

# HL7 Mobile Health Standards Transforming Healthcare

Mobile Health Work Group  
2015



# HL7 Mobile Health Work Group

## Mission

“The HL7 Mobile Health Work Group creates and promotes health information technology standards and frameworks for mobile health.”

## Charter

- Identify data standards and functional requirements that are specific to the mobile health environment
- Identify and promote mobile health concepts for interoperability as adopted and adapted for use in the mobile environment
- Coordinate and cooperate with other groups interested in using mobile health to promote health, wellness, public health, clinical, social media, and other settings
- Provide a forum where HL7 members and stakeholders collaborate in standardizing to enable the secure exchange, storage, analysis, and transmission of data and information for mobile applications and/or mobile devices.

# Mobile Health Work Group Co-Chairs

- Gora Datta

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- Matt Graham

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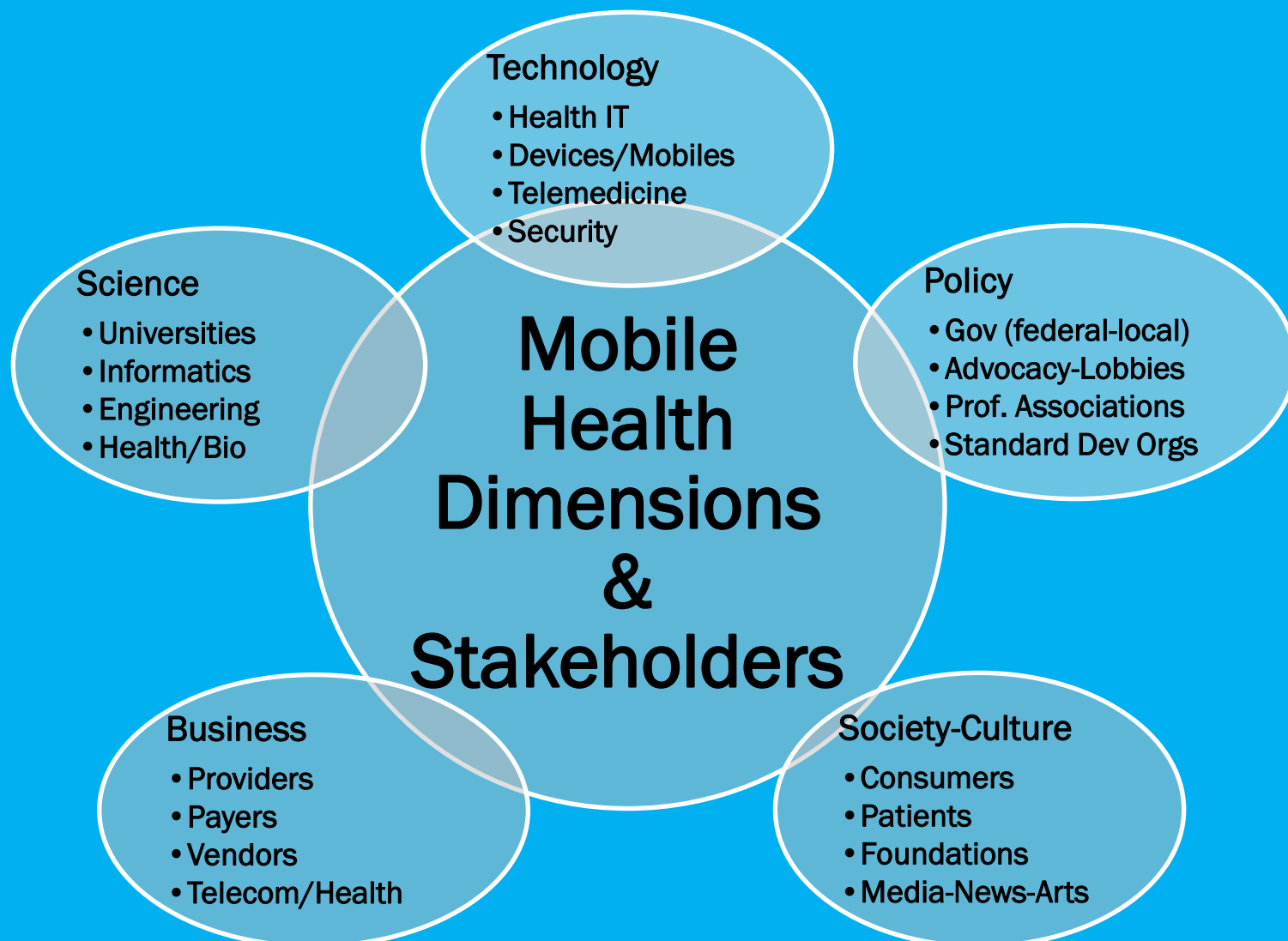
- Nathan Botts

