The Role an EMPI System Plays in Population Health Efforts

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IMT – December 4 2019

Advocate Physician Partners
Tomorrow starts today.

Presentation Overview

- ❑ Who We Are
  - ✓ Advocate Aurora Health Care (AAH)
  - ✓ Advocate Physician Partners (APP)
    - Population Health Key Programs Using the EMPI Solution
- ❑ EMPI – Healthcare Primer and AAH Model
- ❑ Improvements
- ❑ Questions

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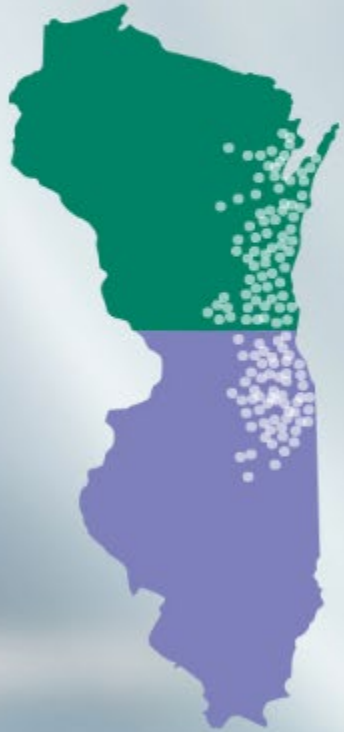
THIS IS transformation

Advocate Aurora Health

By the numbers



$11.7B TOTAL REVENUE

5.2% OPERATING MARGIN

70,000 EMPLOYEES

$16.7B TOTAL ASSETS

270 DAYS CASH ON HAND

15.9% EBDIT %

3,300+ EMPLOYED PHYSICIANS

27 HOSPITALS

500 OUTPATIENT LOCATIONS

100 RETAIL CLINICS

2.7M UNIQUE PATIENTS

Nearly **$2B** COMMUNITY BENEFITS IN 2016

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Advocate Physician Partners (APP)

- Enterprise Population Health division is the 9th largest not-for profit integrated health system in the United States
- We bring together our Illinois physicians, hospitals and a post-acute network committed to improving health care quality, safety, and outcomes
- National leader in population health and nationally recognized for our clinical integration (CI) program
- APP is the managed care and contracting division of Advocate Aurora Health
- Physician Hospital Organization (PHO) – Risk and Shared Savings managed care contracts

