institution used the combination of (1) patients who were seen for care at an institution in the first 4 weeks of life (as these were likely born in the US), (2) those who have been seen in the practice for more than 2 years (to prevent over-firing for known patients which could be disruptive to care), (3) documentation of any birth location, and (4) previous use of the smart set. Sites may wish to modify these restrictors. Organizational workflows should be considered and may result in build changes.

Native EPIC Build and Assumptions

Recording birth location: A SmartDataElement (EPIC#3100006330) exists for recording US Birth. It is under the social history section of the hierarchy. It is a Boolean (using Yes/No values). Alternatively EPIC#35886 can be used for recording Birth Country as a String. Identifiers used are from the local installation and may differ across organizations.

Displaying lab tests: Organizations may have linked base names for labs or not we provide an examples of how lab details are given. If there are no base names, it is possible to use a grouper to manually select the relevant lab tests.

Screen Shots of CDS

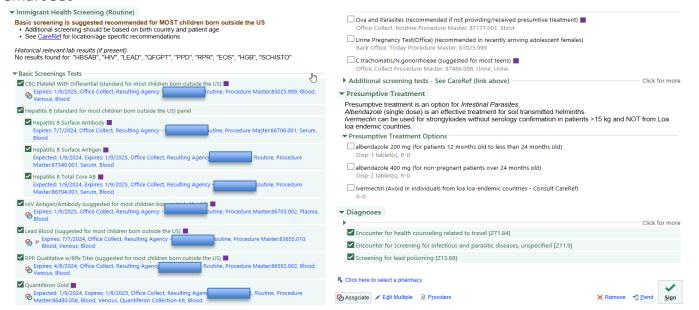
Best Practice Alert (Inline Navigator)



Documentation Template Text

{HELP TEXT - Birth Country Not Known. Access guidance on how to ask if needed. Review Immigrant Health Screening SmartSet if born outside US:37575}

Smart Set



Immigrant Health Screening CDS Build

| INI | Component Name | Purpose/Notes/ Pre-requirements | Build Guidance and Detailed instructions |
|----------|----------------|------------------------------------|---|
| SmartSet | t Build | | |
| OSQ-1 | HEP B PANEL | Note: Order names may be different | Components of Panel (All preselected): |
| []done | | at your site | Amb Order: Hepatitis B Surface Antibody |
| | | | Amb Order: Hepatitis B Surface Antigen |
| | | | Amb Order: Hepatitis B Total Core AB |
| OSQ-2 | ROUTINE LABS | Note: Order names may be different | Display Name: Basic Screening Tests |
| done | | at your site | SmartGroup Info: remove check from 'show only checked upon loading' |
| | | | Components of SmartGroup (+ indicates preselected): |
| | | | +Amb Order: CBC, Platelet With Differential (recommended in most patients) |
| | | | +Amb Panel: [OSQ-1] |
| | | | +Amb Order: HIV Antigen/Antibody |
| | | | +Amb Order: Lead Blood |
| | | | +Amb Order: RPR Qualitative w/Rflx Titer |
| | | | +Amb Order: Quantiferon Gold Plus |
| | | | Amb Order: Ova and Parasites (recommended if not providing/received |
| | | | Amb Order: Urine Pregnancy Test (recommended in recently arrived adolescent |
| | | | females) |
| | | | Amb Order: C. trachomatis/N. gonorrhoeae (recommended for most teens) |
| OSQ-3 | OTHER LABS | Note: Order names may be different | Display Name: Additional screening tests - See CareRef (link above) |
| done | | at your site | Components of SmartGroup (+ indicates preselected): |
| | | | Amb OrderBasic Metabolic Panel-COMBO |
| | | | Amb OrderG6PD Screen w/reflx to Quant |
| | | | Amb OrderHemoglobin A1C-COMBO |
| | | | Amb OrderHepatitis C Ab w/ Reflex-COMBO |
| | | | Amb OrderHepatic Function Panel |
| | | | Amb OrderLipid Panel-COMBO |
| | | | Amb OrderNBS PA Supplemental - Initial |
| | | | Amb OrderRapid Cryptosporidium/Giardia antigen-COMBO |
| | | | Amb OrderStrongyloides Antibody IGG |
| | | | Amb OrderThyroid Stimulating Hormone-COMBO |
| | | | Amb OrderVitamin D 25 OH-COMBO |
| | | | Amb OrderVitamin B12 Level-COMBO |
| | | | Amb OrderUric Acid (Bld)-COMBO |
| | | | Amb OrderUrinalysis Rflx to Microscopic Evaluation COMBO |

