The Autoimmunity Screening for Kids (ASK) Study

EPIC CUSTOMIZATION

AMBER CORR, MA

Barbara Davis Center for Diabetes
UNIVERSITY OF COLORADO ANSCHUTZ MEDICAL CAMPUS

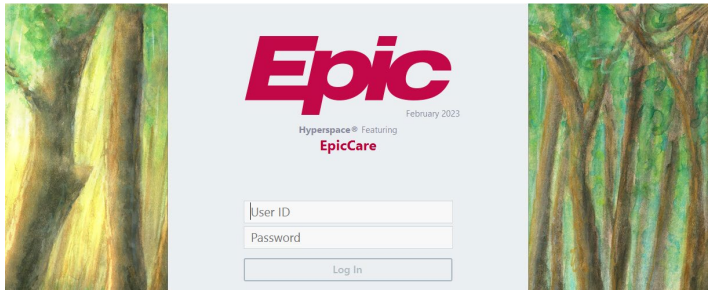
Objectives

1. E-consent, lab orders, and result sharing at Children's Hospital Colorado (CHCO)

2. Confirmation & interpretation of results via EHR communication

3. ICD.10 codes and Best Practice Advisories

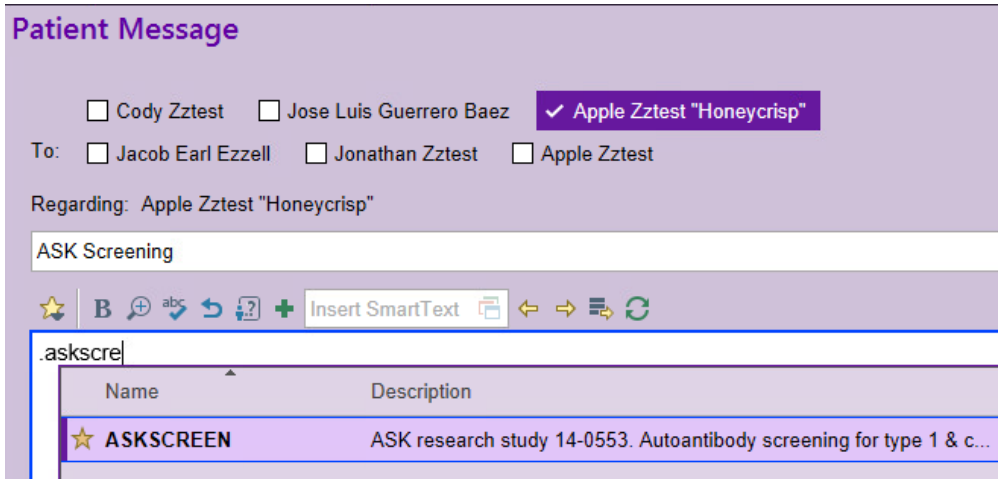