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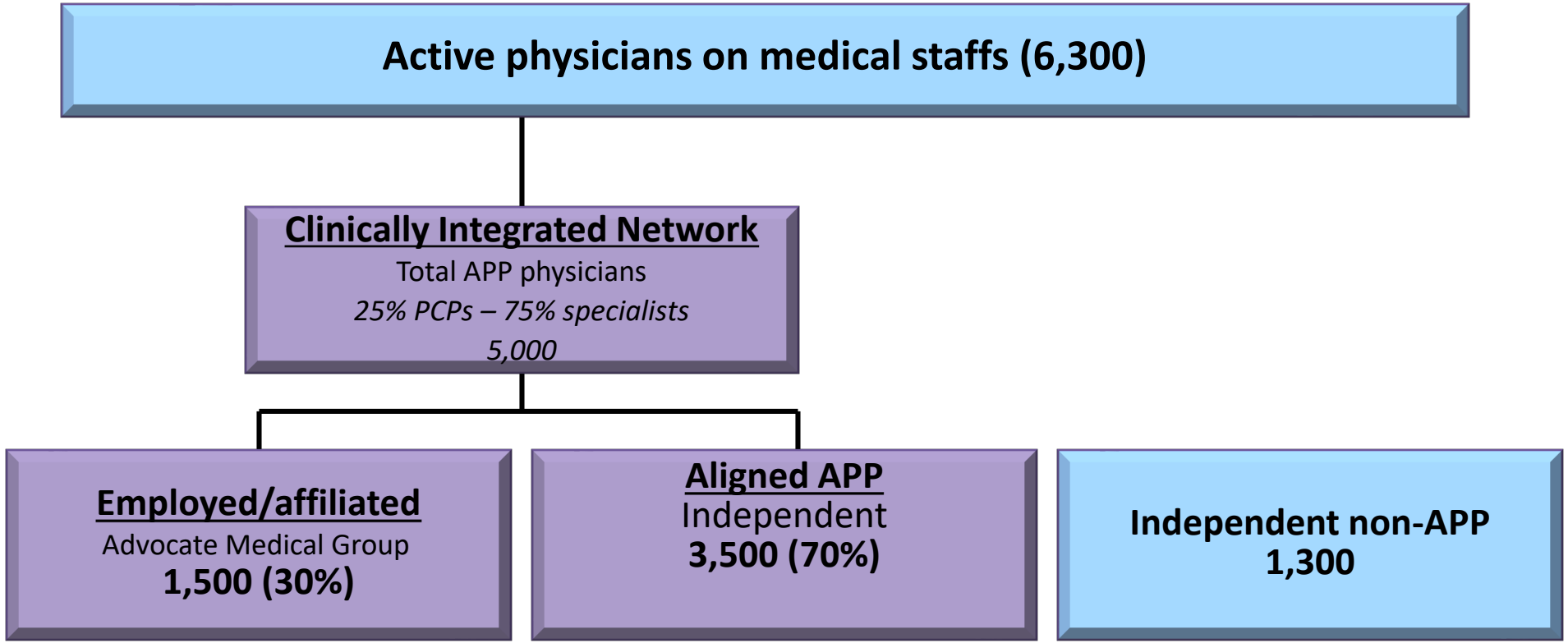
