TransformativeMed

A JOURNEY TO API-DRIVEN HEALTHCARE INNOVATION AT SCALE
Market-leading developer of **EHR-integrated apps** focused on acute care **inside the hospital**

- 2011 spin-out from the **University of Washington**
- Early solutions developed by **Dr. Erik Van Eaton** and others under an informatics fellowship while at UW Medicine
- Focused on **workflow optimization, clinical communication & collaboration** and **disease management** for both HER-embedded and mobile solutions
- All of our applications use **APIs** access to a robust set of EHR clinical and workflow data
- **120+ U.S. hospitals** use our apps
- **Zero HL7 2.3 interfaces built to date!!!**
OUR SOLUTIONS & TECHNOLOGY

APPLICATIONS & SOLUTIONS
- Daily care rounds
- Enhanced documentation
- Shift handoff communication
- Secure messaging
- Smart real-time notifications
- Insulin CDS
- Anti-coagulation CDS

OUR TECHNOLOGY
- Designed for the API-first world
- Cerner MPages™ & FHIR™-ready
- Seamless EHR security and context
- EHR-connected mobile
- EHR workflow components
THE API DATA WE ACCESS & UPDATE

**READ**
- Demographics
- Encounter details and history
- Prior visit history
- Laboratory results
- Nursing documentation and vitals
- Notes
- ALL other clinical results
- Intake & output documentation
- Medication administration records
- Active and historical orders
- Order set and plans
- Medication therapeutic classification
- Allergies
- Problems
- Diagnosis
- Custom/team patient lists
- Other random EHR workflow data...

**WRITE**
- Problems
- Diagnosis
- Simple orders
- Variety of results
- Notes
- Medication administration records
Our journey from HL7 2.3 to an API-first, EHR-centric world

The impact on IT and user adoption

The path to commercialization with FHIR
IT ALL STARTED WITH AN APP CALLED…

CORES (COmputerized REsident Signout)

AND AGCME WORKHOUR RESTRICTIONS

- Web-based app built by the Erik Van Eaton and others in 2003
- Went viral in 2004 across UW Medicine
- Integrated with Cerner using HL7 in 2005
- Saved thousands of hours and improved handoff safety
- Multiple controlled trial published
- Garnered academic interest beyond the UW Medicine
“There’s this cool app we used at UW called CORES, we should look into getting it here. Our residents are really struggling and need help.”

- Multiple physician groups at other health systems were petitioning IT to look into CORES and see what it would take
- One group even created a 10-minute professional video to pitch the solution to leadership
- The quick IT answer was… “HL7 = NO go”
- At one point, we offered to give it away to keep the research progressing, but IT still said NO!
- The cost of robust HL7 integration would have been significant and they had an existing backlog of prior requests that was always growing…
- It just wasn’t practical
A FORTUITOUS SOLUTION FOR APP INNOVATION WITH THE MPAGES TOOLKIT

1. In 2006, UW Medicine and Stanford Children’s proposed embedding web apps into Cerner along with EHR data access.

2. In 2007, MPages was born. It provided the ability to embed contextual, secure web apps into the EHR along with something fairly new: API-like on-demand access to the EHR data using AJAX.

3. By 2008, it was clearly going to be a run-away hit. It unlocked creativity and innovation that had been sitting dormant for years.

4. In 2009, we ported the entire CORES application to MPages, removing all HL7 interfaces.

5. By 2010, a few hospitals were licensing CORES directly from UW’s Center for Commercialization.

6. In 2011, TransformativeMed was born to help commercialize healthcare apps in an API-first world, EHR-centric world…

7. By 2012, we realized we were WAY ahead of the market curve… healthcare is slow to adopt technology change and innovation 😊

8. In 2013/4, Cerner had started to develop their first SMART on FHIR proof of concept that actually used MPages as the initial architectural underpinnings.
TODAY THE FUTURE IS SMART ON FHIR

"Roads? Where we're going, we don't need roads."
THE IMPACT OF APIs & EMBEDDING ON IT IMPLEMENTATIONS

BEFORE

- IT projects for 3rd party software were highly focused on data integration
- A backlog of HL7 interface requests kept most non-critical projects waiting for years
- HL7 was a barrier and often a reason to say “NO”
- Separate application UIs, repeat authentication and duplication of data entry drove users away from promising innovation
- Out of sight → out of mind

AFTER

- Focused on clinical workflow, impact and benefit. We spend almost no effort engaging with IT technology teams
- MPages requires some basic data mapping, but FHIR will help to improve this with it’s semantic approach
- With MPages, integration is no longer addressed as a barrier… this same world view will spread to FHIR
- **Seamless integration drives user adoption and delivers value**

“We prefer MPage applications over other approaches. They align with our strategy of investing in the EHR where our users are already working”

- Christiana Care IT Director
MOVING TO SMART ON FHIR
A COMMERCIAL PROSPECTIVE

WHY WE PLAN TO MOVE TO FHII
EHR agnostics, semantic data and standards based. Opening access to new markets such as Epic, Allscripts and Meditech.

WHEN ARE WE MOVING?
We think the time is right to start exploring this transition with hospital partners that have expressed interest. TransformativeMed is unique in that we are already a robust user of API data. Today this is a story about APIs and EHR-embedding. Tomorrow the story will be about SMART on FHIR.

WHY WE HAVEN’T MOVED YET?
Technology maturity, readiness, robustness and awareness

IMPORTANT CONSIDERATIONS...
• Performance and scalability
• App-store economics (fees)
• Versus app-store benefits (sales channel???)
• EHR-vendor control vs. openness
• Market maturity, awareness and timing...