

# ASSESS DATA QUALITY OF BIRTH DATA FIELDS IN EHR FOR PRE-POPULATING A BIRTH CERTIFICATE USING FHIR

*The California Integrated Vital Records System (Cal-IVRS) Project*

Vira Danak Bhatt

Technical Project Manager (Cal-IVRS)

Amy M. Sitapati, MD

Clinical Professor, Department of Medicine

Division of Biomedical Informatics

UC San Diego School of Medicine

University of California, San Diego Health System





# BIRTH EHR DATA QUALITY AGENDA

- Overview of Challenge
- Findings
- Lessons Learned
- Next Steps



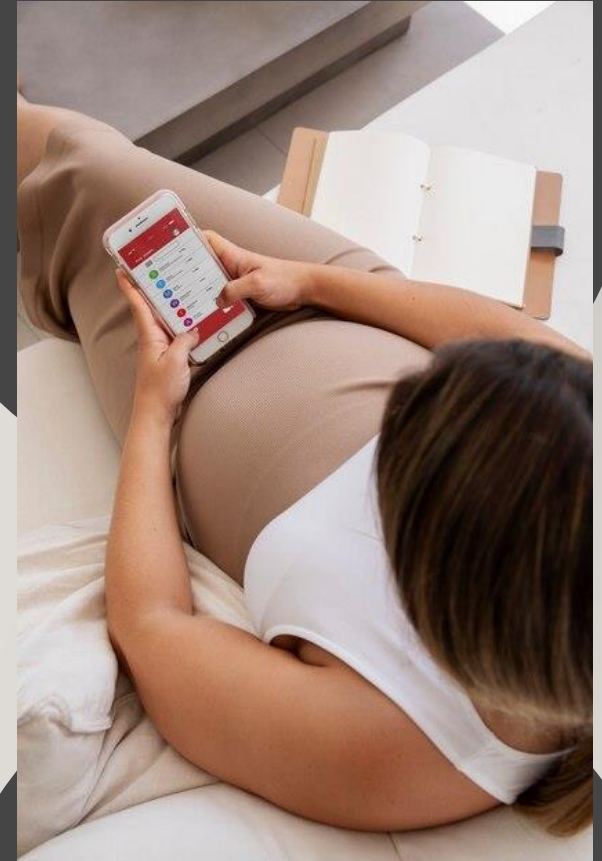


# OVERVIEW

- Cal-IVRS - is California Integrated Vital Records System
- Annually CA has an estimated 420k births, all maternal and newborn data is managed by the birth clerk in the hospital using a *paper worksheet*. This paper is abstracted from the electronic health record and then manually entered into Electronic Birth Registration System (EBRS).
- This pilot project includes implementation of a FHIR interface to improve data collection and quality. This integration will assess the quality of the key birth data fields in EHR (Epic) to check the feasibility of a more streamlined FHIR data sharing with EBRS.
- We can implement BFDR standard and expand the pilot implementation using an interface engine

## Objectives of EHR data acquisition:

- *Improve birth clerk experience and reduce documentation burden* through electronic health record birth data acquisition
- *Improve data quality* through streamlined EHR data retrieval to reduce duplicate data entry