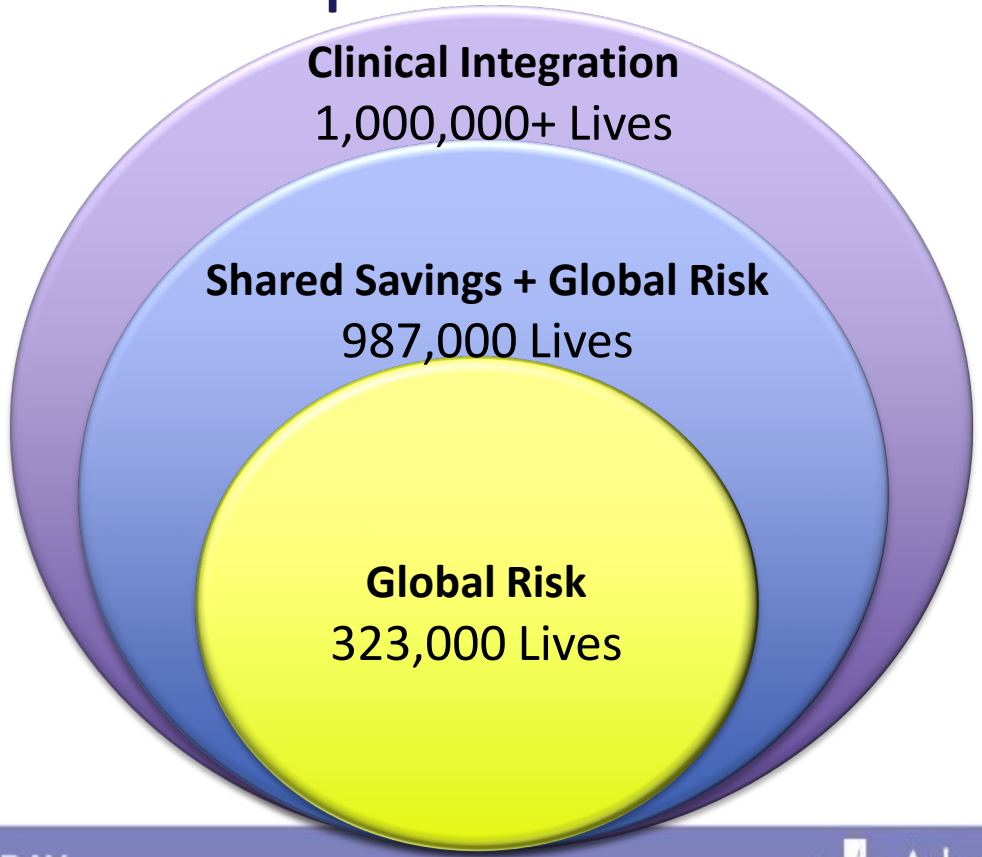
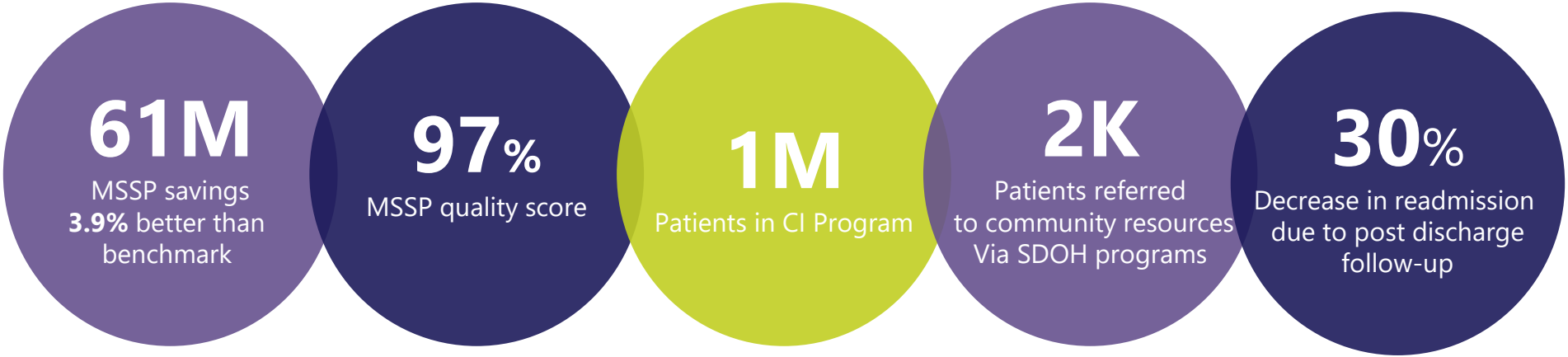
Pluralistic Physician Approach



