Indian Health Service

Strategically Deploying Clinic BCMA & Automated Dispensing Cabinets in RPMS EHR While Laying the Foundation for HIT Modernization

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IHS PARTNERSHIP AUGUST 2023

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Agenda

Background of BCMA

Considerations For Implementation of Clinic BCMA

Deploying BCMA at Dilkon Medical Center

EHR Modernization WRAP Update
Business Process Modeling

Background of BCMA

What is BCMA?

- Bar Code Medication Administration (BCMA)
- Point-of-care application
- Validates medication administration

Clinical Functions of BCMA

- Identification of Patient
- Recording medication administration
- Positively identifying medications with bar codes
- Generation of lists of due medications

History

- Developed by the Veterans Health Administration (VHA)
- Deployed in the VHA hospital network in 1999
- IHS first deployed in 2011
  - Most inpatient practice sites deployed
  - 4 critical access hospitals remaining

Why are We Talking about BCMA in 2023?

- New Clinic BCMA functionality was released Summer 2023
- Expands BCMA functionality to allow use in ambulatory settings
  - ✓ Emergency Department
  - ✓ Infusion Clinic
  - ✓ OB Triage
  - ✓ Day Surgery
- Final push to complete all inpatient settings

Why is it Important for IHS to Adopt Clinic BCMA?

- Patient safety
- Standardization
- Accreditation and Survey Findings & Recommendations
- National Council of Informatics (NCI) and National Pharmacy Council (NPC) “Hot Topics”
- COVID-19 Critical Care Response Team (CCRT) Findings & Recommendations
- VHA Recommendations for EHR Modernization & Standardization Migration

Institute of Safe Medication Practices

- **2022-2023 ISMP** Targeted Medication Safety Best Practices for Hospitals – New Best Practice 18:
  - Maximize barcode verification prior to medication and vaccine administration
  - Expand use beyond inpatient areas

Considerations For Implementation of Clinic BCMA

Implementation Considerations

- Staffing
- Workflow
- Equipment

Staffing Considerations

- Sufficient pharmacists?
- Do staffing hours of pharmacists match clinic operation times?
- Timely processing?

Workflow Considerations – IMO

- Has Inpatient Meds for Outpatient (IMO) been deployed?
- What is IMO?

Workflow Considerations - IMO

- Milestones for IMO implementation
  - Drug file review and ordering menu creation
  - Workflow delineation
    - ✓ Provider order entry
    - ✓ Nursing considerations
    - ✓ Pharmacy processing
  - Site configuration and technical setup
  - Training

Workflow Considerations – IMO

Efforts to implement IMO across the agency

2021

1 day/week, 4 week series

118 total attendees across the series

2023

1 day/week, 5 week series

256 total attendees across the series

Workflow Considerations
Positive Patient Identification (PPI)

- Often concurrent with BCMA
- Effort to incorporate barcode labels for a wide variety of workflow needs across the patient care experience

  E.g. Specimen Collection at Bedside
- Decrease human error and improve patient safety

Technical Considerations

- Barcode Scanners
- Wristband Printers
- Other Barcode Printers
  - IV Labels
  - Nurse Labels
  - Unit Dose Labels
  - Patient Specific Labels
- Workstation Accessibility
- Medication Delivery System
- Automated Dispensing Cabinets (ADCs)

Indian Health Service
Deploying BCMA
Dilkon Medical Center

CAPT (RET) PETER VERMILYEA, PHARMD

DIRECTOR OF MEDICAL INFORMATICS

PARTNERSHIP AUGUST 2023

Dilkon Medical Center

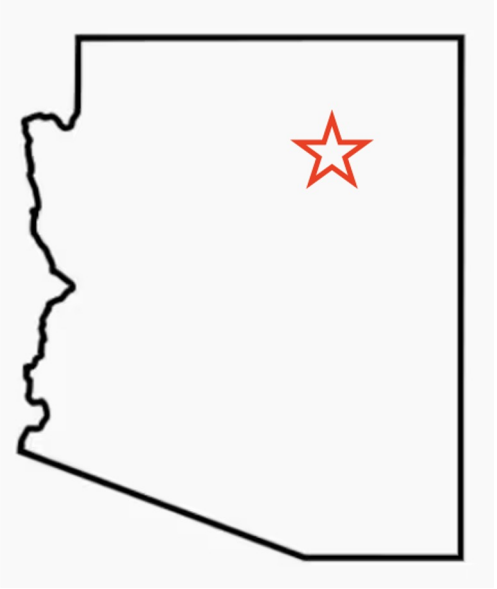
NEW MEDICAL CENTER OPENING WITH BCMA IMPLEMENTATION ON THE WAY TO EHR MODERNIZATION

Objectives

- Identify the need for BCMA at the Dilkon Medical Center
- Identify the need for a timeline for implementation, and steps to BCMA implementation
- Understand the relationship between BCMA and EHR Modernization
- Determine what processes worked well or did not work well

Dilkon Medical Center - Overview

- Located on the Navajo Nation in Dilkon, Arizona
- Approximately 40 miles north of Winslow, AZ
- Initial planning in the 1990s and groundbreaking in 2019
- Opening date: August 7, 2023
- Services: 24 hour Emergency, primary care, mental health, pharmacy, PT, optometry, podiatry and more.
- No surgery, L&D. Inpatient planned for 2024/2025



Dilkon Medical Center

Dilkon Medical Center - BCMA Planning (1)

Early Planning – 2018

- Inpatient Meds for Outpatient (IMO)
- ED Dashboard
- Drug file housekeeping

Dilkon Medical Center - BCMA Planning (2)

- Wristbanding of patients, label printing

  Talk to nursing early… large expense, plan >1 year in advance (Cost >$100k)

- Hardware planning, wall mounts vs. Workstation on Wheels (WOW), WiFi

Dilkon Medical Center - BCMA Planning (3)