ASK eConsent



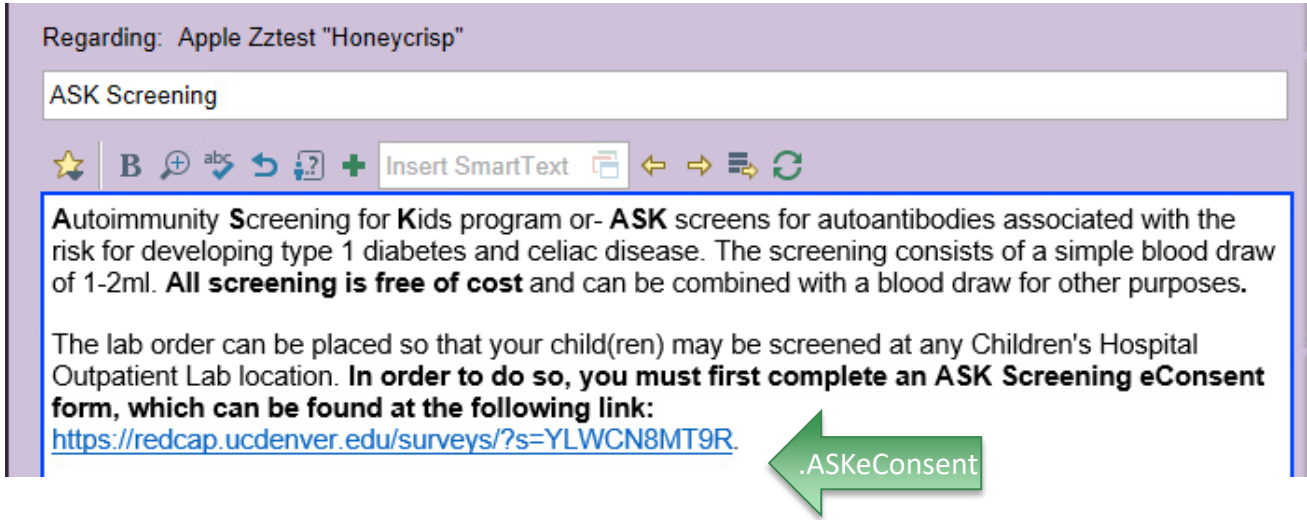
Electronic data capture system (EDC) **RedCap**.

REDCap®

.smartphrase



- Automated alert to research coordinator for **EPIC lab order**
- eConsent can be sent via an EPIC **.smartphrase** to participants using **MyChart**



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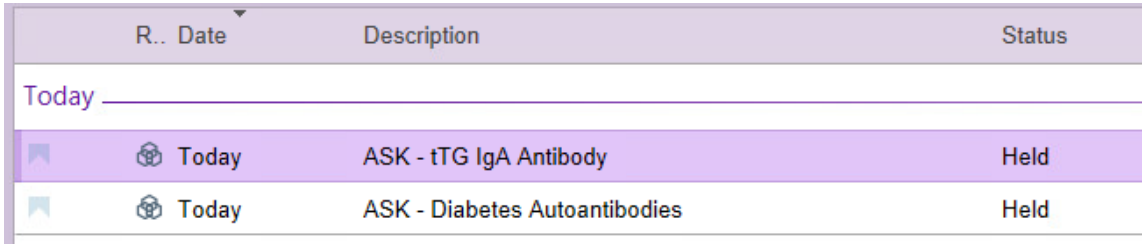
A SIMPLE TEST TO DETECT
Childhood Diabetes
+ Celiac Disease