AdvocateCare® Population



Quick **Stats**



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Key Programs

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Population Health Platform: Cerner HealtheIntent

HealtheIntent at APP_IL

Aggregate and normalize

EMR

1. Cerner Millennium
2. Allscripts
3. eClinicalWorks
4. Midwest Heart
5. Meditech
6. Epic
7. CIRRIS

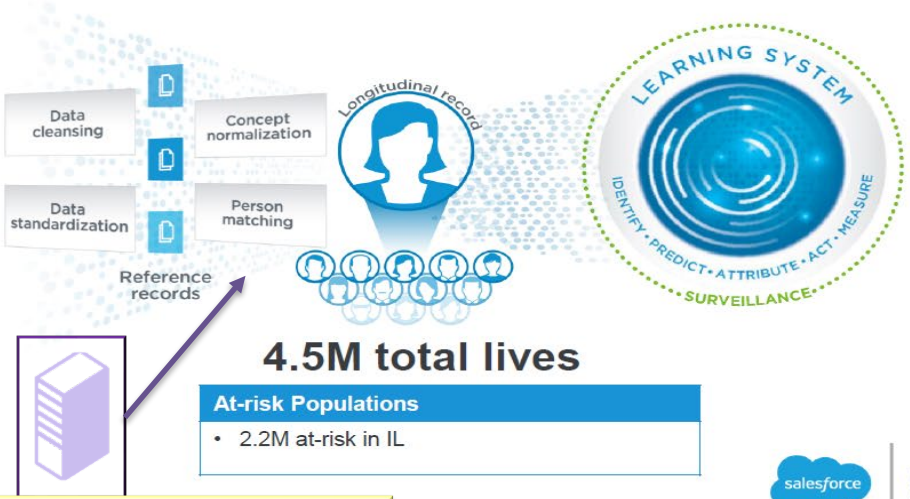
Payer/Claims

1. Allegra Claims
2. Magellan
3. Blue Cross Blue Shield
4. Humana
5. United Health Care
6. MSSP & Medicaid
7. Anthem

Other

1. ACL Lab
2. Federated EMPI
3. Walgreens
4. GE Referrals
5. Truven / Premier
6. Press Ganey

Create & apply intelligence



4.5M total lives

At-risk Populations

- 2.2M at-risk in IL

Act & measure

HealtheRegistries
2.2M lives

1. Asthma
2. COPD
3. CHF
4. Controlling High Blood Pressure
5. Diabetes
6. Depression
7. IVD/CAD
8. Adolescent Immunizations
9. Childhood Immunizations
10. Adult Wellness
11. Annual Visit over 65
12. Cancer Screening
13. Depression Screening & follow up
14. Designated Decision Maker
15. Early childhood wellness
16. Follow up Care for ADHD
17. Influenza
18. Maternal Depression
19. Pediatric Wellness
20. Tobacco Use
21. Access to Primary Care
22. Maternity
23. Back Pain
24. Communication
25. External Measures

HealtheAnalytics

- EDW & reporting
- HEDIS, Stars & ACO
- HCC

HealtheCare

- 6 identification algorithms

Federated Model using IBM MDM

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EMPI – Healthcare Primer and AAH Model

EMPI Identified Risks

Same Source Duplicates

- Patients may suffer medical errors due to missing health information in their records.
- Patient matching issues resulting in duplicates cost hospitals and health care organizations an average of $1,000 to $2,000 per duplicate.

Overlays

- Overlays that co-mingle multiple patients' records may cause medical errors or death.
- HIPAA violations.
- Costly to the organization if a medical error or death occurs.

WHY?

- **Multiple name variations**
- **Data entry errors**
- **Systemic issues**
- **Lack of data standardization processes.**

A typo or absence of a single digit in one's birth date, address, phone or social security number only compounds the issue. Patients move, marry, divorce and visit multiple providers in their community where new records are created and the potential for duplicates and overlays grows.

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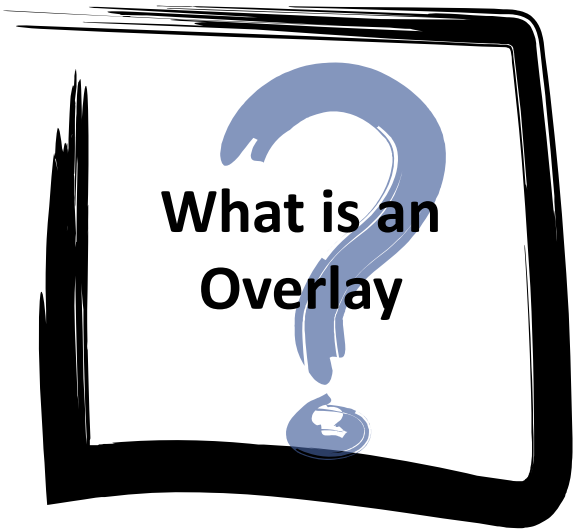
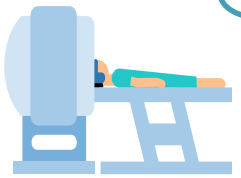


Same MRN

TWO different people

Co-mingled clinical information

See scenario on next slide



1 March 16, 2017

James Miller
MRN:4545

- Allergies: Penicillin, Imagining dye contrast
- Problems: History of brain tumor, high BP, Diabetic