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# Mobile Health Stakeholders



# What is Mobile Health?

- Many things to many people
- Mobility is the common factor
  - Mobile patients and service users
  - Mobile health and care providers
  - Mobile technologies
    - Extending reach, enabling innovation

# So What is Mobile Health?

- Extension of the EHR?
- PHR on a mobile platform?
- Consumer wellness/fitness apps?
- “new” way to access/provide care
  - MOBILE HEALTH
    - All of the above!
    - Not a vertical domain/sector
    - But a horizontal framework that cuts across and impacts all health care domains
- Scenarios illustrating the scope and benefits of Mobile Health

# A few Mobile Health Scenarios

- **Moving around a hospital**
  - EHR System services follow providers around a hospital
- **Independent living**
  - Assisted living drawing on a range of mobile services
- **Patient empowerment**
  - Patient involvement in care process across a wide range of lifestyles, including: support for long term conditions
- **Behavioural health**
  - Behavioural health support anytime, anywhere - especially *there!*
- **Secure/trusted messaging**
  - Getting the message(s) – for example on child health to hard-to-reach families
- **Public/Population Health**
  - Disaster Management to PH outreach

# Emerging HL7 Mobile Health Standards

## 1. mFHASt

- Mobile Framework for Healthcare Adoption of Short-Message Technologies standard
  - ✓ transport, structure and content

## 2. cMH2F

- Mobile Health Functional Framework Standard
  - ✓ Consumer Mobile Health Application Functional Framework -

## 3. FHIRframe

- Fast Healthcare Interoperability Resources for mobile devices open API standard

# Mobile Framework for Healthcare Adoption of Short-Message Technologies (mFHAST)

**Nathan Botts, PhD, MSIS**

**Senior Study Director**

**Center for Health Information Technology**

**WESTAT**

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# mFHAIST Goal

**To provide standards for communicating health services through short messages (e.g. SMS, Twitter, etc.)**



# Short-message Basics

- “Short-Message” encompasses the realm of technologies related to SMS, text messages, instant messages, Twitter, iMessage, USSD, etc
- Messages composed of approximately 140-160 characters
- Estimated that upwards of 200,000 SMS messages are sent every second
- Low-cost, low infrastructure, low learning-curve

