



Challenges

Challenge #1: Patient Engagement - Connect patients and care providers

Problem: In today's connected world, patients and clinical care providers continue to have problems getting the right information at the right time to make proactive decisions, remain engaged, and follow up to care instructions. There are many factors that cause the problem including, but not limited to, availability, information action, distractions, language, context, logistics, or insufficient follow through. The range of opportunities exist including two-way communications, scheduling, transportation arrangement, and integration with personal social media, email, alarm clocks and calendar tools.

Challenge: Develop a solution to improve patient and clinical care provider communications. Solutions may include integration with social media, the ability for patients and care providers to connect with a more personal feel, without reducing the security of patient health information (PHI).

Hint: Develop a solution that integrates with smart phone alarms, calendar, or email platforms. Possibilities include interacting with Snapchat, Instagram or Facebook Messaging. Consider integrating with Uber or Lyft.

Need Data? Visit the Texas Children's Hospital table!

Prize:

Timbuk2 Parkside Laptop Backpack

Need Help: Slack us at #TCHEngage

Bonus:

Smart Alert:

Problem: Recent concerns for neurotoxicity following anesthetic exposure at a young age.

Challenge: Create a smart alert or notice if a child less than three is scheduled for anesthesia

Hint: Most EMR (i.e. Epic) systems have the data available to identify these scenarios (i.e. Medical Record Number, patient name, patient demographics, orders, ordering provider contact, and birth date), but do not have a good way to interact outside the system. Think about demonstrating the output of a data file into an app or communication method such as interaction with social media.

Secure Patient and MD Communications:

Problem: a better interface for discharged families to reach our docs besides a phone call / email.

Challenge: A creative option where communication is initiated by the family but can only be confirmed by the MD would do wonders from a patient satisfaction standpoint.

Discharge Follow Up:

Problem: 60% of patients do not follow up with recommended discharge instructions (i.e. pick up a prescription, see a specialist, etc...)

Challenge: A solution that would encourage patient follow-up.



Challenges

Challenge #2: Disease Management - Smart tools to promote self-care

Problem: Disease management is “a system of coordinated healthcare interventions and communications for populations with conditions in which patient self-care efforts are significant”. Patients do not always follow self-care efforts due to many reasons, including forgetfulness, lack of understanding, loss of instructions, misinformation, distractions, and many other reasons. Care Providers lack the right tools at the right time to help them quickly make complex decisions, for example the right antibiotic or the right care plan.

Challenge: In a world of connectedness and augmented reality, tools should be able to help patients calculate, understand, access, and remember self-care plans. Care providers should have access to tools that allow them to enter conditions or access data, such as asthma actions to quickly recommend a plan.

Need Data? Visit the Texas Children's Hospital table!

Prize:

Losei Dual Wireless Earbuds V4.1

Need Help: Slack us at #TCHEngage

Bonus:

Sickle Cell:

Problem: Managing sickle cell means managing a child's pain and recognizing the signs of a "crisis" (severe pain) and intervening early

Challenge: Create a way for families to track signs/pain and alert them to possible interventions.

Antibiotics:

Problem: Infection diseases can be treated with antibiotics focused on a wide range of bacterium or can be narrowly focused on a specific bacterium. The logic used by Doctors usually include triage of the various conditions including: source, causation, urgency, etc.

More information can be found at
<http://www.microbiologynutsandbolts.co.uk/how-to-choose-an-antibiotic.html>.

Challenge: A tool or AI solution to augment doctors' ability to recommend an antibiotic prescription.

Asthma:

Problem: Families struggle to recognize when a child's asthma is getting worse. They also forget to give prevention medicines regularly (should be taken daily)

Challenge: Develop a solution to help families: Manage their medications, understand the role of the different asthma medications, recognize as symptoms worsen and recommend how to intervene. See spotlight tool.

Hint: Metered-dose electronic inhalers that record the date/time of inhaler actuations exist, but are expensive. Medication dispense data from the EMR, Health Plan, and/or electronic prescription tracking systems (like SureScripts) can be used to track/trend medication compliance using research-backed calculations like MPR (Medication Possession Ratio) over multiple prescribed medications.

Build a framework to regularly evaluate adherence for asthma medications, with the goal of identifying patients who could benefit from electronic monitoring of dosing. Furthermore, this platform should be able to incorporate data from metered-dose electronic inhalers into easy-to-evaluate reports for primary care physicians.

See attached "stoplight" tool for care coordination for asthma patients.

MY EVERY DAY ASTHMA ACTION PLAN

GREEN ZONE PLAN



When I am in my
GREEN ZONE:

- No cough
- No wheeze
- No chest tightness

I take this medicine EVERY DAY to keep my ASTHMA in CONTROL:

_____ (name of medicine) _____ (dose), _____ times a day

_____ (name of medicine) _____ (dose), _____ times a day

Before exercise I take _____ (name of medicine) _____ (dose)

Other EVERY DAY medicines I take are:

Insert between green and yellow zones: Use a spacer with metered dose inhalers. Rinse mouth after using inhalers.
Avoid asthma triggers including: smoke, strong chemicals, colds and flu, and things I am allergic to such as: _____

YELLOW ZONE PLAN



When I am in the
YELLOW ZONE:

- Early asthma symptoms
- A slight cough or wheeze
- The start of a cold

For QUICK RELIEF of asthma symptoms I take:

_____ (name of medicine) _____ (dose), every _____ to _____ hours

For ASTHMA CONTROL I take:

_____ (name of medicine) _____ (dose), _____ times a day

I also take these medicines:

I CALL MY DOCTOR if symptoms don't get better after _____ days

I go back to my GREEN ZONE plan when my symptoms go away

RED ZONE PLAN



When I am in the
RED ZONE:

- A persistent cough
- A persistent wheeze
- Breathing fast

For QUICK RELIEF of asthma symptoms I take:

_____ (name of medicine) _____ (dose), every _____ to _____ hours

For ASTHMA CONTROL I take:

_____ (name of medicine) _____ (dose), _____ times a day

See doctor promptly, additional medicine may be needed

_____ (name of medicine) _____ (dose), _____ times a day

I also take these medicines:

**I need medical
attention.**

I also take these medicines:

CALL DR. _____ **AT** (_____) _____



DANGER ZONE: CALL 911 or go to nearest emergency room if:

- Breathing very hard or fast
- Breathing so hard I can't walk or talk
- Sucking in the stomach or ribs to breathe
- Lips or fingertips look blue

I NEED IMMEDIATE HELP – CALL 911 or go to the emergency room !



**Questions? Call the 24 hour, 7 days a week
TCHP Nurse Help Line: 1-800-686-3831**

Overcoming Barriers (check family's most common barriers to care)	
Barrier:	Action point:
Difficulty refilling medication	Request refill 7 days before empty; sign up for automatic refills
Difficulty remembering to take daily medications	Discuss finding a good routine with school nurse and/or healthcare provider
Do not think medication is working	Discuss concerns with your healthcare provider
No transportation to medical appointments	Call TCHP Member Services [insert numbers]
Have other questions about diagnosis or medications	Discuss with healthcare provider and/or call TCHP Member Services to request a case manager
Difficulty making appointments	Call TCHP Member Services line [insert numbers]
Worried about medication side effects	Discuss concerns with your healthcare provider. Call the TCHP Nurse Help Line.

**Note for marketing- would like to add this barriers section below the danger zone—see the ADHD Stoplight Tool for reference—it has a similar barriers section.