

# Electronic Case Reporting (eCR)

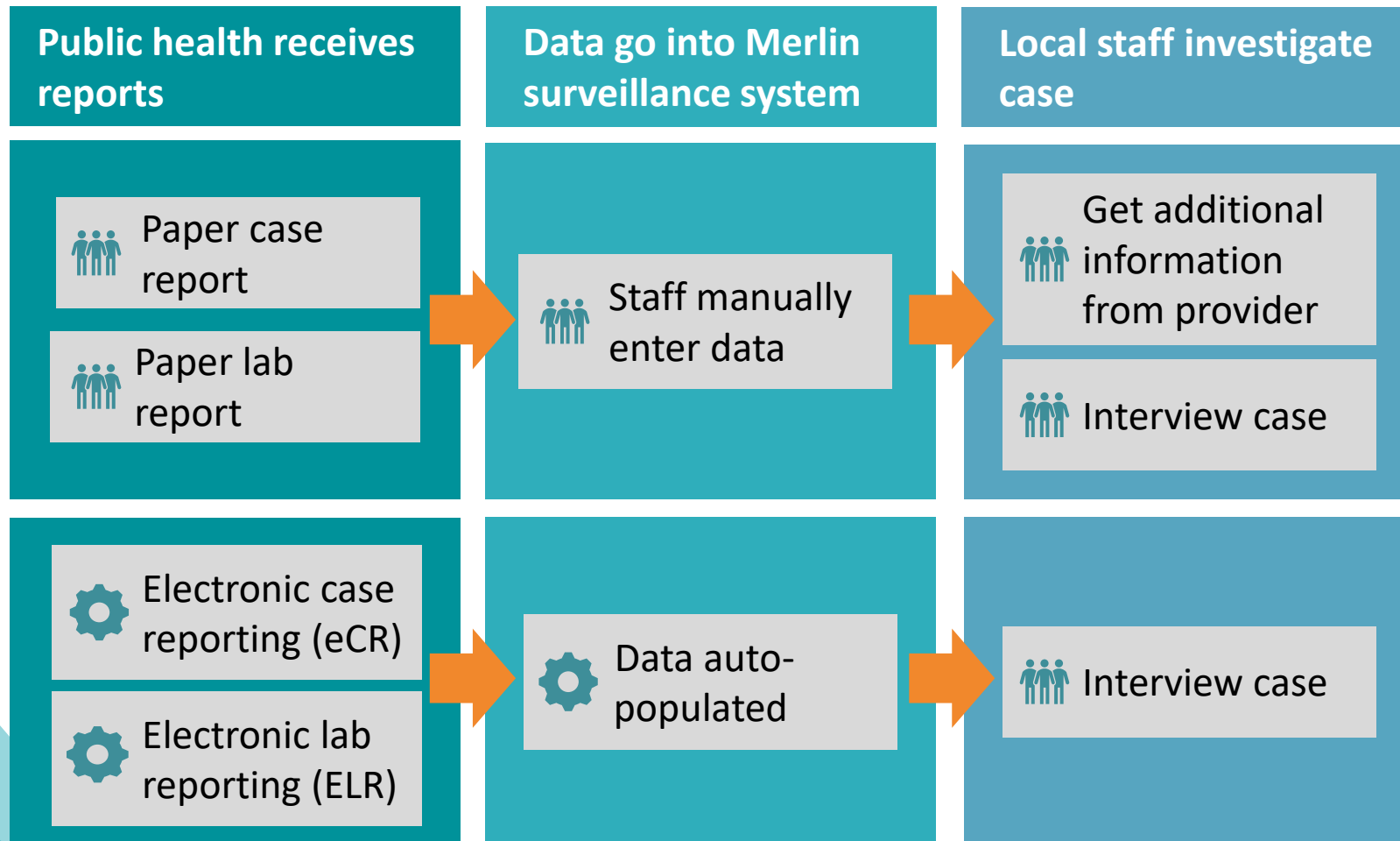
March 16, 2022

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Allison Culpepper

Shelby Fawaz

# Disease reporting or ‘Why eCR?’



## Traditional reporting

- Completely manual
- Time consuming
- Error prone

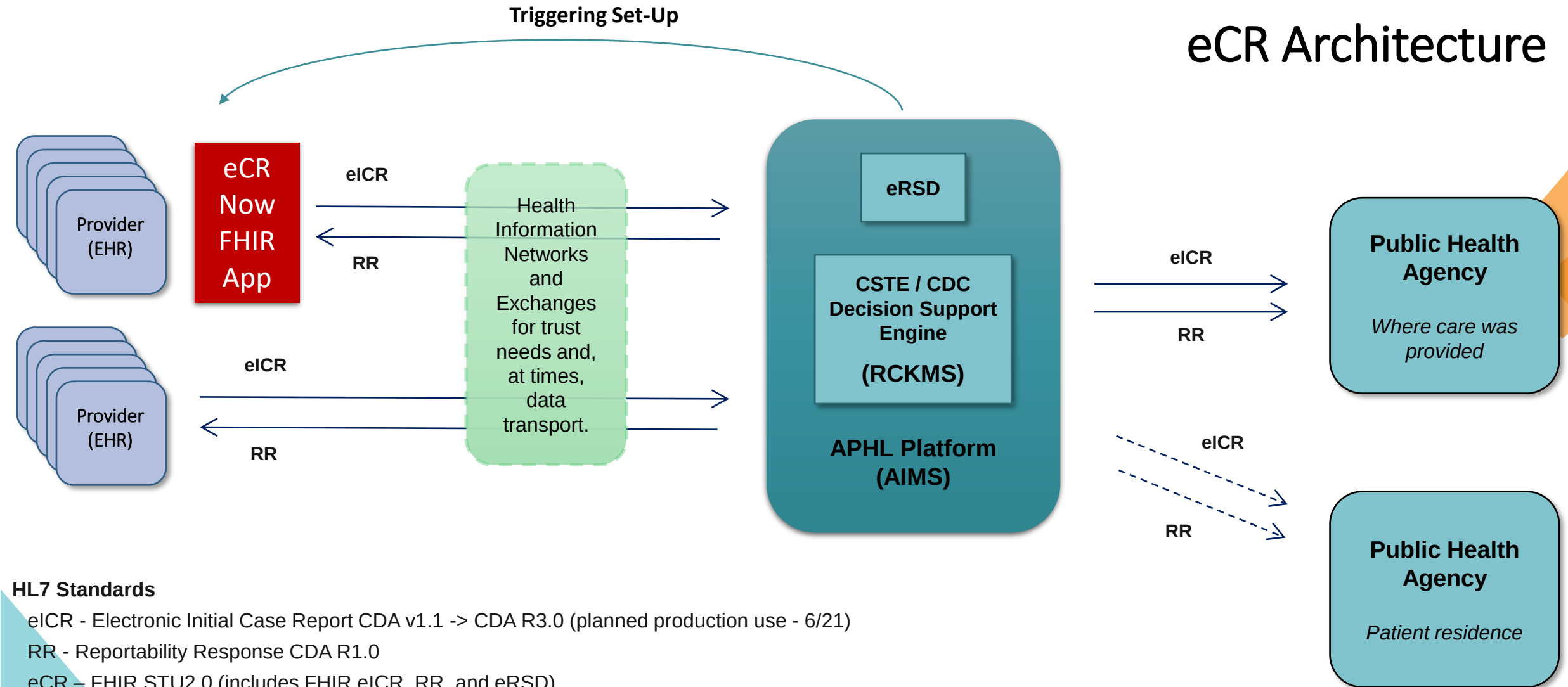


## Electronic reporting

- Less manual work
- More complete data
- Shift staff focus



# eCR Architecture



## HL7 Standards

eICR - Electronic Initial Case Report CDA v1.1 -> CDA R3.0 (planned production use - 6/21)

RR - Reportability Response CDA R1.0

eCR - FHIR STU2.0 (includes FHIR eICR, RR, and eRSD)