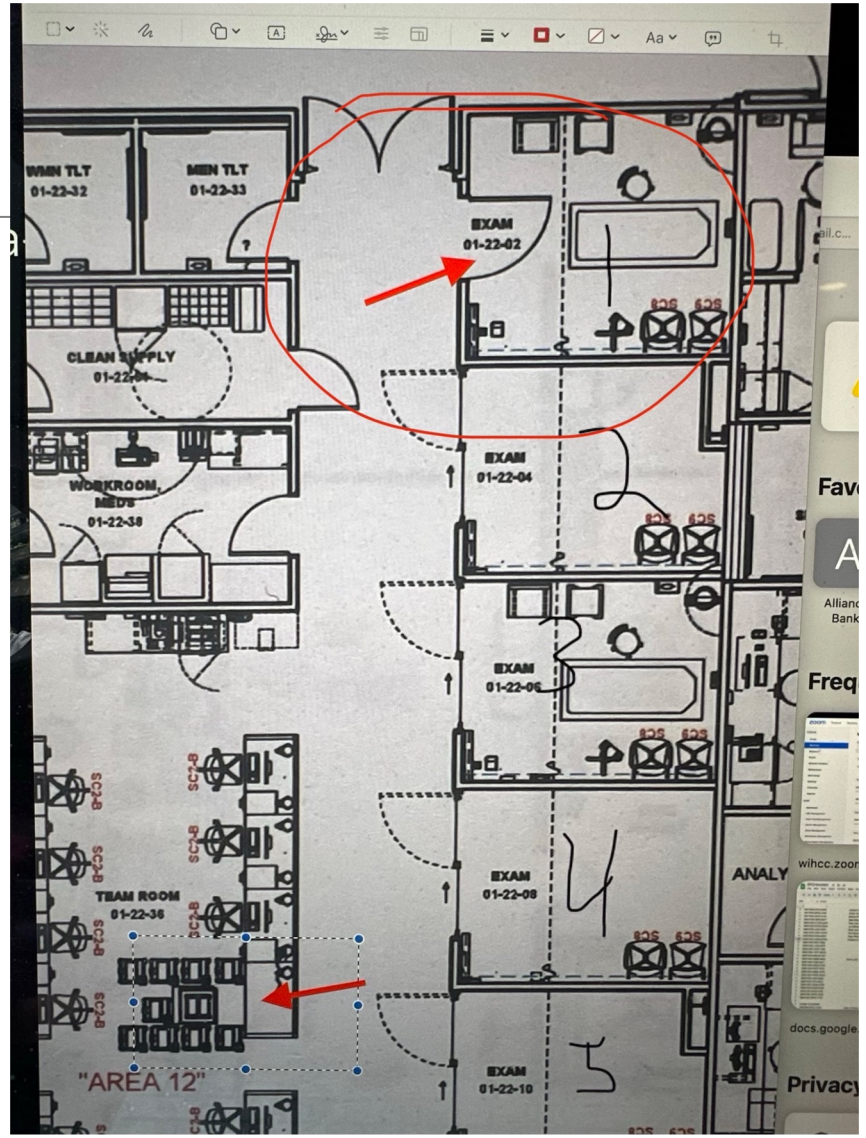
Determining Scope of BCMA Implementation

- Inpatient
- Emergency Department
- Urgent Care
- Infusion Clinics
- Outpatient Clinics

Dilkon Medical Center

Software Planning

- Work with IT staff early
- BCMA GUI on nearly all patient care PCs
- Patient rooms, pharmacy, Informatics
- RPMS menus and keys to nursing and pharmacy, patient registration



Dilkon Medical Center - BCMA

Workflow Considerations

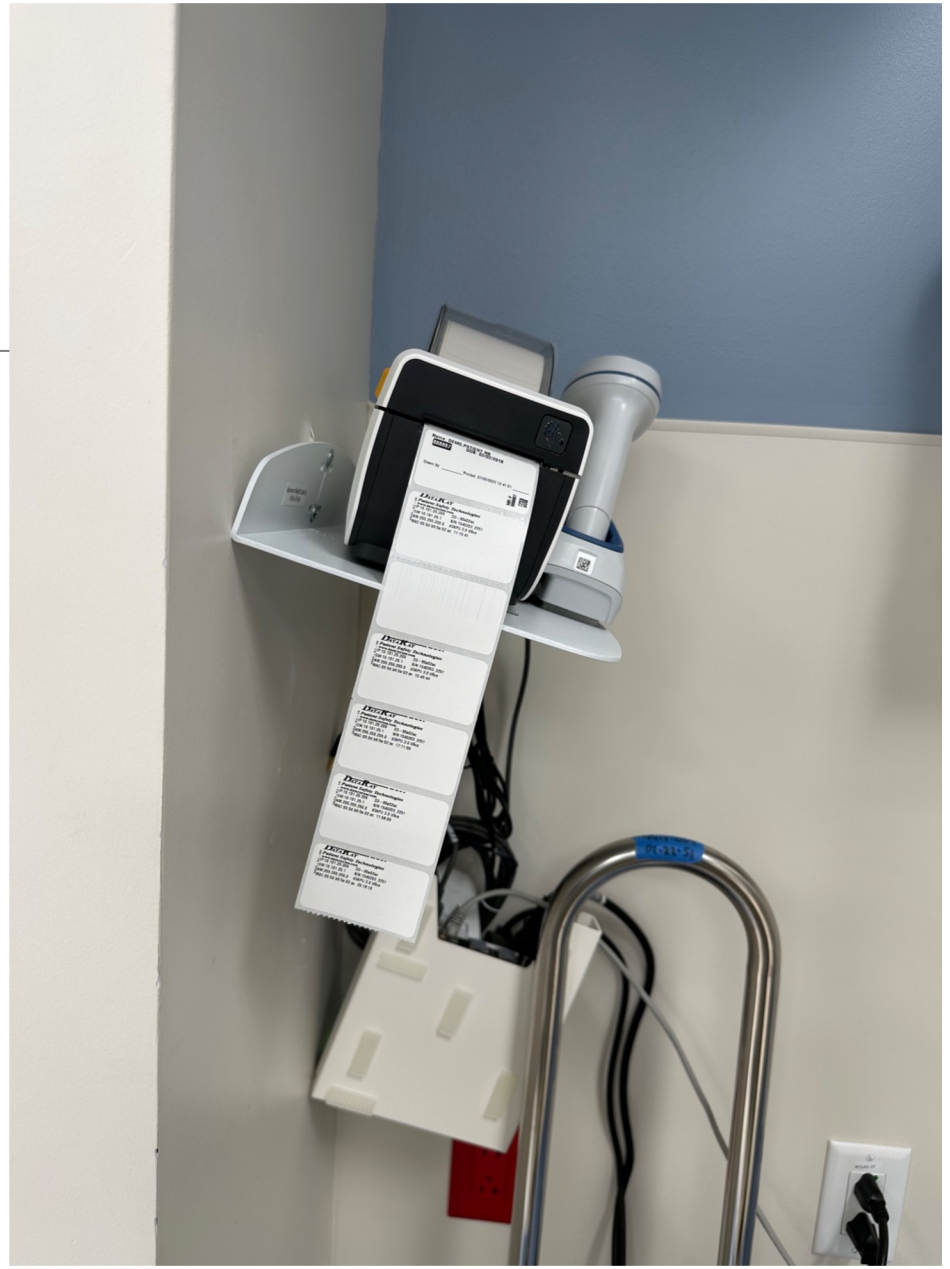
- When to apply wristband?

  E.g. Triage vs. Check-in

- Where to place printers?