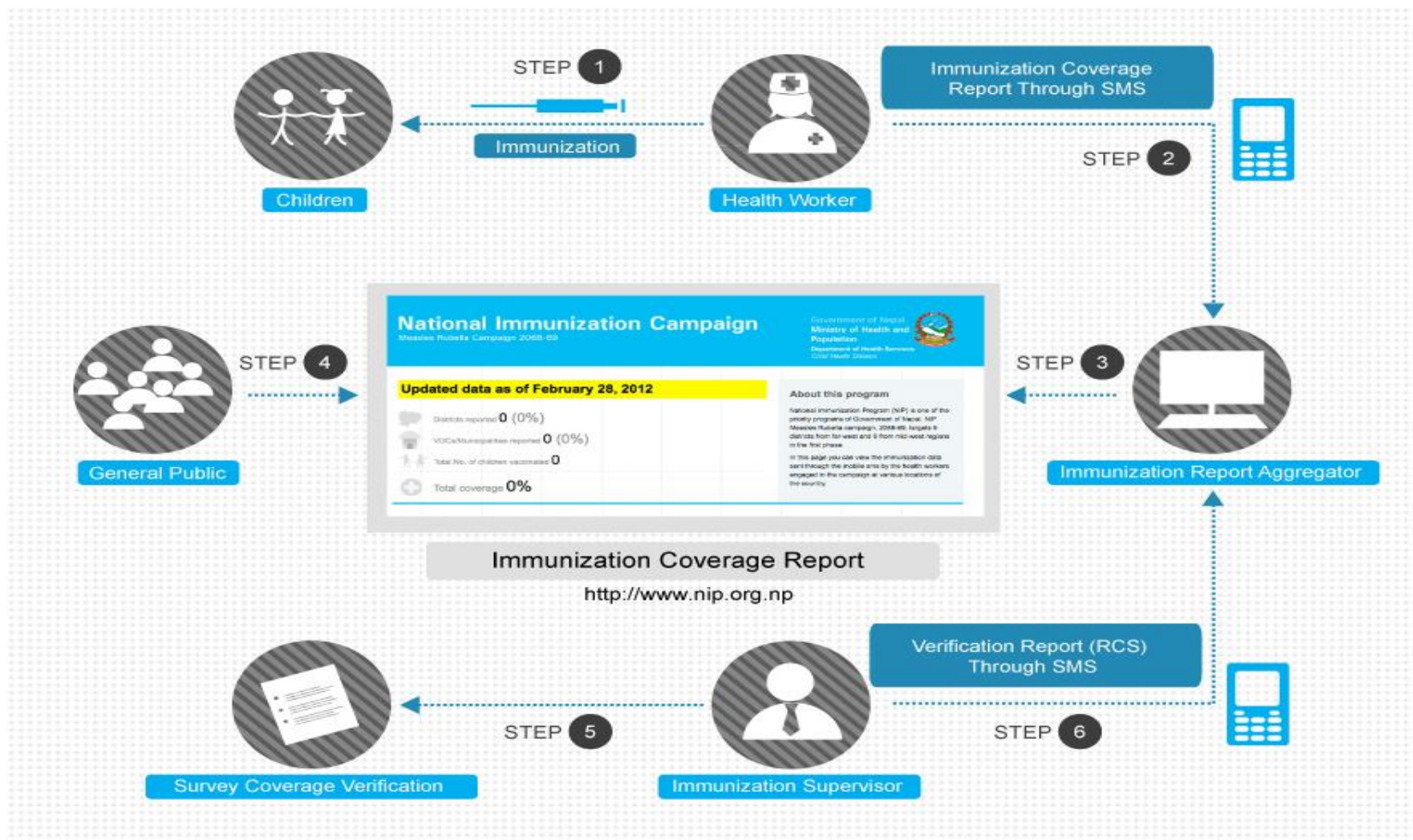


# Short-message Tech in Healthcare

Multiple global short-message studies have reported success in improving health outcomes and activities related to:

- Smoking cessation
- Diabetes
- Weight management
- HIV
- Medication adherence
- Appointment attendance

# SMS Use Case -Immunization



Reference: <http://www.nip.org.np>

# Short-message Barriers

- Ad-hoc implementations
- Lack of interoperability Standards
- Security/Privacy/Consent
- Message size
- Stateless (at its most basic implementation)
- Cost of message
- Governmental and organizational policy and barriers

# Consumer Mobile Health Functional Framework

Tim McKay, Ph.D., CISSP  
Kaiser Permanente

# **Consumer Mobile Health Functional Framework-Project Scope**

- **Define security, privacy and data standards for secure mobile health applications (apps).**
- **Provide industry guidance and common methods to enable the development of mobile health smartphone apps targeted to healthcare consumers/citizens.**
- **Provide a framework for security, privacy and the integration of data generated from apps into PHR and EHR systems as well as into other types of data repositories (e.g., personal data stores, population care systems).**
- **Standards will not address the content of such apps.**