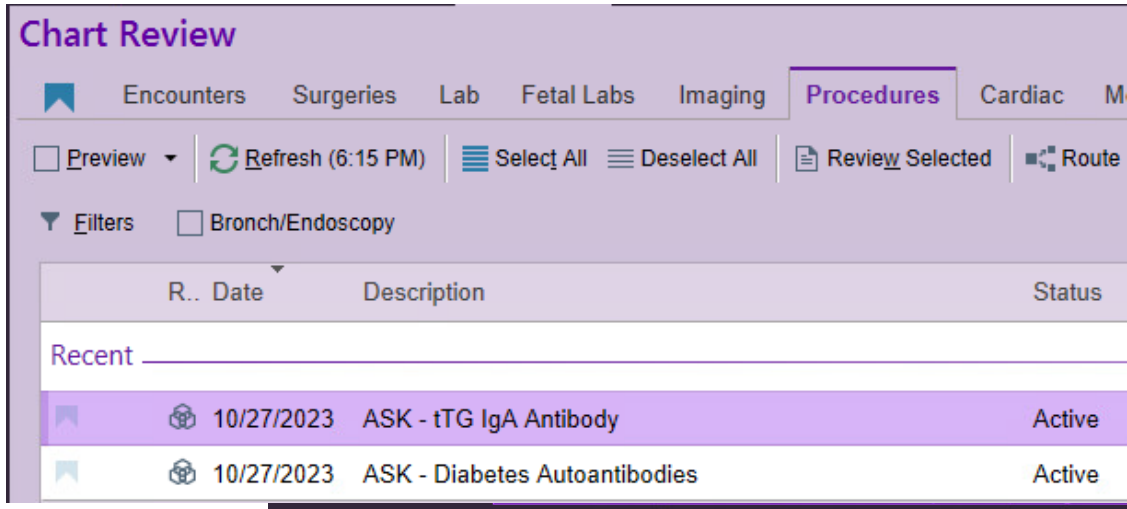
Placing Lab Orders

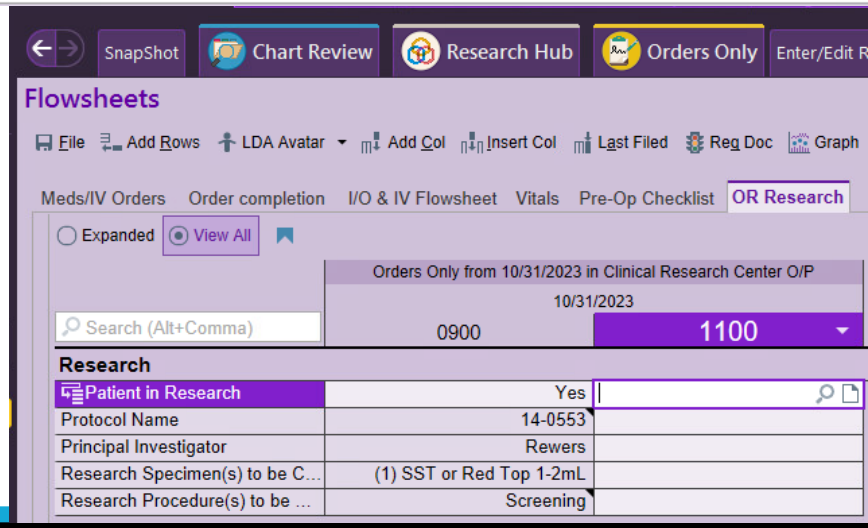
- ASK **research coordinator** requests a lab order in EPIC
- ASK **PI signs the labs** & releases it to 'held' in chart

Depending on participant preference the order may be:

1. released to active so participant may go to any of the CHCO's **outpatient labs** for their blood draw. **(most common workflow)**
2. left as a held lab for blood draw **at CHCO hospital:** ambulatory, in-patient, OR, or ED







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ASK Family Communications

Family Notification upon Completion of ASK eConsent

Thank you for completing a screening form and consent for your child(ren) to be screened through the **A**utoimmunity **S**creening for **K**ids or **ASK** program. We **screen for autoantibodies** associated with the risk of developing **Type 1 Diabetes** and **Celiac disease**. A **lab order** will be requested so that your child(ren) can be screened at any of the **Children's Hospital Colorado outpatient labs.**

It may take 5 – 7 business days for the lab order to be set. **When the lab order is ready, you will receive a confirmation email from ASK with your copy of the lab requisition form.** We ask that you please do not arrive at the outpatient lab before you receive this confirmation email from ASK- as this is a Colorado University research study protocol and there will be no one onsite at Children's Hospital that will be able to place the research lab orders for you.

If you use Epic MyChart and prefer all future ASK study communications come through your patient portal, **please make that request by replying to this email with the phrase, MYCHART.*

Family Order Notification

The **Children's Hospital** outpatient lab order **is ready**; your child/ren may now be screened by **ASK** to test for the autoantibodies associated with the risk of developing **Type 1 Diabetes** and **Celiac Disease**.

Attached is your copy of the **Research Lab Requisition Order**. The outpatient lab staff will locate the **ASK** lab orders in the **Children's Hospital** database by searching for your child/ren's medical registration number or **MRN.**

No appointment is required. Before arriving at your preferred Children's Hospital outpatient lab location, please review their hours of operation, which can be found at our website **ASKhealth.org**.