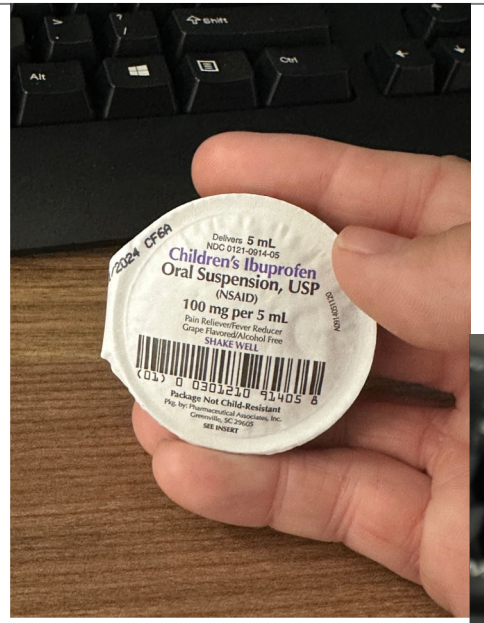
Dilkon Medical Center

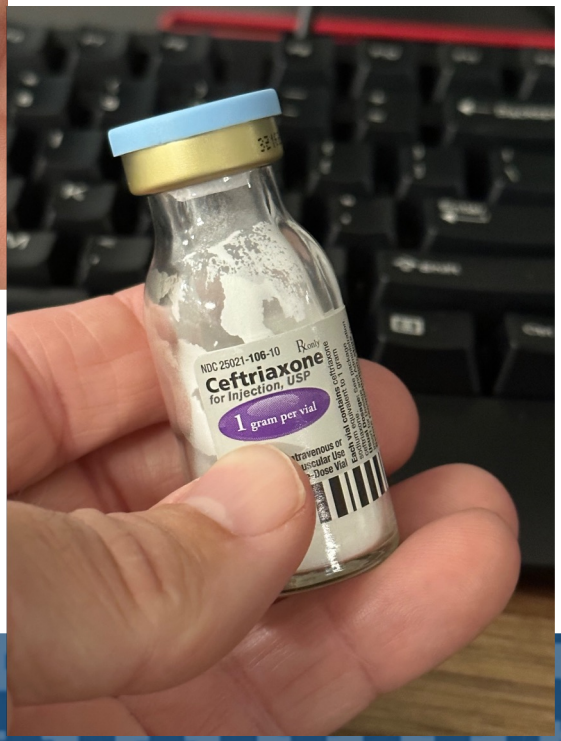
- Work with facilities and nursing… locate studs
- The sooner you get hardware mounted, the sooner you can begin testing



Dilkon Medical Center - BCMA Planning

- Medication purchasing for new facility
  - Unit dose
  - Premix vs. compounded IVs
  - Quick orders
- Automated Dispensing Cabinets
  - Size and contents, profiling/24 hr pharm



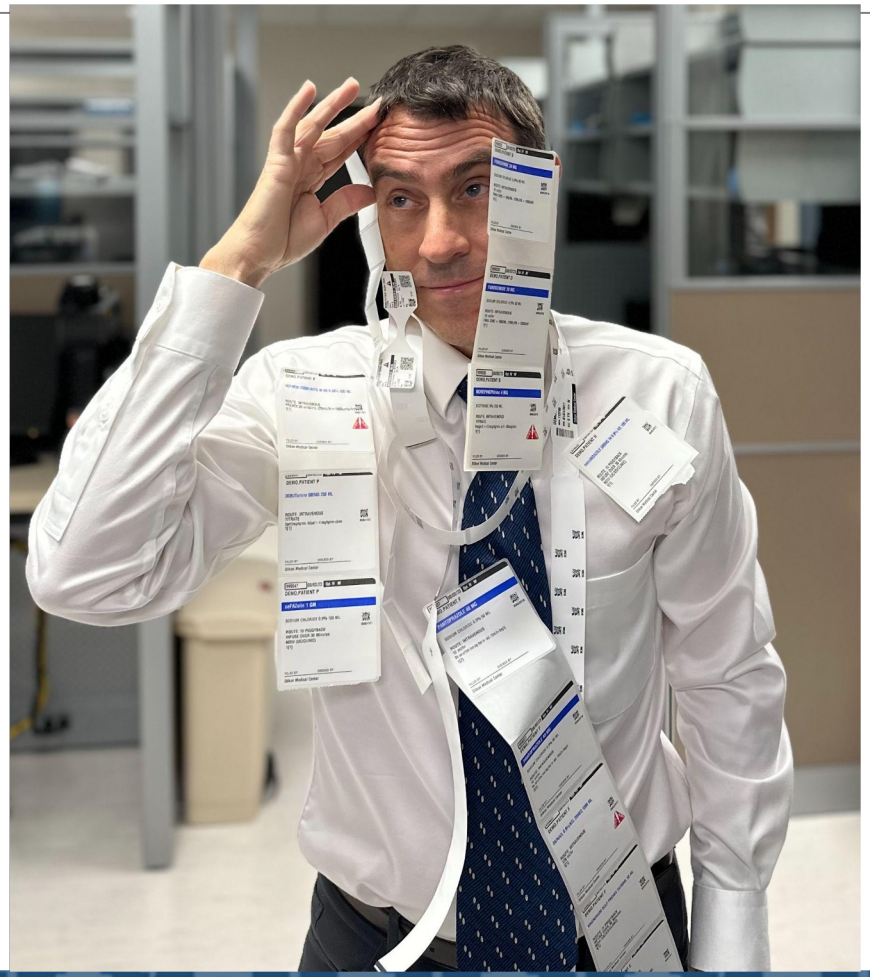


Dilkon Medical Center - BCMA

Link bar codes of medications to RPMS

- Manual process
- Engage all pharmacy staff

Dilkon Medical Center - BCMA



Dilkon Medical Center - BCMA

Problematic Medications

- Insulin, propofol, pain medications
- Fractional doses, half tablets
- Liquids
- Other: lidocaine, proparacaine, etc
- Vaccines - not a part of BCMA

Dilkon Medical Center - BCMA Training

Dilkon Medical Center - BCMA

EHR Modernization Considerations

- Standardizing workflow
  - Training sessions
  - Practice
  - Regular communication with staff

Dilkon Medical Center - BCMA

What went well, and what could have gone better?

- Solid OIT support team for RPMS and BCMA GUI installation
- Limited formulary eased scanning burden
- New ADC had limited inventory
- Hands-on training

<u>Wish List:</u>

- Needed more staff on site
- Needed more than a few weeks roll out

Questions?

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Indian Health Service

EHR Modernization
WRAP Update
Business Process Modeling

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EHR Modernization
What Can We Do Now?

JEANETTE KOMPKOFF

HIT MODERNIZATION & INNOVATION

Health IT Modernization
December 2022 CIO Newsletter – Jeanette Kompkoff

- We've all been hearing a lot about health information technology (IT) modernization and the coming replacement of the Resource and Patient Management System (RPMS), and some very reasonable questions to ask include:
- "When is all this going to happen?" **and**
- "What do we need to do to get ready?"
- In this article, we'll focus on that second question.
- Actual go-live of the first few sites is **more than two years** away, but there are things that our organizations can do to prepare for what is coming.

Health IT Modernization - What We Can Do Now?