# Consumer Mobile Health Functional Framework-Project Need

- **Standards for consumer smartphone health apps:**
  - **Focus on:**
    - **Security**
    - **Privacy**
    - **Data Controls**
  - **Allow for:**
    - **personal data tracking using mobile devices**
    - **integration of patient-sourced information into a person's record of care**
    - **clinical decision making using reliable, relevant information**

**The proposed project will develop a framework against which Mobile Health Smartphone-based apps can be certified for conformance.**

# Limited Project Scope

- **Limited by initial set of use cases**
- **Focus on limited problem domain.**
- **Future iteration to add more use cases.**

# FHIRframe

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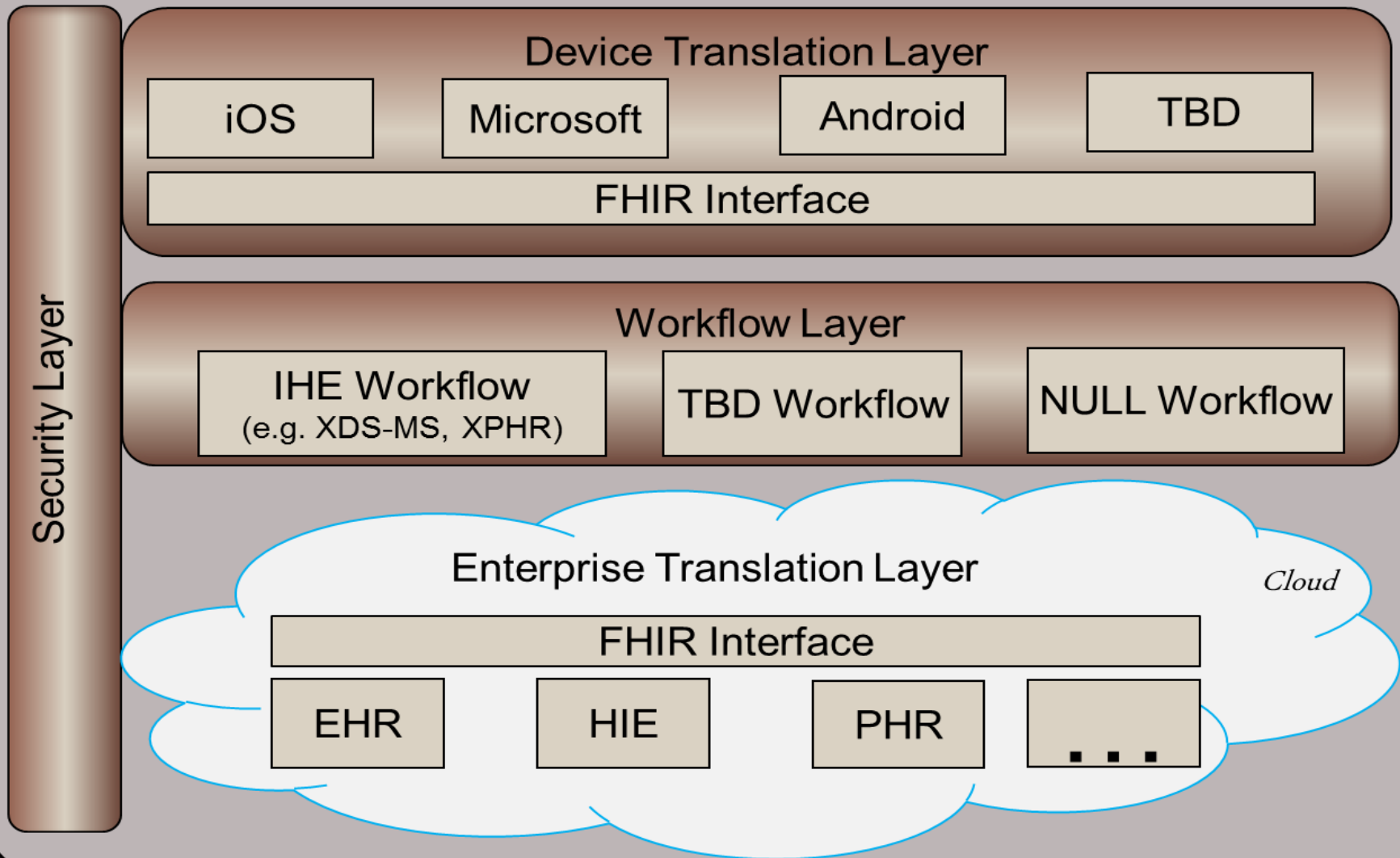
# **Fast Healthcare Interoperability Resources API-Project Need**