Families can receive these ASK notifications via **email** or **MyChart

ASK Result Letter

Dear Parents,

Thank you for taking the time to speak with us about the autoantibody test results for [redacted] drawn on [redacted] As we discussed on the phone, your child's confirmed test results for diabetes and celiac screening are:

Type 1 Diabetes:

–Your child is **positive** or above normal for more than one diabetes-predicting autoantibody. We believe your child's risk for type 1 diabetes is significantly increased. Close monitoring for diabetes by ASK is strongly recommended with visits to the Barbara Davis Center.

Celiac Disease:

–Your child's celiac disease screening results were **negative**.

We use two laboratory methods to test for antibodies. Your child's final screening results are listed below.

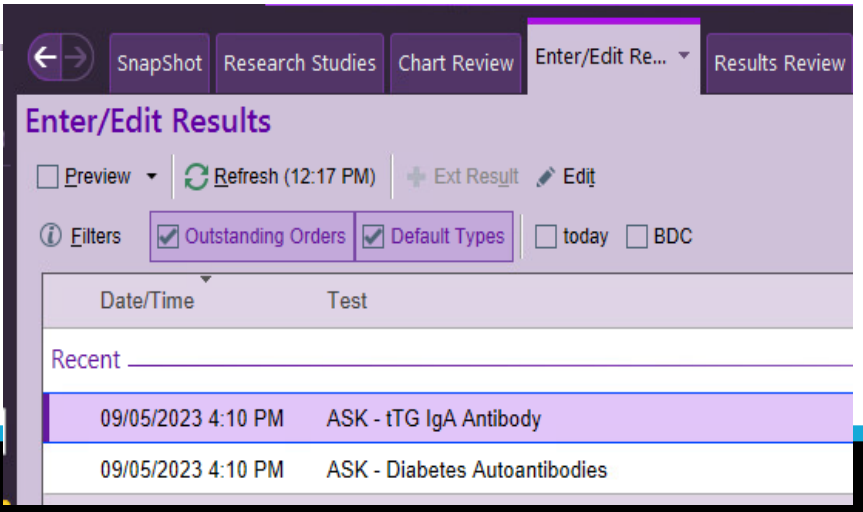
Diabetes autoantibody:		**Celiac autoantibody:**
IAA – **Positive**	IA-2 - **Positive**	TG – **Negative**
GAD - **Negative**	ZnT8 - **Positive**	