- **Prioritize** your People – Address staffing concerns
- **Identify** change champions – **i.e.** Superusers, Package Owners
- **Catch up** on any billing, coding & accounts receivable
- **Engage** with Workflow Research & Alignment Plan (WRAP)
- **Optimize** RPMS EHR as delineated through the WRAP Best Practice/Future State Business Process Modeling (BPMN) Workflows & IHS Program Initiatives

  E.g. Telehealth, STI/Syphilis, ACT, ASQ, HOPE, EHR Component Functionality, PAMPI, 4DW
- **Keep** RPMS up to date with patches
- **Adhere** to life cycle management best practices for all technologies
- **Leverage** Health Information Technology (HIT) to improve safety and patient outcomes

  E.g. Clinic BCMA, Outpatient ADC Profiling, Smart Pumps
- **Routinely** monitor RPMS
- **Ensure** system administration process & backups are performed

Standardization - EHR Stabilization & Modernization
https://www.ihs.gov/hit/

- BCMA – Clinic BCMA – Profiled Automated Dispensing Cabinets (ADC)
- CHIT 2015 (Certified Health Information Technology)
- HL7 Data Transmission
- COVID-19 Vaccine CDC-IHS Data Management
- 21st Century Cures Act (21 CCA – Cures Bundle)
- IHS Four Directions Warehouse (4DW)– PAMPI+ & Migration of Data
  - Problems
  - Allergies
  - Medications
  - Procedures
  - Immunizations
  - Encounters

Indian Health Service

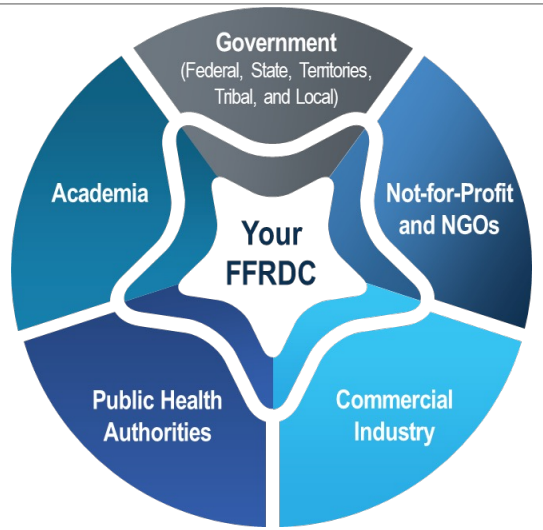
EHR Business Process Modeling

DAVID MADDIRALA, MD

MITRE CORPORATION

PARTNERSHIP AUGUST 2023

Federally Funded Research & Development Center (FFRDC)



Key Attributes

- Created by government — a federal entity
- Addresses key challenges of considerable complexity
- Analyzes technical questions with a high degree of objectivity
- Provides innovative and cost-effective solutions to government problems
- Does not compete with industry or develop commercial products
- Can perform functions that are "close to inherently governmental"
- Independent operator enables broad stakeholder engagement

[Federal Acquisition Regulation 35.017]

35.017 Federally Funded Research and Development Centers.

(a) Policy. (1) This section sets forth Federal policy regarding the establishment, use, review, and termination of Federally Funded Research and Development Centers (FFRDC's) and related sponsoring agreements.

(2) An FFRDC meets some special long-term research or development need which cannot be met as effectively by existing in-house or contractor resources. FFRDC's enable agencies to use private sector resources to accomplish tasks that are integral to the mission and operation of the sponsoring agency. An FFRDC, in order to discharge its responsibilities to the sponsoring agency, has access, beyond that which is common to the normal contractual relationship, to Government and supplier data, including sensitive and proprietary data, and to employees and installations equipment and real property. The FFRDC is required to conduct its business in a manner befitting its special relationship with the Government, to operate in the public interest with objectivity and independence, to be free from organizational conflicts of interest, and to have full disclosure of its affairs to the sponsoring agency. It is not the Government's intent that an FFRDC use its privileged information or access to installations equipment and real property to compete with the private sector. However, an FFRDC may perform work for other than the sponsoring agency under the Economy Act, or other applicable legislation, when the work is not otherwise available from the private sector.

(3) FFRDC's are operated, managed, and/or administered by either a university or consortium of universities, other not-for-profit or nonprofit organization, or an industrial firm, as an autonomous organization or as an identifiable separate operating unit of a parent organization.

(4) Long-term relationships between the Government and FFRDC's are encouraged in order to provide the continuity that will attract high-quality personnel to the FFRDC. This relationship should be of a type to encourage the FFRDC to maintain currency in its field(s) of expertise, maintain its objectivity and independence, preserve its familiarity with the needs of its sponsor(s), and provide a quick response capability.

MITRE

Your FFRDC: Unique Resource for Impact

Dedicated to solving complex health and human services problems

Sponsored by all agencies in the Department of Health and Human Services (HHS)

Administered by the Centers for Medicare & Medicaid

- objective insight in conflict-free environment
- long-term strategic partner
- unique vantage point across government
- deep expertise in health - policy – IT
- innovative approach that is interdisciplinary
- broad alliance of private-sector resources

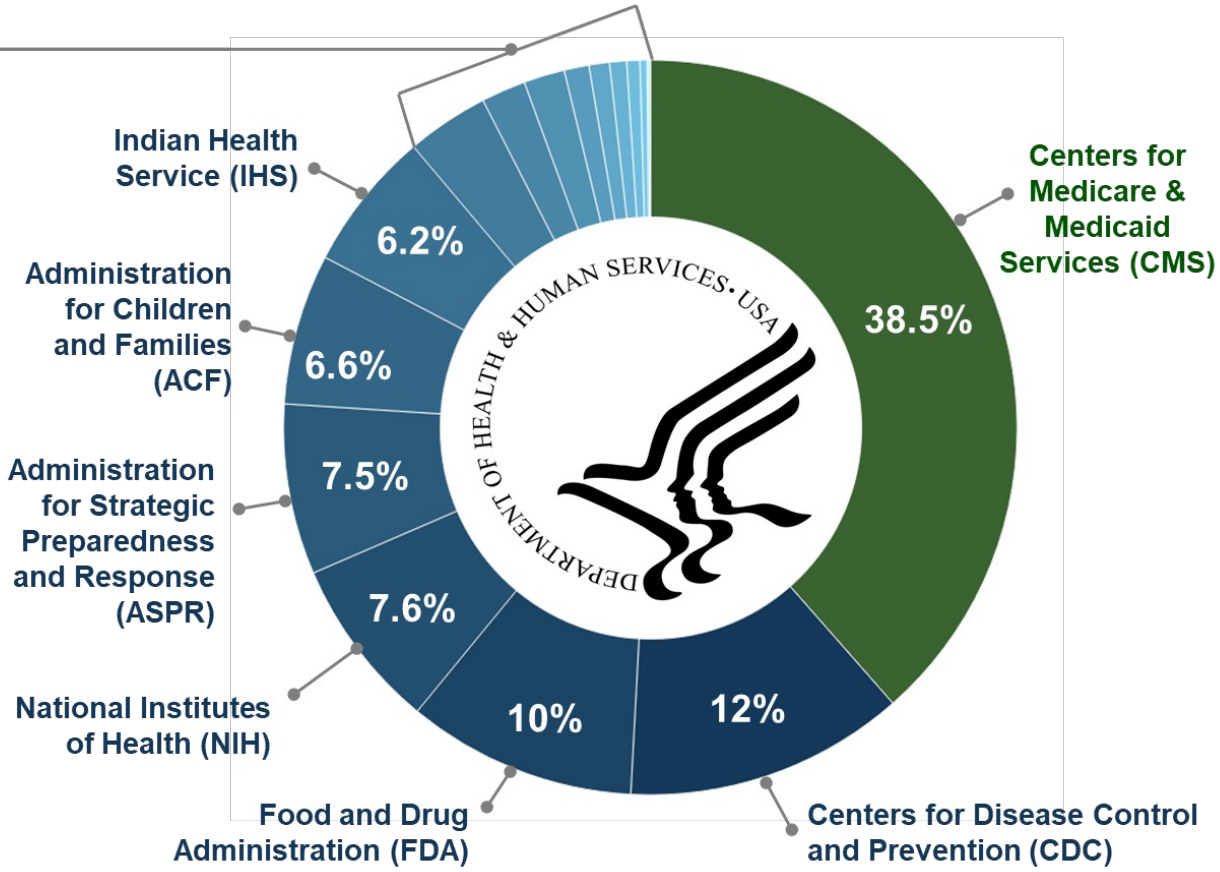
Connecting Across HHS and the Nation to Deliver Impact