2 May 1, 2017

Jeff Miller
MRN:4451

- Allergies: None
- Problems: Broken Leg

Error occurred

3

January 12, 2018

James Miller
MRN:4451

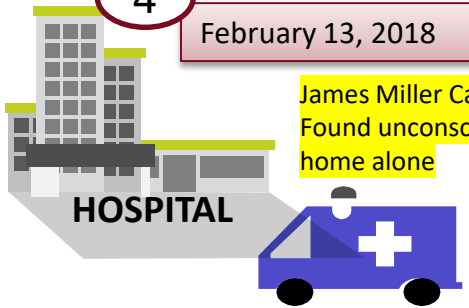
- Allergies: None
- Problems: Broken Leg

~~Jeff Miller~~
MRN:4451

- Allergies: None
- Problems: Broken Leg

What could happen

4 February 13, 2018

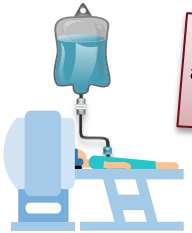


James Miller Calls 911
Found unconscious at home alone

James Miller
MRN:4451

- Allergies: None
- Problems: Broken Leg

Emergency MRI with Contrast



No record of any allergies in chart

Patient Safety Medical Emergency

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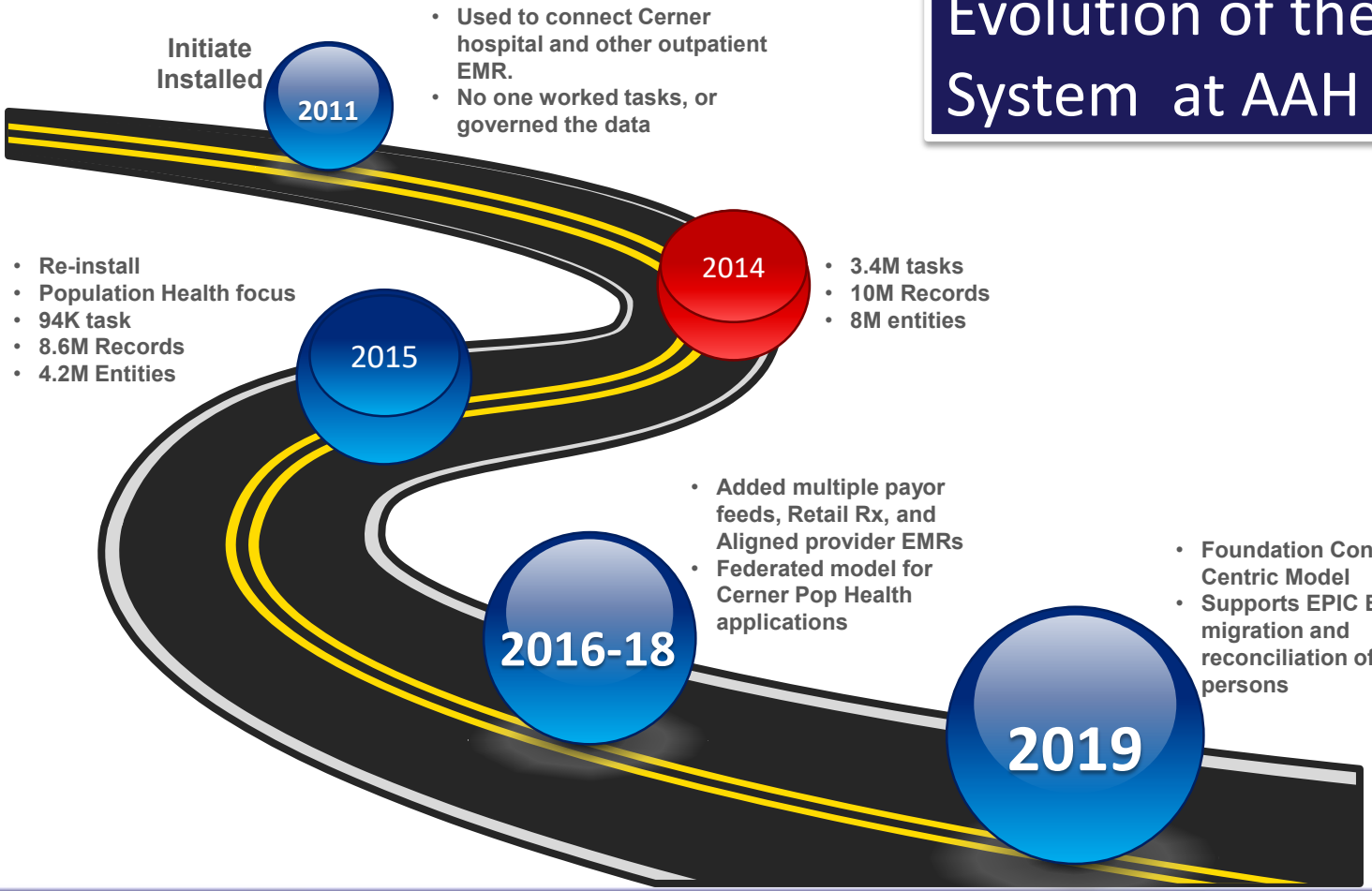
Evolution of the EMPI System at AAH