| INI | Component Name | Purpose/Notes/ Pre-requirements | Build Guidance and Detailed instructions |
|-------|------------------|--------------------------------------|---|
| OSQ-4 | PRESUMPTIVE | Note: Order names may be different | Components of SmartGroup |
| done | TREATMENT | at your site | Amb Order: Albendazole 200 mg (for patients 12 months old to less than 24 |
| | | | months old) 200 mg, Oral, ONCE, Disp-1 tablet(s), R-0 |
| | | | Amb Order: Albendazole 400 mg (for non-pregnant patients over 24 months old) |
| | | | 400 mg, Oral, ONCE, Disp-2 tablet(s), R-0 |
| | | | Amb Order: Ivermectin (Avoid in individuals from loa loa-endemic countries - |
| | | | Consult CareRef) 200 mcg/kg/DOSE, DAILY, Starting S for 2 days, R-0 |
| OSQ-5 | DIAGNOSES | Note: Diagnosis names may be | Components of SmartGroup (+ indicates preselected): |
| done | | different at your site | +Dx Encounter for health counseling related to travel [Z71.84] |
| | | | +Dx Encounter for screening for infectious and parasitic diseases, unspecified |
| | | | [Z11.9] |
| | | | Dx Screening for tuberculosis [Z11.1] |
| | | | Dx Screening for endocrine, nutritional, metabolic and immunity disorder |
| | | | [Z13.29, Z13.21, Z13.228, Z13.0] |
| | | | Dx Screening for lead poisoning [Z13.88] |
| PRL-1 | IMMIGRANT | SmartSet for including the guidance, | Display Name: Immigrant Health Screening (SmartSet) |
| done | HEALTH SCREENING | with the OSQs included listed below | Section 1: |
| | | | Display Name: Immigrant Health Screening (Routine) |
| | | Hyperlink: Care Ref | Description Text: |
| | | | Immigrant Health Screening recommended for children born outside the US |
| | | NOTE: Do not let the system auto- | Individual screening indications are based on birth country and patient age. |
| | | select the smart set ID, chose your | See <u>CareRef</u> for birth location and age specific recommendations. |
| | | own with a high number so the in | Summary of potentially relevant lab tests: |
| | | production the number will be the | @LASTLAB(HBSAB:1,HIV:1,LEAD:1,QFGPT:1,PPD:1,RPR:1, |
| | | same | EOS:1,HGB:1,SCHISTO:1)@ |
| | | | SmartGroup: OSQ-2 |
| | | NOTE: Associate labs (OSQ2-4) with | SmartGroup: OSQ-3 |
| | | OSQ-5 once all OSQs are added to the | Section 2: |
| | | PRL | Display Name: Presumptive treatment |
| | | | Description Text: |
| | | | Presumptive treatment is an option for Intestinal Parasites. |
| | | | Albendazole (single dose) is an effective treatment for soil transmitted helminths. |
| | | | Ivermectin can be used for strongyloides without serology confirmation in patients |
| | | | >15 kg and NOT from Loa loa endemic countries. |
| | | | SmartGroup: OSQ-4 |
| | | | Section 3: |
| | | | Display Name: Diagnoses |
| | | | SmartGroup: OSQ-5 |