Percentage of Health FFRDC Work in FY22, by Federal Sponsor

3.5% - 0.1%

- Federal Communications Commission (FCC)
- Health Resources and Services Administration (HRSA)
- Office of the Assistant Secretary for Health (OASH)
- Agency for Healthcare Research and Quality (AHRQ)
- U.S. Army Telemedicine and Advanced Technology Research Center (TATRC)
- Office of the National Coordinator for Health Information Technology (ONC)
- Assistant Secretary for Financial Resources (ASFR)
- Assistant Secretary for Planning and Evaluation (ASPE)
- Office of the Chief Information Officer (OCIO)
- Substance Abuse and Mental Health Services Administration (SAMHSA)

61.5% of FFRDC use outside CMS (blue area)



MITRE

Transforming the way we deliver care begins with realigning our processes

Targeted configuration of unique high-risk, problem-prone, and high variability workflows

IMPROVING CARE DELIVERY

Seamless, consistentt, rigorous processes across the field will drive efficiencies to deliver better care

ENHANCING PATIENT EXPERIENCE

Enhanced processes in telehealth, patient portal, and digital health applications expands our digital footprint and will enrich patient experiences and provide more seamless access to care

LEVERAGING DATA TO DRIVE OUTCOMES

Redesigned processes will improve data capture and data quality fostering innovative analytics to better understand our patient populations and drive improved outcomes

WRAP: From Challenges to Opportunities

With every challenge comes an opportunity

CHALLENGES

Mastery of the EHR by the User
Inefficient and disparate processes can present a challenge to initial and ongoing training and compromise EHR mastery

Configuring the EHR for the User
Lack of consistent, rigorous models that do not meet the needs of the user can negatively impact the adoption of the EHR

Listening to the User in Decision Making
Various clinical and business partners, dispersed across the country with unique needs, require consistent and deliberate engagement

OPPORTUNITY

Using the Models for Configuring, Testing, and Training
Use of models will be continuous and iterative, lasting through the EHR implementation and optimization

Leveraging the Models for Vendor Collaboration
Comprehensive models based on SME engagement will help inform the EHR vendor's configuration efforts

Empowering the User Via Engagement
Through consistent and deliberate engagement with user, models will ensure confidence and ownership in the new technology and form a more personalized EHR experience

IHS Health Information Technology Modernization Preparation for Vendor

"Too often clinics believe workflow should only be assessed after a vendor product has been selected and just before the health IT is implemented."

- **Agency for Healthcare Research and Quality (AHRQ)**

By understanding workflows and preparing for changes to them throughout the planning and implementation process, a clinic is better prepared for the workflow changes postimplementation.

Workflow Research Alignment Plan (WRAP) Overview

WRAP utilizes Business Process Modeling (BPM) to document shared best practice future-state workflows, supporting the configuration and implementation of the new EHR

FIELD ENGAGEMENT

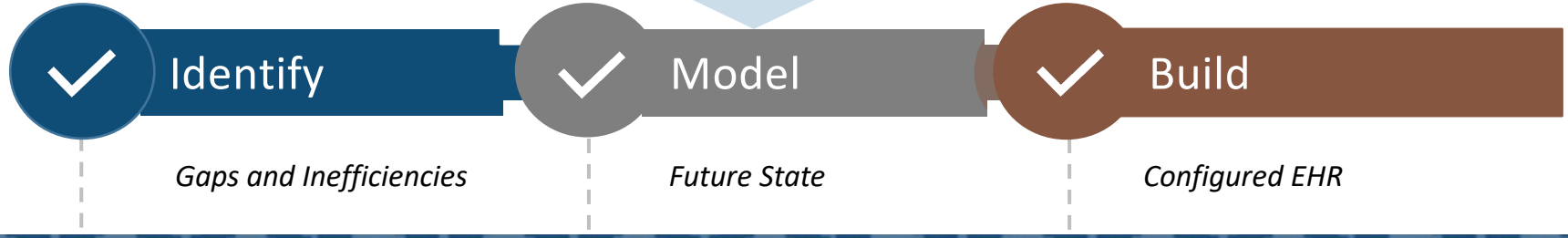
Engage IHS, Tribal Health Programs, Urban Indian Organizations (I/T/U) clinicians, business, and technical experts

COMPREHENSIVE APPROACH

Select specific and complex service lines (e.g., Emergency Department, inpatient care, primary care)

PARTNERSHIP

Use models to inform system build with new EHR vendor



How WRAP Helps HIT Modernization

WRAP is an ecosystem of tools and methods that allow for…

Shareability:
Models produced can be utilized and localized by another site or across multiple sites within the Indian Health ecosystem

Standardization:
Rigorous, thorough models creates a common understanding across Indian Health

Re-usability:
Models can be re-used depending on need, location, or uniqueness of site

Configurability:
Models provides the foundation to configure, not customize, an EHR software

Interoperability:
Models can help "connect the dots" between various systems and platforms

Extensibility:
Models are expanded or enhanced through a modular approach, where new functionalities or components can be added incrementally

ULTIMATELY ENHANCING PROVIDER-PATIENT INTERACTIONS

WRAP Summary

Phase 1: Environmental Scan
to collect internal and external information

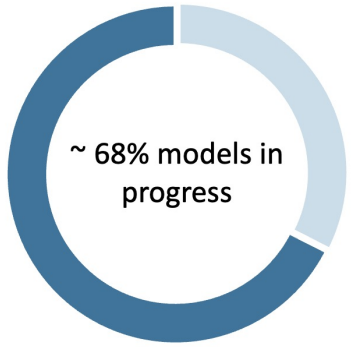
Phase 2: Conceptual
to form an overarching understanding of each process model