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AAH EMPI Vision Statement

- The EMPI is the system that is used for patient identity at an enterprise level to link together internal and external data. This tool is the safety net for the entire enterprise and is a key control to monitor source system, beyond their normal workflows.

- The linkage data that is managed by the EMPI is continuously utilized for enterprise population health, enterprise analytics, data integration projects, and any solution requiring single source records.

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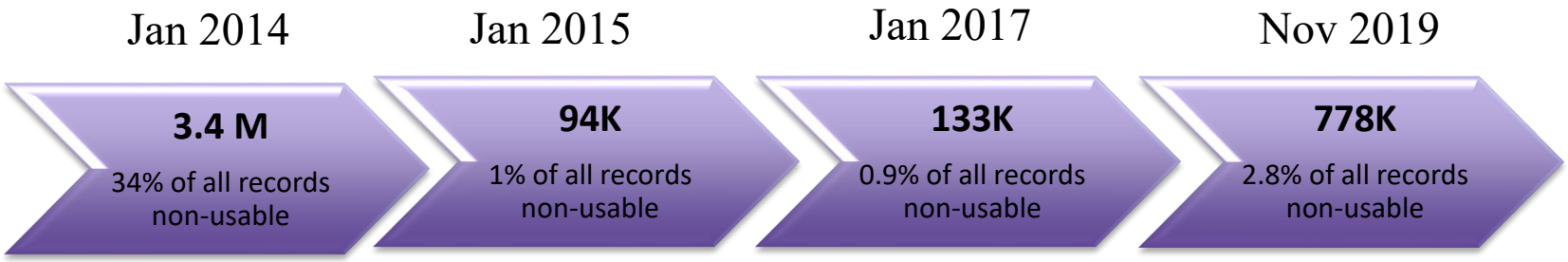
AAH Statistics