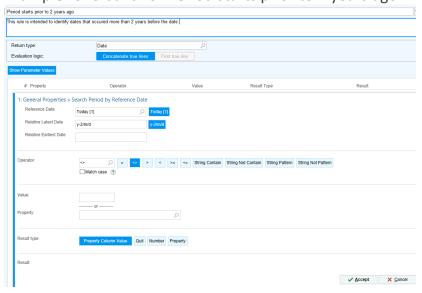
| INI | Component Name | Purpose/Notes/ Pre-requirements | Build Guidance and Detailed instructions |
|------------|---------------------------|--|--|
| On/Off Swi | tch For Displayed Com | ponents | |
| CER-1 | Period starts prior to | Filter for events occurring more | Context: Registry Metrics Search Period Filter |
| [] done | 2 years ago | than 2 years ago | Property: Search By Reference Date |
| | Example <u>Screenshot</u> | | Reference Date: <i>Today</i> |
| | | | Relative Latest Date: <i>y-2/m/d</i> |
| | | | Operator: <> |
| | | | Result: Property Column Value |
| CER-2 | Period in the first 4 | Filter for events occurring in the | Context: Registry Metrics Search Period Filter |
| []done | weeks of life | first 4 weeks of life | Property: Search By Reference Date |
| | | | Reference Date: Date of Birth |
| | | | Relative Latest <i>Date: y/m/d+28</i> |
| | | | Operator: <> |
| | | | Result: Property Column Value |
| CER-3 | PATIENT LOCATOR | Rule to determine when content | Context: Patient BPA Locator |
| []done | Example <u>Screenshot</u> | does NOT display | |
| | | | LOGIC: NOT (1 or 2 or 3 or 4) |
| | | Note: The CDS is intended to | 1) Property: First Encounter Date |
| | | display only in patients without | Rule = CER-1, include all encounter types |
| | | (1) a visit more than 2 years ago, | 2) Property: First Encounter Date |
| | | (2) or a visit in the first 3 weeks of | Rule = CER-2, include all encounter types |
| | | life, (3) or previous data filing | 3) Property: SmartDataElement |
| | | (indicating that the BPA was | Value=EPIC#3100006330, Context is Patient, operator is "Contain Any", Value is |
| | | handled), or (4) without someone | Yes, No |
| | | having used the SmartSet already. | 4) Property: C_Smartset_Selected |
| | | | Value = PRL-1 (ID) |
| | | It is otherwise TRIGGERLESS. | |
| | | This is intention to avoid encoding | |
| | | biases into triggers (e.g. triggering | |
| | | only in patients with non-English | |
| | | languages). | |
| | ntion Template | | |
| ETX-1 | INSIDE US BIRTH | Display on 'No' for may need | Limit Use: Functional Type = MR Charting |
| []done | | immigrant health screening | Text to include: |
| | | | Health screening based on location of birth not indicated. |
| ETX-2 | OUTSIDE US BIRTH | Display on 'yes' for may need | Limit Use: MR Charting |
| []done | | immigrant health screening | |
| | | | Text to include: |
| | | Hyperlink: SmartSet Link Code | Smart Sets considered for relevance: Immigrant Health Screening Smart Set |

| INI | Component Name | Purpose/Notes/ Pre-requirements | Build Guidance and Detailed instructions |
|-------------|---------------------------|--|--|
| | | | |
| ELT-1 | SELECT BIRTH | List content for the immigrant | Select: Use Discrete Data |
| done | LOCATION | health screening ETX | Display Name: Any Text (it will be overwritten) |
| | Example <u>Screenshot</u> | | Use Discrete Data Checked |
| | | On select, set SDE of BIRTH | Reselectable Unchecked |
| | | LOCATION to TRUE or FALSE | Include as Label Unchecked |
| | | | Choice: |
| | | | {Born in the US:TXT,ETX_1(ID)} |
| | | | {Born outside the US:TXT,ETX_2(ID} |
| | | | Choice SDE: EPIC#31000006330 (Patient) set to True or False respectively |
| ETX-3 | DOCUMENT BLOCK | Content to add in the documentation | Limit Use: MR Charting |
| []done | DOGOMENT BEOCK | template | Limit osc. Fix charting |
| | | | Text to include: |
| | | 'guidance' hyperlink: Ask Where | {HELP TEXT - Birth Country Not Known. Access guidance on how to ask if |
| | | Other hyperlink: SmartSet Link Code | needed. |
| | | | Review Immigrant Health Screening SmartSet if born outside US:ELT_ID_1} |
| ETX-4 | INSERTION | Content to control show/hide | Limit Use: MR Charting |
| | WRAPPER | display of documentation block | |
| | | within a progress note | Text to include: |
| | | | @CERMSG(CER-3[ID]:ELT-3[ID])@ |
| | | Note: do not use refreshable link | |
| | | This can be inserted in any note | |
| | | template as per workflow | |
| | | considerations. | |
| Best Practi | | | |
| ETX-1 | BPA TEXT | Text to display in the BPA | Limit Use: Functional Type = BPA |
| done | | (quidan as' hymonlinle. A al- IATh are | Tout to include. |
| | | 'guidance' hyperlink: Ask Where | Text to include: If born outside US, consider Immigrant Health screening |
| | | | |
| HHS-1 | LINK FOR BPA TEXT | Link for BPA Text | Access guidance on how to ask if needed. Type: SmartText |
| | LINK FUK DPA IEXI | LIIIK IOI DPA TEXT | Mnemonic: ASCIBPATEXT |
| done | | | Record: ETX-2 |
| | | | |
| LCL 1 | I OCATOD CDITEDIA | DDA disular suitaria | Context: BPA |
| LGL-1 | LOCATOR CRITERIA | BPA display criteria | Type: Criteria |
| done | | Pre-requirements [CER patient locate] | Rule: CER-3 |