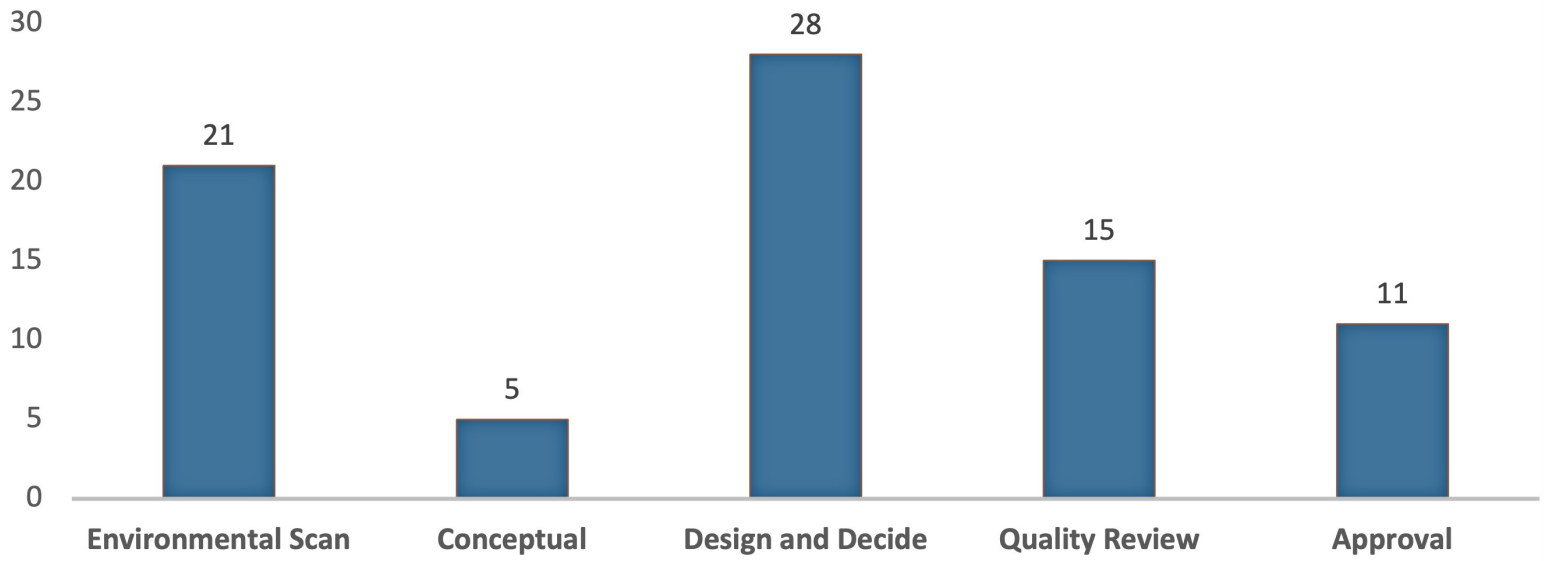
Phase 3: Design and Decide
to map out the future state models with IHS SMEs

Phase 4: Quality Review
to final check process models for clinical and technical accuracy

Phase 5: Approval
to approve models for Governance review and shared with EHR vendor

80 Process Models Identified





Prioritization and Categorization of Process Models

Models are prioritized based on 4 distinct criteria, and categorized into 22 service lines, of which 16 are in progress

Criteria for Prioritizing BPM Process Models (via Service Lines)

1 Core Functionality

Low — High

*Hospitalization**

- Essential service to the organization?
- Apart of the core business operations?
- Necessary to fulfill mission?

2 Uniqueness to IHS

Low — High

*Substance Use Disorder**

- Specialized program or focus area?
- Special configuration required in the EHR?

3 Volume

Low — High

*Community Health Aide**

- Number of patients impacted?
- Processes that consume staff time?
- Frequently performed procedures or services?

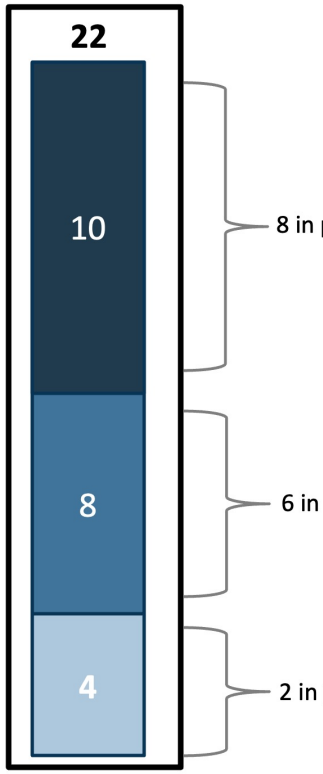
4 High Risk

Low — High

*Medication Management**

- Potential for harm to patient or impact to business operations?
- Increase of incidents or errors?
- Complexity of service?

Total Service Lines



8 in progress

- **Emergency Department***
- **Hospitalization***
- **Labor Delivery Recovery Postpartum***
- **Primary Care***
- **Residential Treatment Centers***
- Swing Beds
- **Substance Use Disorder***
- **Surgery***
- **Telemedicine***
- Urgent Care

Support Services

6 in progress

- **Community Health Aide Program***
- **Employee Health***
- Imaging
- **Laboratory***
- **Medication Management and Administration***
- **Nutrition***
- **PAMPI***
- Referral Management

Business Services

2 in progress

- Population Health
- **Public Health***
- Reporting
- **Revenue Cycle Management***

List of Models

The individual status of the 80 models in scope are listed below (Service Line not listed)

Phase 1:
Environmental Scan
to collect internal and external information

1. Admit to ICU from floor
2. Admit to Surgery from floor
3. Adult Follow up Visit
4. Adult Sick Visit
5. Allergies
6. ICU Medication Management
7. Imaging
8. Immunizations
9. Inpatient Medication Management
10. Medications
11. Pediatric Follow up Visit
12. Pediatric Sick Visit
13. Pediatric Well Child
14. Population Health
15. Procedures
16. Public Health Emergency
17. Referral Management
18. Reporting
19. Surgery Medication Management
20. Swing Beds
21. Transfer to another hospital from floor

Phase 2:
Conceptual
to form an overarching understanding of each process model

1. Blood Bank
2. Day Surgery, Post-op
3. Inpatient Revenue Cycle Management
4. Inpatient Surgery
5. Pathology

Phase 3:
Design and Decide
to map out the future state models with IHS SMEs

1. Administration Medication and Dispensation
2. Ambulatory Medication Management
3. Behavioral Health Aide
4. Chemistry / Hematology
5. Day Surgery, Day of Surgery
6. Day Surgery, Pre-op (Anesthesia)
7. Drug Dependency Unit
8. ED Boarding
9. ED Observation
10. ED Fast Track
11. ED Transition of Care
12. ED Treatment Decision
13. Fulfill Medication Order
14. Hospitalization
15. Labor and Delivery
16. Microbiology
17. OB Triage
18. Outpatient Revenue Cycle Management
19. Public Health Nurse
20. Public Health Threat
21. Postpartum
22. Problem List
23. Process Medication Order
24. Recovery Post Labor and Delivery
25. Refill Authorization Denial
26. Resolve Adverse Drug Event
27. Urgent Care
28. Youth Regional Treatment Centers

Phase 4:
Quality Review
to final check process models for clinical and technical accuracy