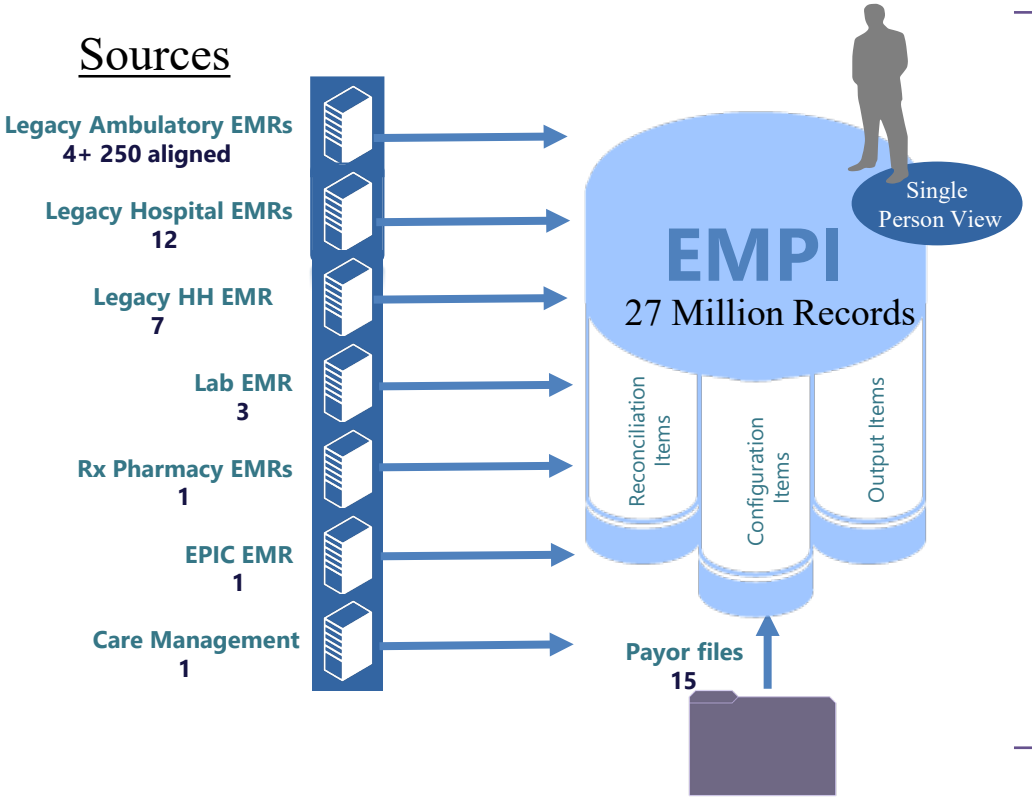
10M Records
8M Entities

8.6M Records
4.2M Entities

13.5M Records
5.9M Entities

27.2M Records
10.8M Entities

AAH EMPI Solution



Use Case Examples

- **Population Health single patient identifier for HealtheIntent**
  - *Registry*
  - *Care Management*
  - *Utilization Management*
- **EPIC Migration**
  - *EMPI used to reconcile thousands of records*
- **RME Processing in EPIC**
  - *Matches Payor data to EPIC identities*
- **Enterprise Population Reporting**
  - *Single identifier across populations for targets*
  - *HCC reporting*
- **EPIC Identity Management**
  - *Overlay detection*
  - *Duplicate identification*
- **MSSP Identification in EMR**
  - *Workflow for SNF 3 day waiver*
- **ACO Identification in EMR**
  - *Workflow for Inpatient and ER notification*
- **NOWPOW**
  - *Social Determinants of Health Tool – Requirement to have a single identifier for all payor and EMR records*
- **New Partnerships**
  - *Ability to easily link people together across new systems*
- **Imaging Archive Solutions**
  - *65 legacy systems combined into a single solution*

Improvements Made

- Created a data steward team to manage tasks and reconcile data
- Senior leadership governance council created
- Formalized onboarded standard operating procedure
- Fixed interface issues going into the EMPI system (messages were not being translated correctly)
- Third party call out to verify address and write back update (reference data)
- Created custom reporting packages
- Created P&P and workflows within and across the enterprise

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Capability Comparison EMPI VS MPI

CAPABILITIES	EMPI/MDM	EMR/MPI
Matching		
Probabilistic Matching	✓	✗
Deterministic Matching	✓	✓
Phonetic Algorithms	✓	✗
Nickname/Aliases	✓	✗
Duplication Detection	✓	✓
Overlay Detection	✓	✗
False Positive Filters	✓	✗
Data Remediation/Tools		
Task Assignment/Workflows	✓	✓
Full Audit History	✓	✓
Fuzzy Searches	✓	◐
Data Quality Framework	✓	◐
Business Needs		
Performance	◐	◐
Data Quality	✓	◐
Accuracy	✓	◐
Source Agnostic	✓	✗

Questions

$60.6 in taxpayer savings