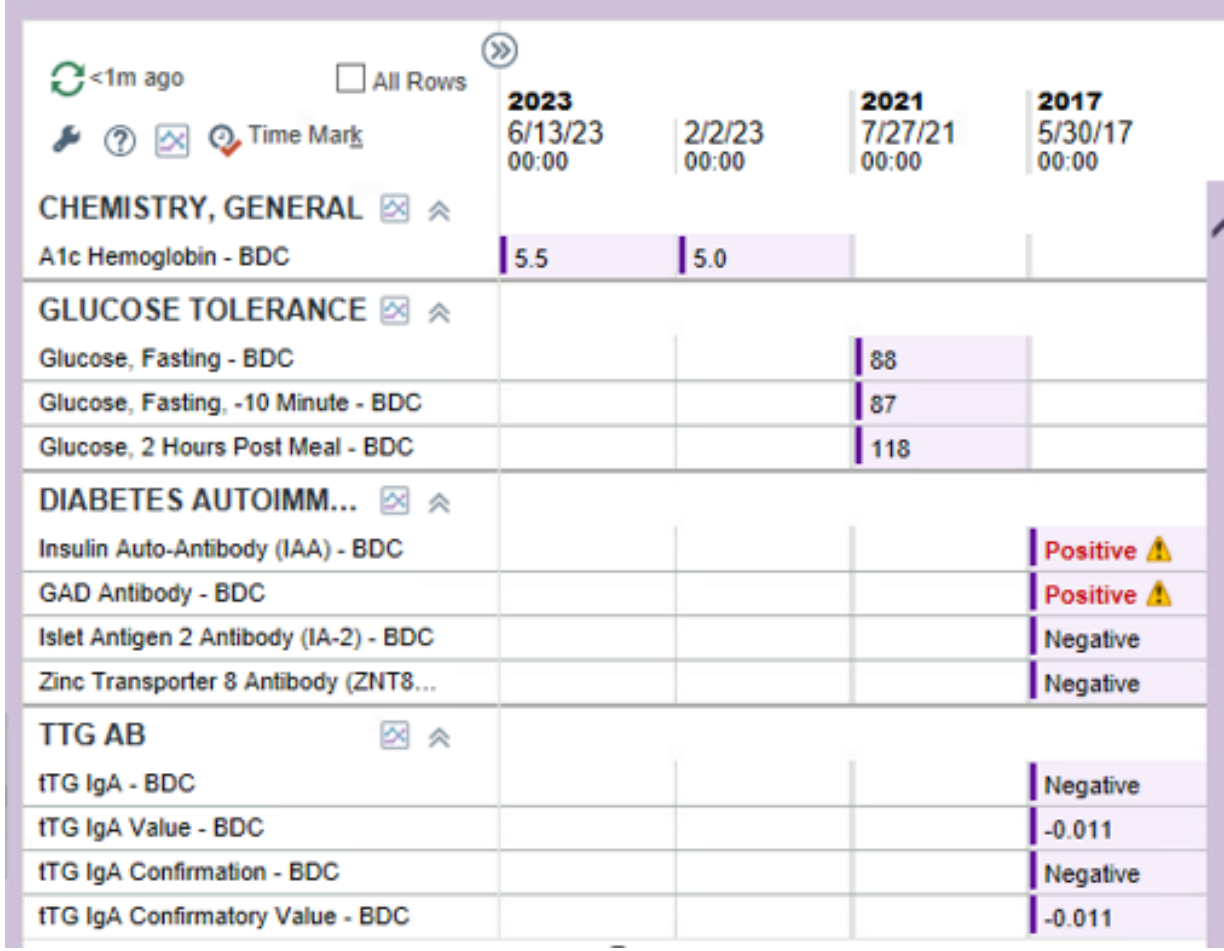
Autoantibodies may develop at any time throughout childhood. Negative results do not mean that your child will never develop autoantibodies, diabetes or celiac disease.

If you have any questions or concerns please contact the ASK team at 303-724-1275. Thank you again for your participation in the ASK Program.

Entering Results

- All ASK participant results are entered into a **clinical EPIC workflow**
- Results are placed in the **'Enter/Edit'** tab of the chart





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Interpretating Results

- An automated alert is sent to all providers in the '**care team**' and to the family through **MyChart**
- **Positive** ASK results are flagged as **'abnormal'**
- **Result narratives** explain the participant's **risk status** & **recommended monitoring**/care instructions

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ASK - Diabetes Autoantibodies

Collection date: 10/31/2023

Collection time:

No collection information available

Providers

Billing: REWERS, MARIAN JERZY

Resulting:

Send Results: No | Yes | Cc list only

Components | Sensitivities | Narrative | Impression

Component	Value	Flags	Low	High	Ref Range	Units	Comment
INSULIN AUTO-ANTIBODY - BDC	Positive	Abnormal			Negative		
GAD ANTIBODY - BDC	Positive -...	Abnormal			Negative		
ISLET ANTIGEN 2 ANTIBODY - BDC	Negative				Negative		
ZINC TRANSPORTER 8 ANTIBODY -...	Negativ				Negative		

Result

Result date: 10/31/2023

Result time:

Abnormal: Abnormal

Status: In process

Positive islet autoantibodies **may** indicate an increased risk for developing symptomatic type 1 diabetes. **These results need to be confirmed** in order to estimate risk. @FNAME@ follow-up for confirmation with the Autoimmunity Screening for Kids (ASK) study.

Please contact the Autoimmunity Screening for Kids (ASK) study with questions.

www.askhealth.org
303-724-1275

User SmartPhrase – ASKRESMULTI [507242]

Do not include PHI or patient-specific data in SmartPhrases.