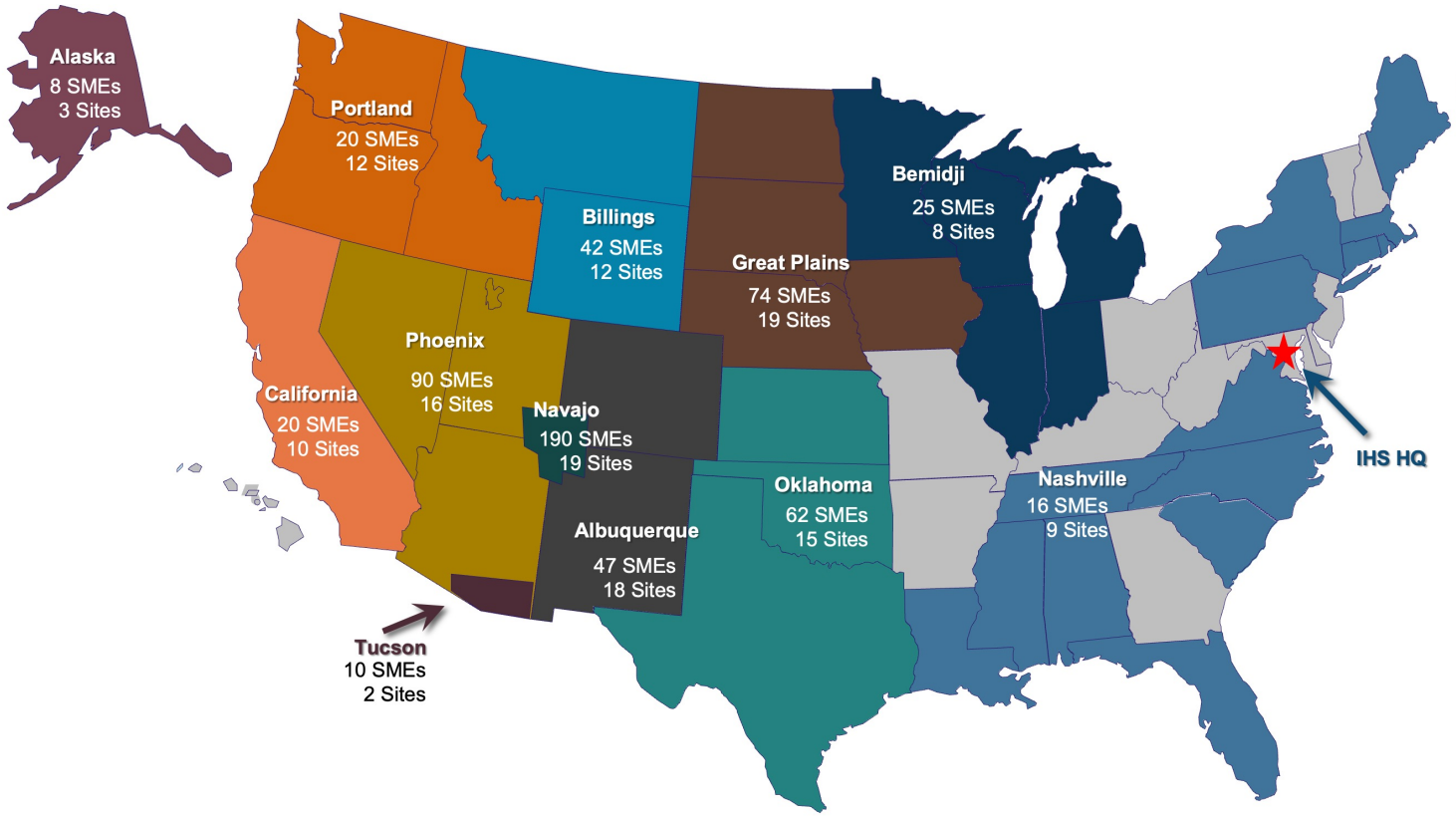
1. Adult New Patient
2. Community Health Representative
3. Day Surgery, Pre-op Clinic
4. Dental Health Aide Therapist
5. Emergency Department Medication Management
6. Emergency Department Point of Care Ultrasound (POCUS)
7. Home Telemedicine
8. Home with Assistance Telemedicine
9. In Clinic Telehealth
10. Inpatient RDN Screening and Consult
11. Medical Management of Inpatient Detoxification
12. Medication Review
13. Remote Telehealth
14. Remote Telehealth with Assistance
15. Substance Use Disorder, Primary Care

Phase 5:
Approval
to approve models for Governance review and shared with EHR vendor

1. Advanced Practice Pharmacist
2. Ambulatory Nutrition
3. Buprenorphine Bridge Program, Emergency Department
4. Community Health Aide
5. Employee Health Exposure – Emergency Department
6. Employee Health Exposure – Primary Care
7. Employee Health Immunizations
8. Employee Health Mass Wellness
9. Group / School Nutrition Event
10. Occupational Health
11. Public Health / Community Nutrition Home Visit

WRAP by the Numbers

As of August 1, 2023



I/T/U SME engagement throughout the sessions

201 WRAP Work - Sessions held between Sept. 2021 and July 2023

22 Service Lines

12 Areas Participating (plus IHS HQ)

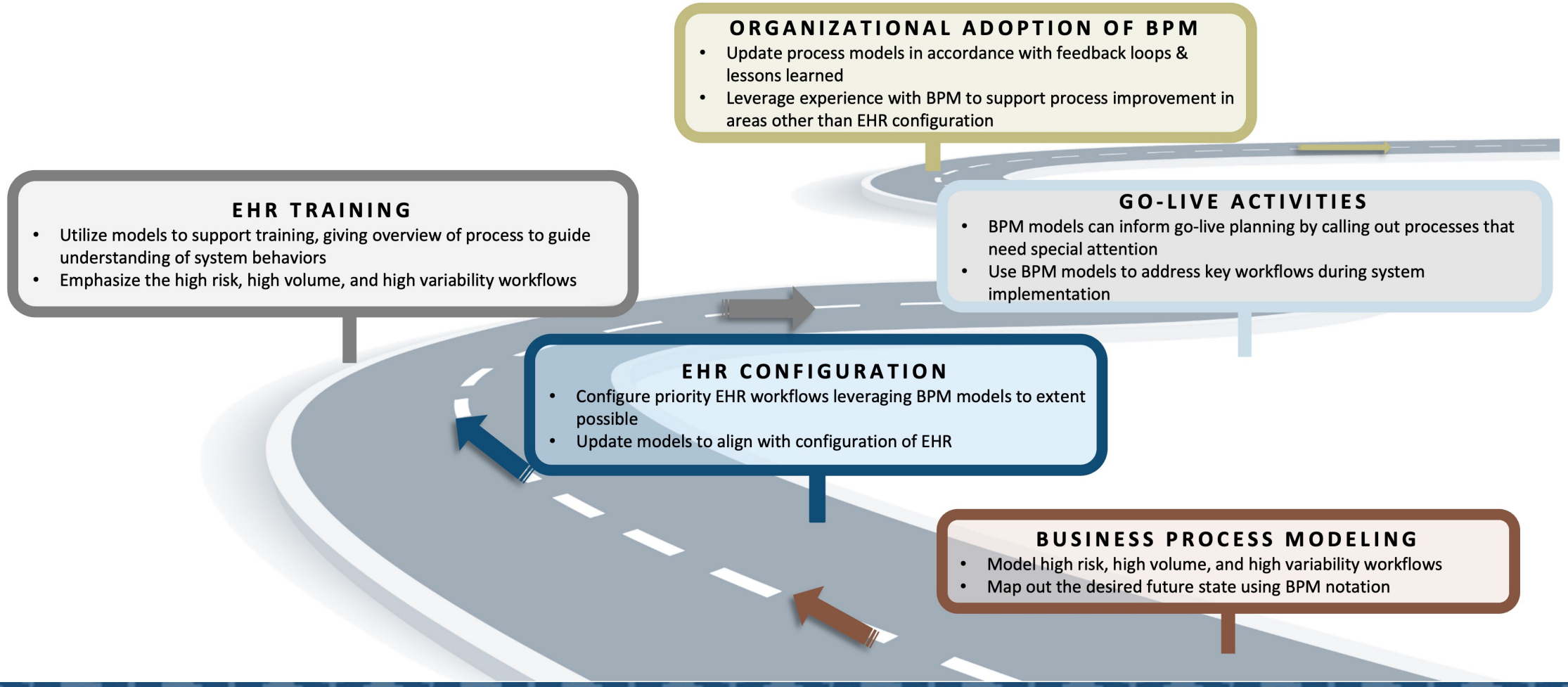
204 Sites of Care Participating (Station, Center, Clinic, Hospital)