## Possible Policy Agreements

eHealth Exchange, Carequality, APHL participation agreement

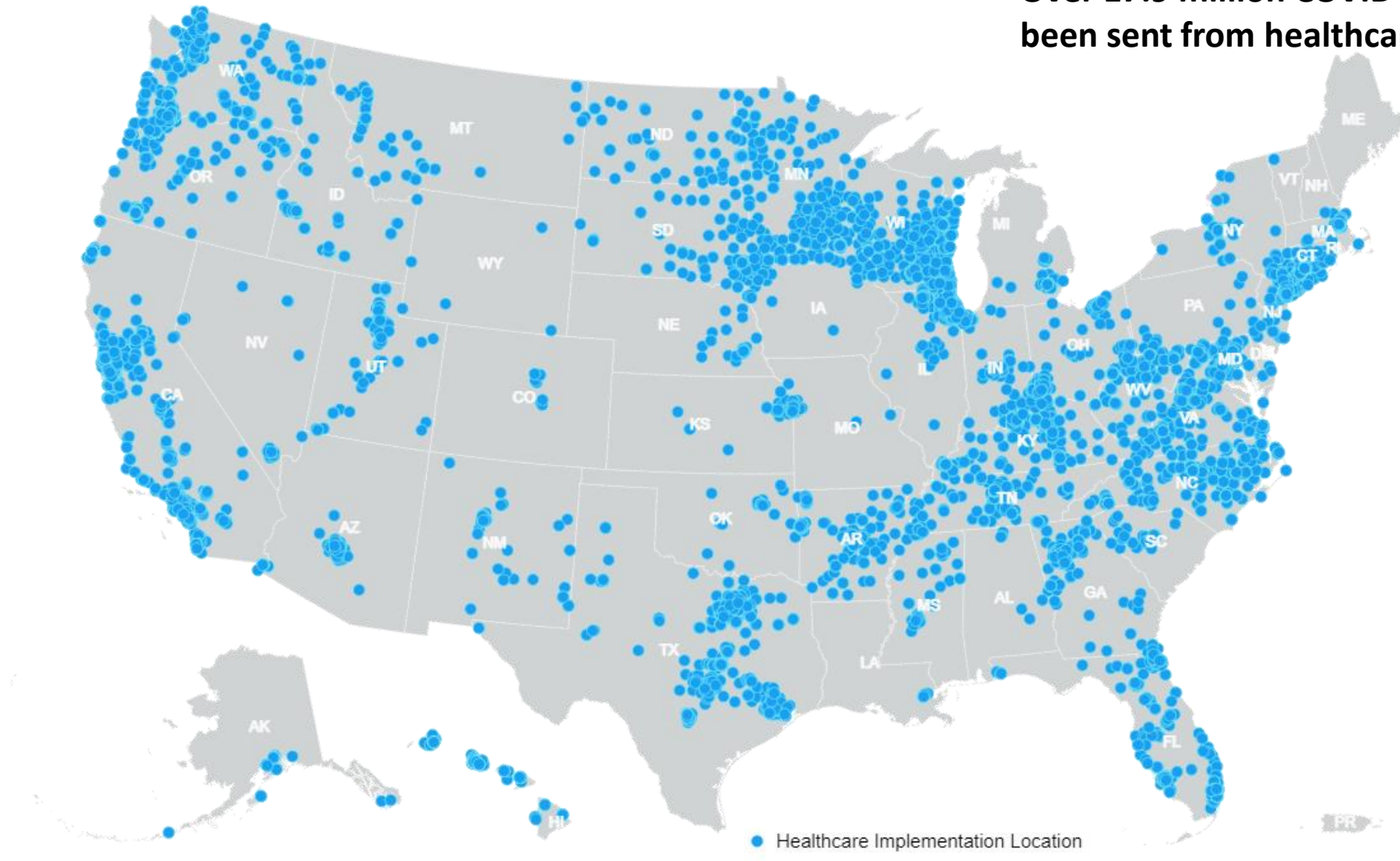
## Terms

RCKMS - Reportable Condition Knowledge Management System

eRSD - Electronic Reporting and Surveillance Distribution System

## 11,100 eCR Facilities Reporting as of 2/22/22

- 9.7 % of U.S. Hospitals
- Over 17.9 million COVID reports have been sent from healthcare



# Current data, future data, inferring data

- Report date, Sender (HCO)
  - Patient demographics
  - Facility, pt parent/guardian
  - Race, ethnicity, preferred language, pregnancy
  - Immunization
  - Labs and results
  - Diagnoses and problems
  - Medications
- Future versions of standard include:
    - Pregnancy
    - Travel history
    - Occupation and industry
    - Misc template for future questions
  - What is 'inferring data'?

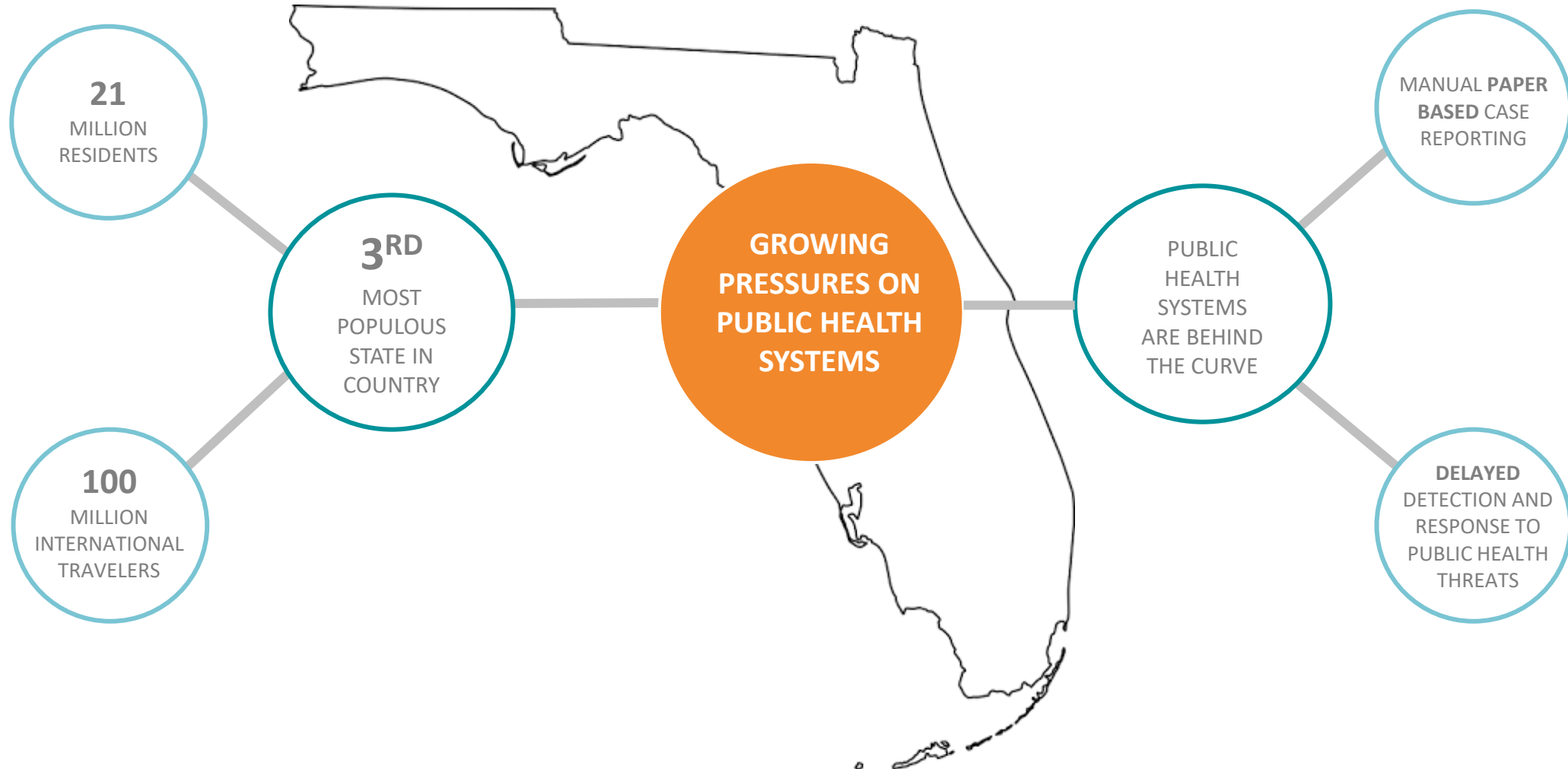
# Why would I need to infer?