Insert SmartText | Insert SmartList

Multiple positive islet autoantibodies indicate that **risk for developing symptomatic type 1 diabetes is significantly increased**. This **confirmed** result indicates a 50% chance of d symptomatic diabetes in 5 years and a 70% chance in the next 10 years, with a lifetime risk approaching 100%.

Please contact the Autoimmunity Screening for Kids (ASK) study with questions.

www.askhealth.org
303-724-1275

SmartPhrase Manager - search result for "askres"

Level: User | Profile | Department | Location | Facility

New User SmartPhrase | Edit | SmartPhrase Lookup | Share With

Name	Description
ASKRESMULTI	MULTIPLE – Confirmed
ASKRESNEG	NEGATIVE
ASKRESPOS	POSITIVE Screening
ASKRESSBB	SBB-Confirmed
ASKRESTGCONF	POSITIVE TG confirmed
ASKRESTGNEG	NEGATIVE TG screening
ASKRESTGPOS	POSITIVE TG Screening

Challenges in Staging & Monitoring Early-T1D in EHR

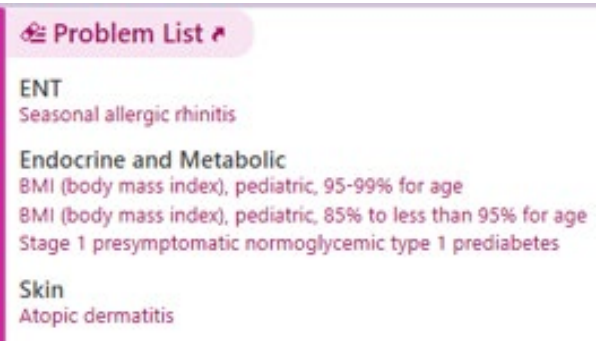
Problem- research communications such as memos, notes, & FYIs can become buried and ineffective in EHR

Solution- Using effective clinical communication tools:

- **Problem list entries** (mapped to ICD.10 codes) can indicate stage of early T1D
- **'Best practice advisories' (BPA)** activated by problem list entry can alert HCPs:
  - Risk of progression to T1D
  - Signs and symptoms
  - Optional labs for evaluation

When these two clinical mechanism are paired, it opens a pathway to effective communication and robust monitoring between clinical research teams and health care providers

ASK Study EPIC Problem List Entries



ASK Stage 1
Presymptomatic normoglycemic type 1 prediabetes
ICD.10 Code: R73.03
EPIC Mapping Code: 1676361
EpicSmartPhrase:.ASKSTG1

@FNAME@ tested confirmed **POSITIVE** for multiple islet autoantibodies. This means that the **risk for developing symptomatic T1D is significantly increased**. Youth with two or more positive islet autoantibodies have a 50% chance of developing symptomatic T1D in 5 years and a 70% chance in the next 10 years, with a lifetime risk approaching 100%.

@FNAME@ and family have been taught to monitor at home by checking finger stick blood glucose after meals a few times per month and to increase to daily checks during illness or with onset of symptoms (including polyuria, polydipsia, nausea, fatigue and weight loss). @FNAME@'s family has been instructed to contact Autoimmunity Screening for Kids (ASK) study staff and @HIS@ health care provider if they note any confirmed finger stick blood glucose >200 mg/dL or any of the above T1D symptoms. Recommended further evaluation may include HbA1c, blood glucose and blood or urine ketone measurement. Early recognition of T1D can prevent potentially life-threatening complications such as diabetic ketoacidosis (DKA). **For clinical consultation call the Pediatric Diabetes (Barbara Davis Center)** at One Call (720-777-3999) with questions or if labs show ketosis, HbA1c ≥ 6.5, or glucose >200 mg/dL.