1300+ Unique SMEs Participating

5300+ Participant Encounters

The Path Ahead with WRAP

WRAP lays the groundwork for configuration, training, implementation, and optimization of the new EHR



ED – Clinic BCMA
A System of Systems

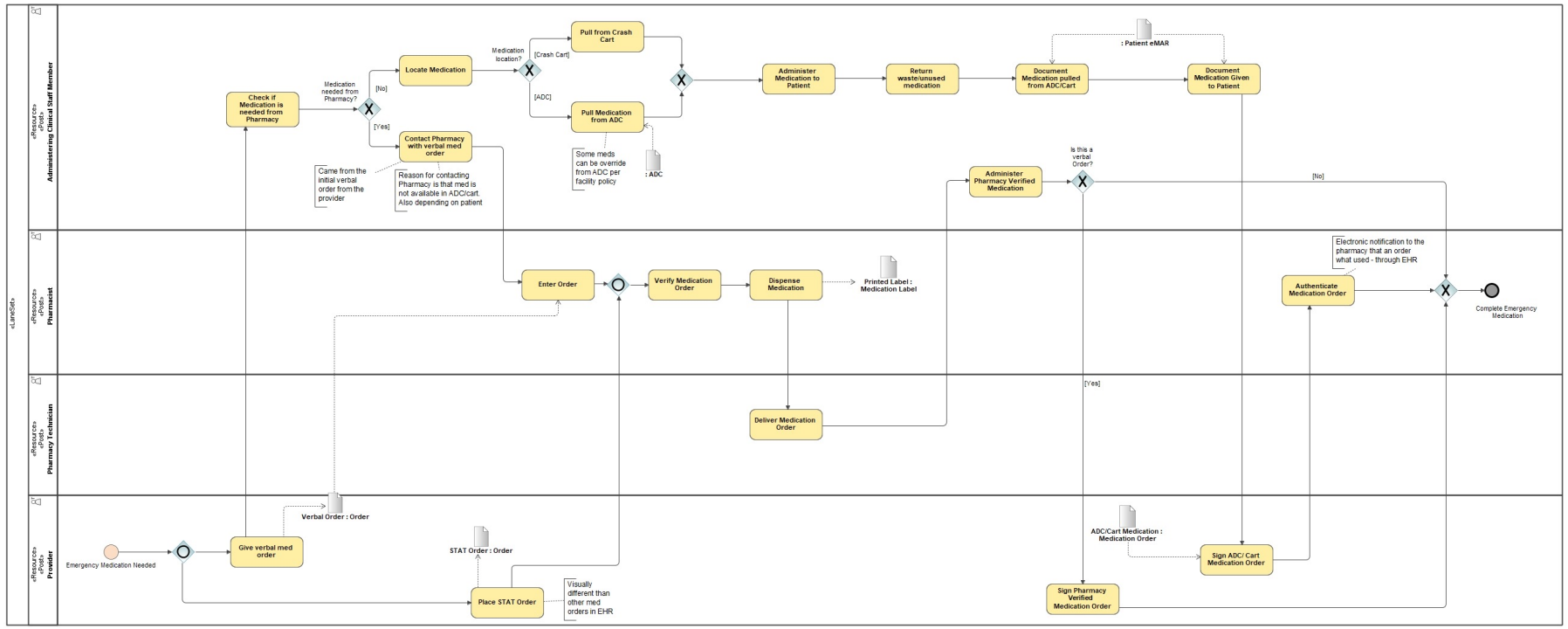
ED - Clinic BCMA: A System of Systems

ED clinic BCMA combines with a collection of other service lines, including emergency department medication management, to create a new, more complex system which offers more functionality, Potential for scaled impact, and opportunities for revenue cycle management than simply the sum of the constituent service lines

Clinic BCMA Business Process Model

DRAFT MODEL – For Informational Purposes Only

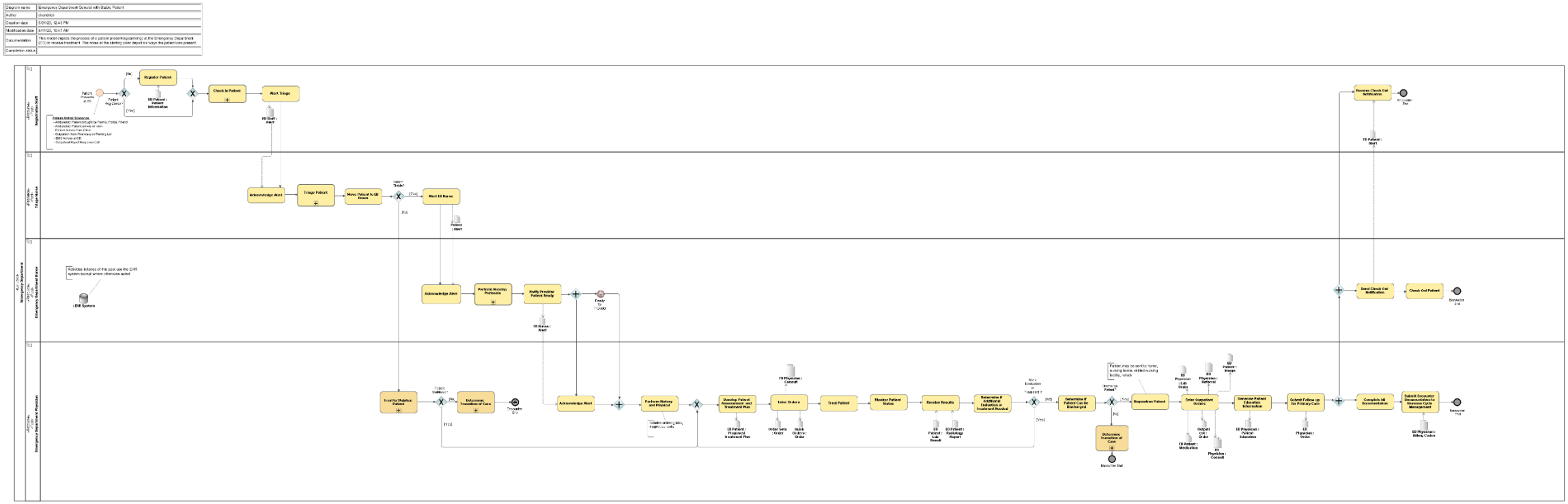
Diagram name	Emergency Medication Order
Author	tchrissley
Creation date	7/28/23, 12:08 PM
Modification date	8/14/23, 4:54 PM
Documentation	This is an emergency setting showing the ideal state.
Completion status	



Emergency Medication Order.jpg

Emergency Department, Stable Patient

DRAFT MODEL – For Informational Purposes Only



Emergency Department General with Stable Patient DRAFT 14 Aug 2023.png

Questions & Discussion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