- eICRs: rich *clinical* data
  - Observation structure
  - Model driven and reusable
- Public health data systems
  - ELR
  - Paper forms – yes, no, unknown
  - Data analysis – coded for statisticians
  - Case Investigation questionnaires/follow-up

# Help, More Information

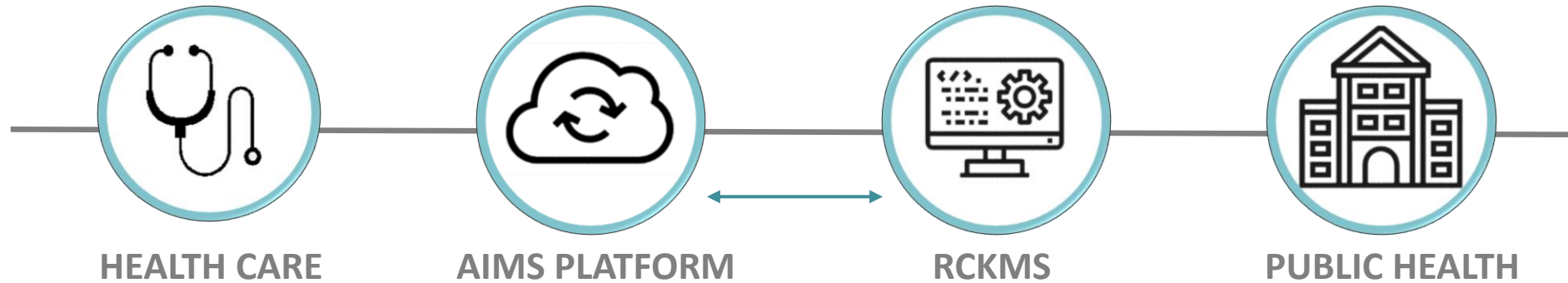
- Direct support (aka TA) for eCR is now available
  - Form straightforward
  - Leadership support
  - Link in follow up email with slides – suggest working with your informatics folks to apply
  - Expectations and timeline
  - Why epi methods?
- eCR is for more than COVID – what other conditions?
  - <https://www.rckms.org/> 132 today with continual growth. COVID is 1/132.
- I need more information +/- have specific questions:
  - <https://ecr.aimsplatform.org/public-health-agencies/>
  - [ecr-info@aimsplatform.org](mailto:ecr-info@aimsplatform.org)

# Prior state of public health systems





# Electronic case reporting (eCR) process



- Provide patient care
- Use electronic health record (EHR)
- Match trigger codes
- Send case report

- Provides shared services for visualization, interoperability, security and hosting of data
- Hosts RCKMS

- Determines reportability
- Create response
- Send response

- Define reporting criteria in RCKMS
- Process case report
- Process response

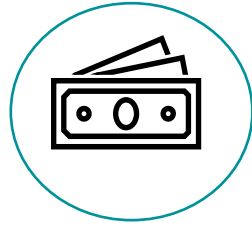
RCKMS: Reportable Condition Knowledge Management System

# Benefit to clinical care settings



## Fulfills requirements

Allows providers to fulfill their legal obligations to report conditions of public health concern with less administrative burden.



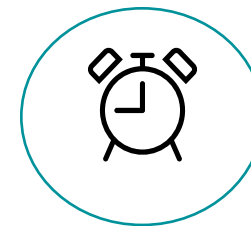
## Monetary incentives

Provides credit to eligible facilities for participating in the Promoting Interoperability Program.



## Improved surveillance

Improves the efficiency and effectiveness of disease detection, surveillance, investigation and response.