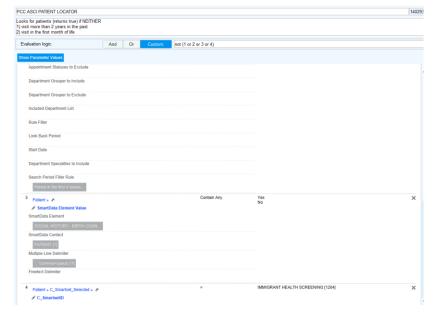
| INI | Component Name | Purpose/Notes/ Pre-requirements | Build Guidance and Detailed instructions |
|--------|---------------------------|---------------------------------|---|
| LGL-2 | BPA | Main BPA for intervention | Display to User: Yes |
| []done | Example <u>Screenshot</u> | | Unformatted Text: If born outside the United States consider Immigrant Health |
| | | | Screening |
| | | | Formatted Display Text: Birth Country Not Known |
| | | | SmartLink: HHS-1 |
| | | | Importance Level: Pathway Advisory |
| | | | Summary Text: Birth Country Not Known |
| | | | Criteria: LGL-1 |
| | | | Restrictions: Encounter Type: Office Visit |
| | | | Action: SmartSet [PRL-1], Manually Selected |
| | | | Acknowledge Reasons: |
| | | | 1 – Not Applicable, Lockout =12000000 hours, all users, Button=Yes, Caption = |
| | | | "Not Applicable", EPIC#31000006330, value =TRUE |
| | | | 2 – Clinician Acknowledged, Lockout =12000000 hours, all users, Button=Yes, |
| | | | Caption = "Immigrant Health Screening Completed Elsewhere", SDE= |
| | | | EPIC#31000006330, VALUE = FALSE |

Build Screenshots Examples

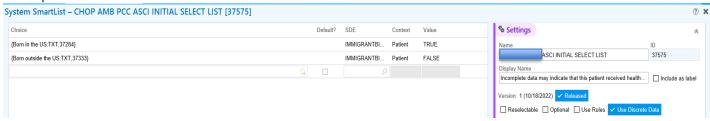
Example: CDS build for Period starts prior to 2 years ago:



Example: Rule logic for On/Off Switch



Example: Smart List Build



Example: Best Practice Advisory

Contact Comment -Comments: Alert that notes a patinet is recently arrived in practice and suggests getting old records/immigrant health screening. Display • Importance level: Pathway Advisory [25] If born outside the United States consider Immigrant Health Screening Header text: Birth Country Not Known Formatted header text: Summary Text: Birth Country Not Known Body SmartLink: CC ASCI BPA LINK Criteria · 1. PCC ASCI PATIENT LOCATOR CRITERIA [5036] Restrictions · Encounter limitation inclusion: B Location Department Service Area Location Grouper Specialty Department Grouper Encounter Type Provider Type Office Visit Triggers Potential triggering actions: · General BPA section · Reporting Workbench · Header BPA Notifications SmartSets, Order Sets, and Pathways SmartSets, Order Sets, and Pathways Frequency Open As IMMIGRANT HEALTH SCREENING Released Use Department Setting Manually Selected **Acknowledge Reasons** Lockout Button Comment Comment Acknowledge Reason Time Apply To **Button? Caption** SmartData Element Context Value Extension Allowed? Required? Clinician 1200000 All users, Not **IMMIGRANTBIRTHCOUNTRY** No Acknowledged Applicable hour(s) current encounter only 1200000 All users, Not Applicable Immigrant IMMIGRANTBIRTHCOUNTRY No No hour(s) current Health Screening encounter only Completed Acknowledge reason requirement: None **Success Tracking Standard Success** Standard success methods: Any Action Taken **Comprehensive Success** Comprehensive success method: No Comprehensive Success User Feedback -Disabled Feedback Status: