The *eClinician** Platform

JBS is a proud Phase 1 and Phase 2 winner of the Health Resources and Services Administration (HRSA) Maternal and Child Health Bureau Grand Challenge: *Addressing Opioid Use Disorder in Pregnant Women and New Moms*. Our response to HRSA's Challenge provides a mobile decision support application (i.e., *eClinician*) or "virtual clinical guide" to health care providers and educators in diverse medical settings.

A Clinical Support Decision-Making Tool: *Making Quick Decisions with Confidence*

The premise of our *eClinician* platform is simple: you can't carry a human expert in your pocket, though that is frequently exactly what you need. Health care providers across medical settings need answers and support. This app even provides support in remote, under-served, under-resourced and under-trained settings.

Leveraging AI Technology:

Our platform provides a few fundamental techniques: the text messaging interface, the conversational artificial intelligence (AI), and the clinical knowledge repository.

The app takes the system integrator's approach to advanced technology. By leveraging best-of-breed and open source implementations of power and complex technologies, we inherit the stability of robust, well-tested frameworks and avoid the "bleeding edge."

Industry-Standard Techniques:

- Mobile app with familiar, user-friendy interfaces, including "text messaging"
- Conversational AI common to scalable, user-support applications
- A clinical knowledge repository to gather, maintain, and deliver evidence-based clinical support via multiple channels

Summary & Future Directions

eClinician: provides accessibility, sustainability, impact, and innovation – all in one solution
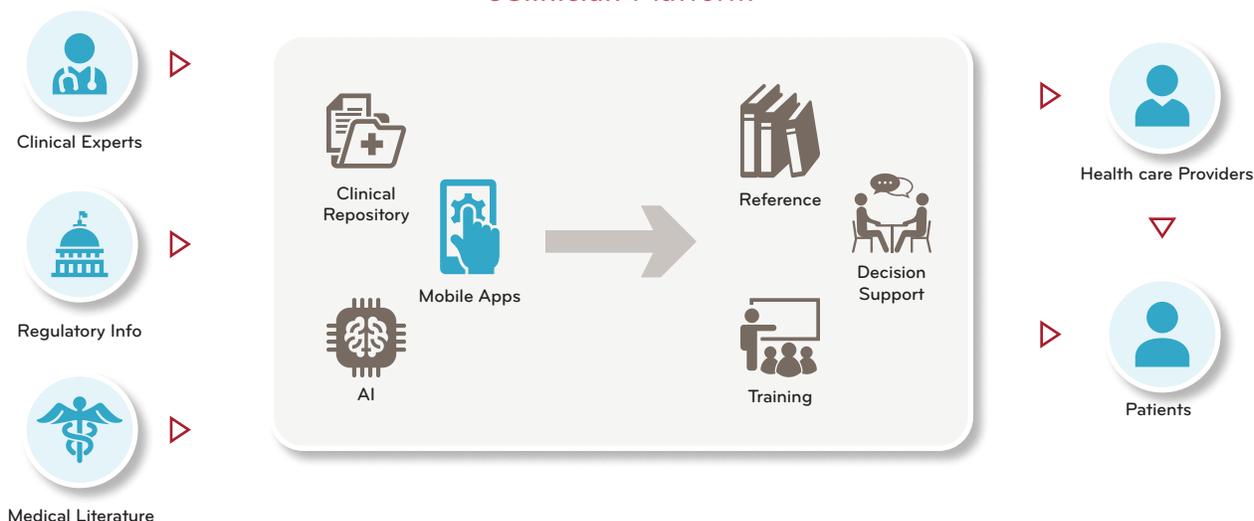
Clinical
- Workflow adaptability
- Translation to other illnesses/ diseases
- Clinician training tool
- Monitor neonatal intensive care unit costs (NICU)

Technical
- Power of common devices (e.g., iPhone, android)
- Access information without Wi-Fi connection
- Intended for open source – unlimited opportunities for an impact
- Minimal operating costs

eClinician Platform

Content focus—care and support of the mother-baby dyad in the postpartum period

– One-third of maternal mortality happens in the postpartum period.

– The risk of relapse to substance use is high in the postpartum period.

– Many mother-baby dyads affected by OUD are "lost to follow-up" once they are discharged from the hospital.

– There are many apps available to support the dyad during pregnancy, while few support evidence-based care postpartum.

– Continuing to support provider-focused, evidence-based care postpartum has the potential to reduce readmissions and health care costs.

– Provider guidance will be reinforced for the mother-baby dyad with patient, appropriate content.

PostPartum is the "4th trimester"

– It is functionally determined by insurance coverage.

– Medicaid coverage is 60 days - while Centers for Disease Control and Prevention (CDC) defines the postpartum period as 12 months and the March of Dimes also recommends 12 months, as well.

Pilot Test Results:

Multiphase Pilot: Real-time feedback from health care providers practicing in diverse clinical settings (n = 13, Private practice, hospitals, and community health clinics in urban, suburban, or rural settings); Pilot testing focused on clinicians who may encounter babies exposed in utero to opioids and at risk of Neonatal Abstinence Syndrome (NAS) /Neonatal Opioid Withdrawal Syndrome (NOWS)

Results: Evidence-based and ease-of-use criteria based on the American Psychiatric Association's model for assessing mobile health apps:

• Nearly **75%** of participants agreed the mobile app provided evidence-based content.

• More than **50%** found the mobile app easy to use; improved usability has already improved results.

The app was used by practicing clinicians during our pilot (Summer 2019):

• In 1 week, **29** babies were seen by **7** clinicians.

• **8** babies were seen using the *eClinician: M&B OUD* app.

• **2** babies were kept in the nursery with the mother as a result of the information obtained from the app.

• No babies were referred to the NICU.

For Phase 3 of HRSA's Grand Challenge

We need to conduct a large-scale pilot of the mobile app. **We welcome your participation.**
Also, the technology lends itself for application to other medical areas of need.

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