## Timelier clinical care

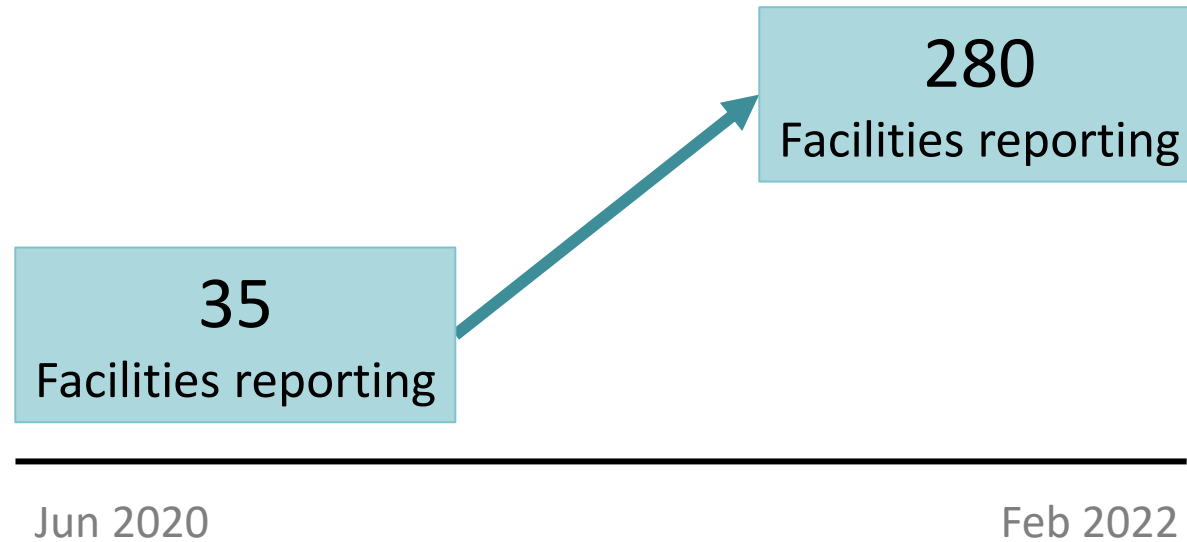
Improved automation, which allows stakeholders to spend more time providing care and preventing and controlling disease among residents of Florida, especially those who are most vulnerable.