- **Various mobile devices are capable of capturing health events and information**
- **Many (thousands) health applications that capture data**
  - **Data in a variety of formats**
  - **Data cannot be shared with HIS**
  - **Data cannot be shared across apps/devices**

**The project develops an open API specification that eases the creation of interoperable mobile health applications.**

- **Develop a set of APIs that ease the utilization of FHIR as standard for data for mobile applications:**
  - **Data capture from medical devices**
  - **Data storage on smartphone or tablet**
  - **Data access with electronic health record**
- **Develop companion libraries and software development kit**
- **Support for multiple platforms**
  - **iOS**
  - **Android**
  - **Microsoft**
- **Support for various health information systems**

# FHIRframe



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# Mobile Health Friday Calls

**Dates:** Every Friday

**Time:** 11:00 AM Eastern U.S.

- Mobile Health Wiki page

[http://wiki.hl7.org/index.php?title=Mobile\\_Health](http://wiki.hl7.org/index.php?title=Mobile_Health)

- HL7 Mobile Health NEWS

[http://wiki.hl7.org/images/2/21/HL7\\_MHWG\\_NEWS\\_2013-02\\_V1Is1.pdf](http://wiki.hl7.org/images/2/21/HL7_MHWG_NEWS_2013-02_V1Is1.pdf)

# Resources...

- Mobile Health Alliance

[www.mhealthalliance.org/](http://www.mhealthalliance.org/)

- Continua Health Alliance

<http://www.continuaalliance.org/about-continua>

- PWC white paper – Touching lives through mobile health

[www.pwc.com/in/en/assets/pdfs/telecom/gsma-pwc\\_mhealth\\_report.pdf](http://www.pwc.com/in/en/assets/pdfs/telecom/gsma-pwc_mhealth_report.pdf)

# THANK YOU!

- Question?

# The HL7 Organization

- Founded in 1987, Health Level Seven International (HL7), with members in over 55 countries, is a not-for-profit, ANSI-accredited standards developing organization
- HL7 is dedicated to providing a comprehensive framework and related standards for the exchange, integration, sharing, and retrieval of electronic health information that supports clinical practice and management, delivery and evaluation of health services
- HL7's 2,300+ members include approximately 500 corporate members who represent more than 90% of the information systems vendors serving healthcare
- Over 43 healthcare standards from anatomic pathology to vocabulary

**Take a Flash tour at**

<http://www.hl7.org/documentcenter/public/training/IntroToHL7/player.html>

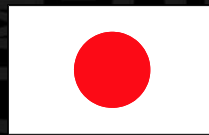
# An International Organization with Over 30+ HL7 Affiliates



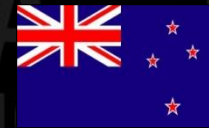
Argentina



Czech Republic



Japan



New Zealand



Republic of China (Taiwan)



Australia



Denmark



South Korea



Hungary



Finland



Romania



France



Russia



Germany



Singapore



Chile



Iceland



Spain



China



Hong Kong



Sweden



Colombia



India



Hungary



Switzerland



Croatia



Italy



Mexico



# HL7 Mission - Interoperability Goals

- **HL7's mission is to provide standards for interoperability that:**
  - improve care delivery
  - optimize workflow
  - reduce ambiguity
  - enhance knowledge transfer
- **Wide range of healthcare standards: clinical, clinical genomics, administrative, clinical research, electronic claims attachments, public health, personal health, etc**