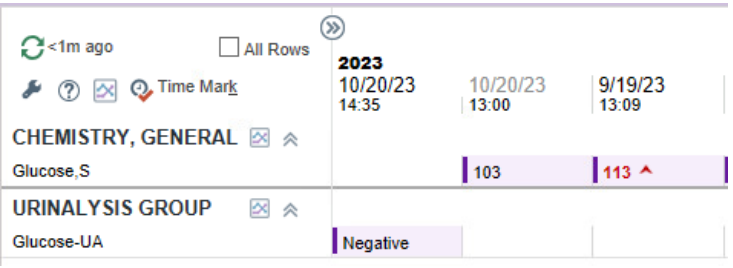
ASK Stage 2
Presymptomatic dysglycemic type 1 prediabetes
ICD.10 Code: R73.03
EPIC Mapping Code: 1676362
Epic SmartPhrase: .ASKSTG2

@FNAME@ tested confirmed **POSITIVE** for one or more of the four islet autoantibodies tested. Additionally, @FNAME@ has shown **dysglycemia consistent with prediabetes on one or more measures**. This means that the **risk for developing symptomatic T1D is significantly increased**.

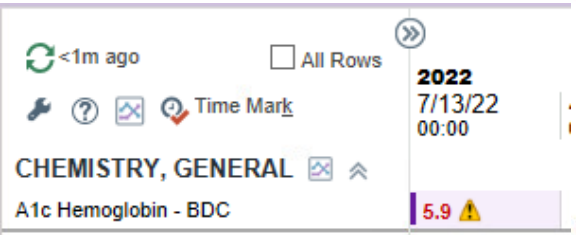
@FNAME@ and family have been taught to monitor at home by checking finger stick blood glucose after meals a few times per month and to increase to daily checks during illness or with onset of symptoms (including polyuria, polydipsia, nausea, fatigue and weight loss). @FNAME@'s family has been instructed to contact Autoimmunity Screening for Kids (ASK) study staff and @HIS@ health care provider if they note any confirmed finger stick blood glucose >200 mg/dL or any of the above T1D symptoms. Recommended further evaluation may include HbA1c, blood glucose and blood or urine ketone measurement. Early recognition of T1D can prevent potentially life-threatening complications such as diabetic ketoacidosis (DKA). **For clinical consultation call the Pediatric Diabetes (Barbara Davis Center)** at One Call (720-777-3999) with questions or if labs show ketosis, HbA1c ≥ 6.5, or glucose >200 mg/dL.

***Glucose measurements; results are entered before Stage 2 Problem List code**

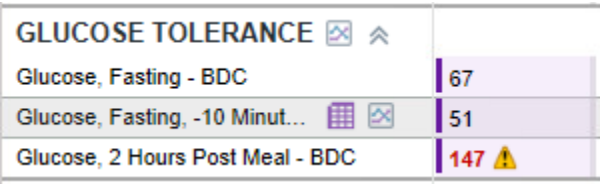
ASK Study EPIC (BPA) *Monitoring Early T1D*