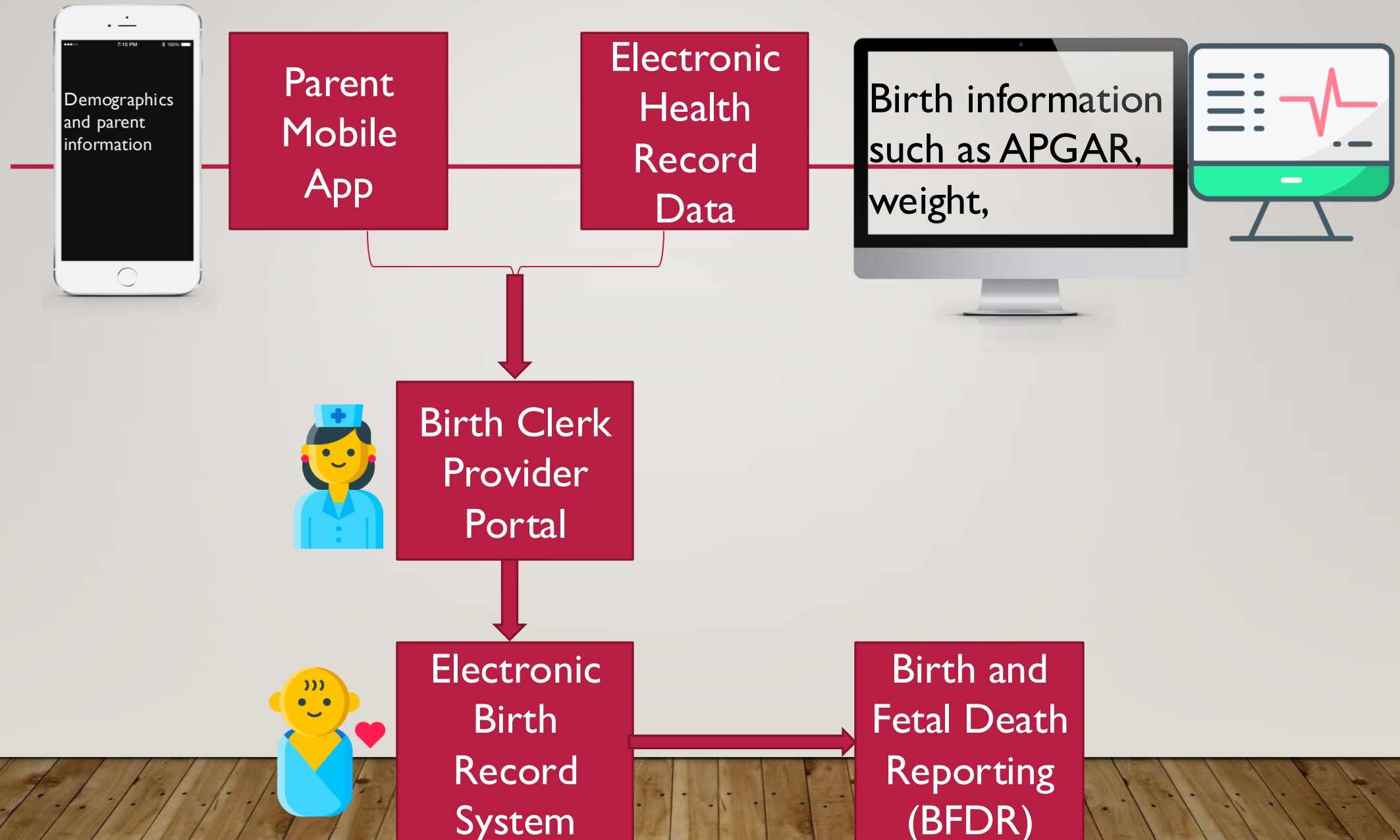


## OBJECTIVES

- Develop and assess systems capacity to maintain and implement FHIR based interoperability with EHR and EBRS
- Assess workflow and usability of the key birth data fields in EHR
- Verify if the required birth data is in the FHIR interface implemented by the EHR vendor



# Overview of the Approach to Data Integration





# FOUR KEY FINDINGS BIRTH EHR DATA QUALITY

---

- 1) Data Mapping and Content
- 2) Technical Challenges
- 3) Knowledge Template for Mapping
- 4) Steps for Validation

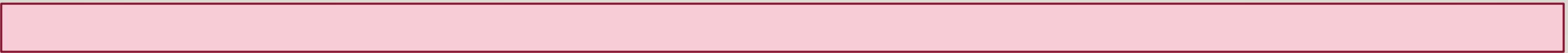




# Finding I:



## Finding 2:





## Finding 3:



## Finding 4:





# FINDINGS



- (1) EHR has rich fetal birth data with contextual information not typically connected
- (2) Mapping and parsing of the data is a significant volume of work currently
- (3) Phasing work into easy and more difficult implementation steps reduces the benefit to the birth clerk who has to enter multiple systems
- (4) *“What is in it for the health system and why should they spend IT time/resources?”* Building new EHR related interfaces requires diverse team members with multiple skills and a ready information services partner on the health side.





# PROMISE

- 1) EHR data may ease burden of redundant documentation and knowledge by birth clerks. This may improve
- 2) Efficiency as well as reduce the longitudinal knowledge required for the role.
- 3) Newer methods of information retrieval that incorporate AI/ML and GenAI may afford promise for EHR retrieval that significantly bolsters depth of the association and findings related to birth. This could advance the field related to maternal-child outcomes.
- 4) Templates with interoperability standards for the BFDR would improve the field.





# LIMITATIONS

- 1) Our EHR integration is not yet implemented because it is taking time to assess the data from the endpoints
- 2) Data currently have been retrieved from one electronic health record vendor at one health system which may impact broader findings elsewhere.







# meet OUR team

## **Department of Biomedical Informatics (DBMI) University of California, San Diego Health System**

- Dr. Michael Hogarth (PI)
- Ravinder Atwal (CTO)
- Edwin Bean
- Angelina Cordaro
- Brian Fox
- Patrick Mao
- Jeff Engel and Lani Lee (UCSDH Information Services)





# Questions?



# THANK YOU