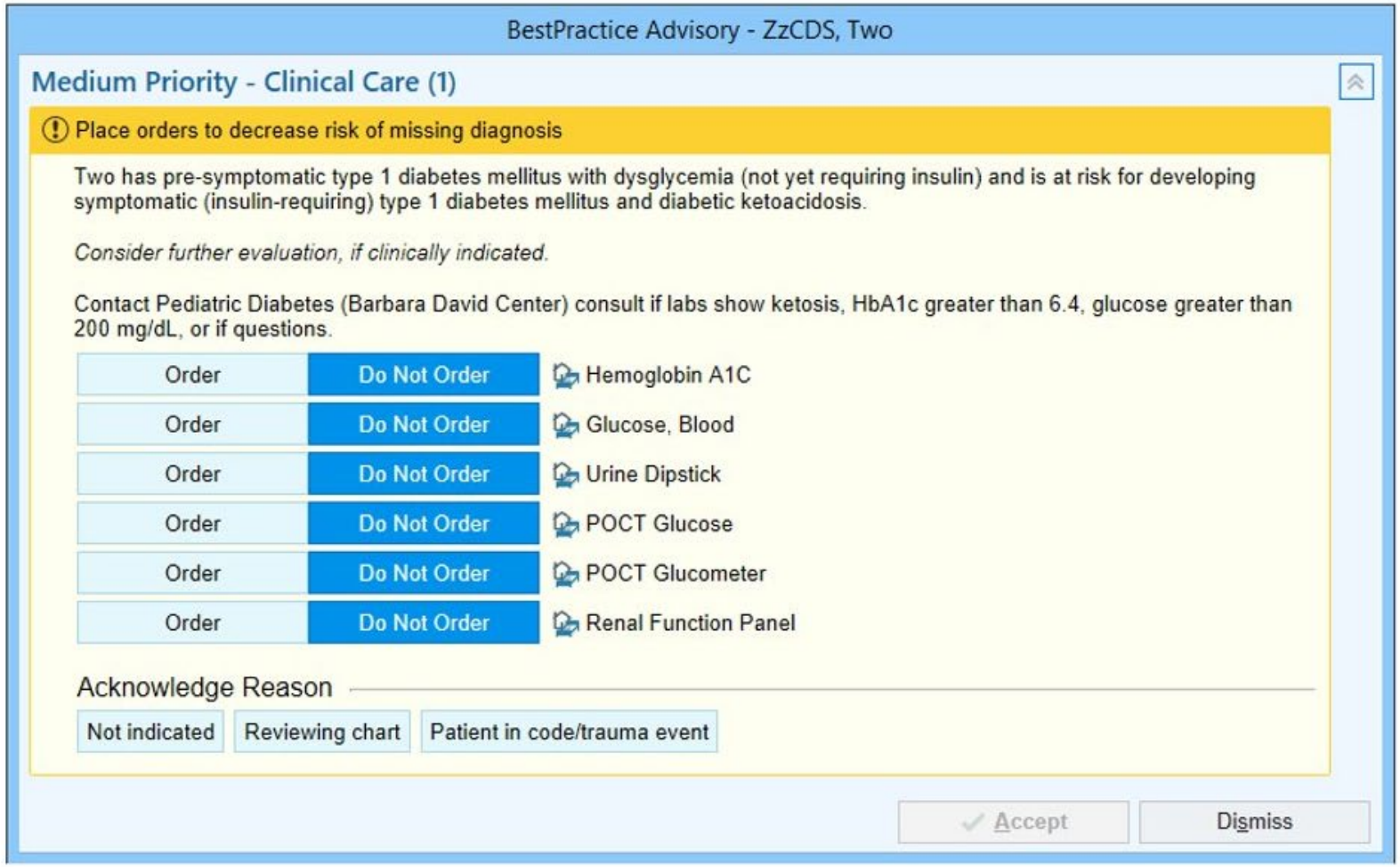


Statement of risk



Suggested order set options





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Case Example

- 4.5 yo female screened 2 antibodies positive in ASK
- Parents refused confirmation or monitoring but agreed to notation in EMR (Problem list entry)
- At 9y 10m, BPA launched during PCP visit, no symptoms noted
- HbA1c 6.9% resulted later that day
- PCP called family and on-call BDC physician
- Family presented to BDC next AM for insulin start and teaching

Future Goals

- **Continue work with EPIC functionalities using BPA to target screening:**
  - **Well child visits (recommended ages)**
  - **Those with personal or family history of autoimmune disease**
- **Partner with additional children's hospitals & HCP networks to support local EMR/EPIC outpatient lab screening protocols**
- **Implement a Laboratory Information System (LIS) for BDC labs to further expand access to our gold-standard assay for autoantibodies**

Acknowledgements

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Sponsors

JDRF Improving Lives. Curing Type 1 Diabetes.
The Leona M. and Harry B. Helmsley Charitable Trust
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Our ASK participants, their families, and ASK provider partners!

Partners

Children's Hospital Colorado
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Pediatrics 5280
Denver Health Level One Care For All

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the early start study tess for pre-symptomatic T1D