# Quick statistics - Florida

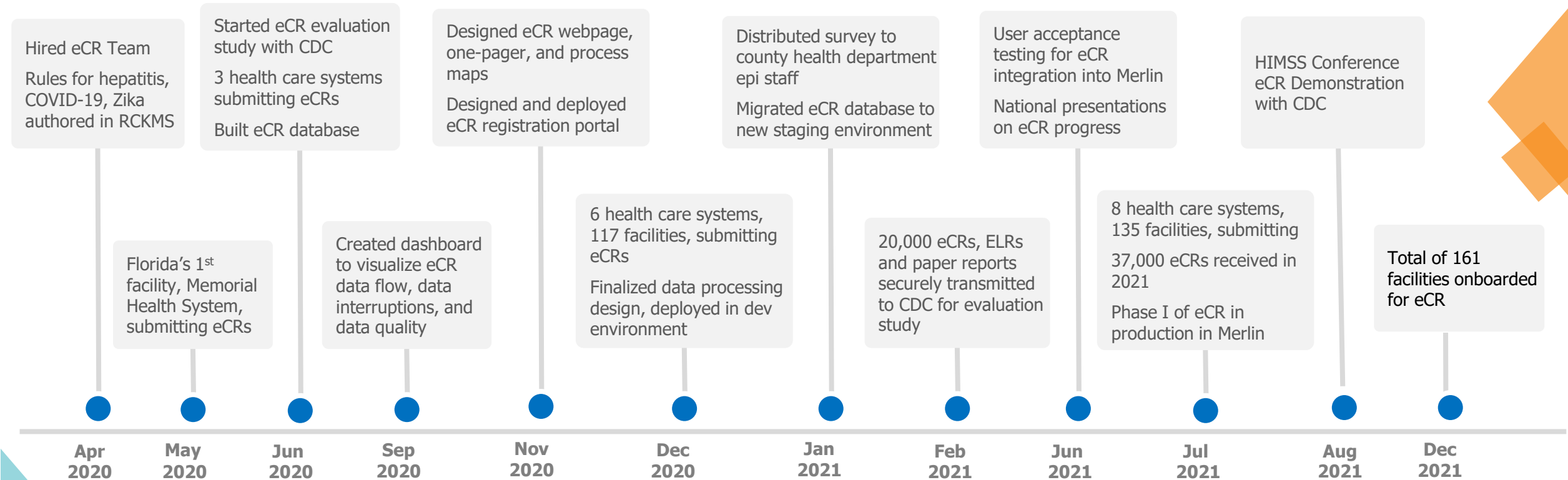
12 Health care systems

280 Facilities

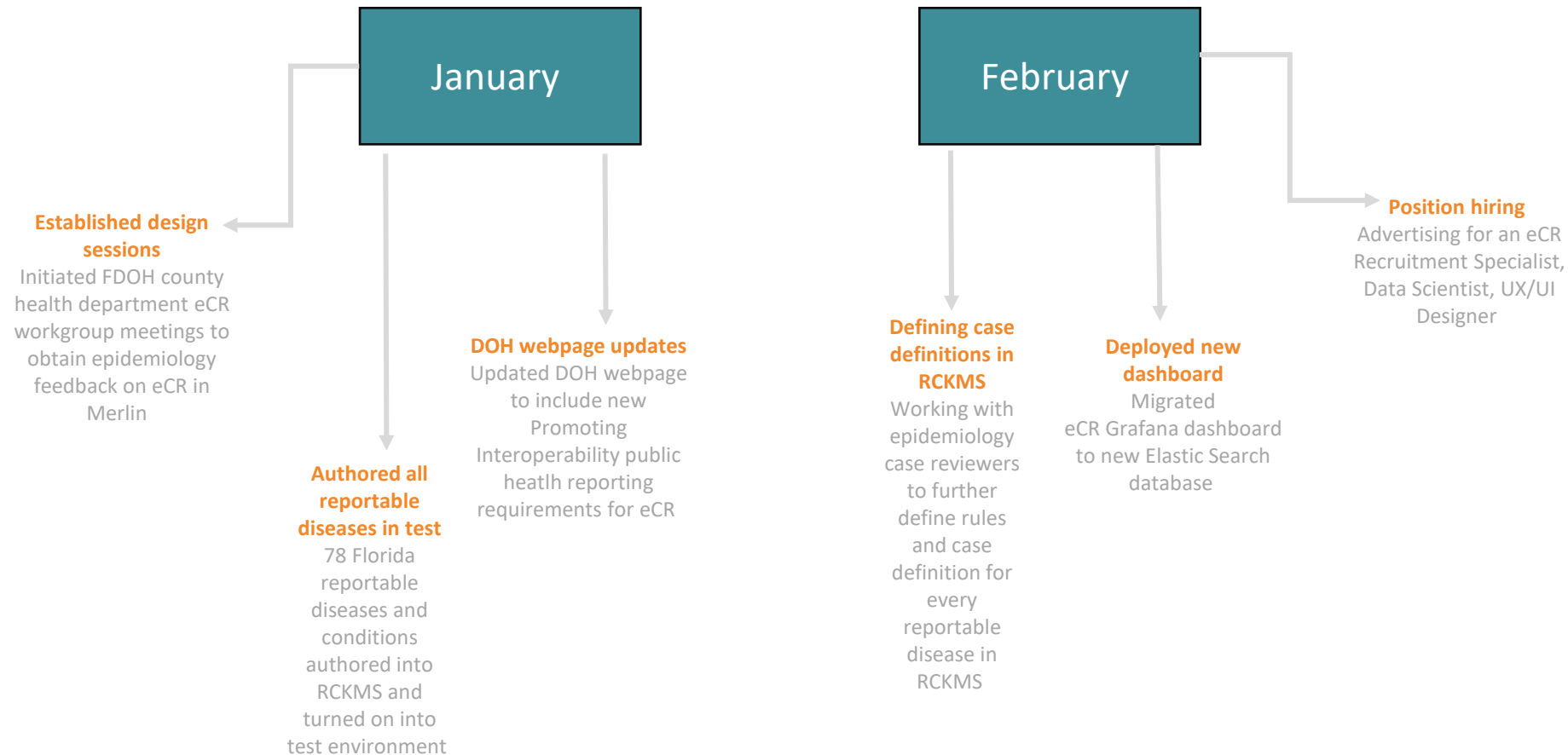
143K eCRs in 2021



# Timeline of eCR implementation



# 2022 eCR Implementation Timeline



# A lot of new eCR data...



**MEDS**



**VACCINE  
HISTORY**



**PLAN OF  
CARE**



**PRIOR  
ENCOUNTERS**



**LAB  
RESULTS**



**SOCIAL  
HISTORY**



**REASON  
FOR VISIT**

# ...led to a phased implementation

## Phase 0

- Onboard facility
- Build database
- Assess incoming data

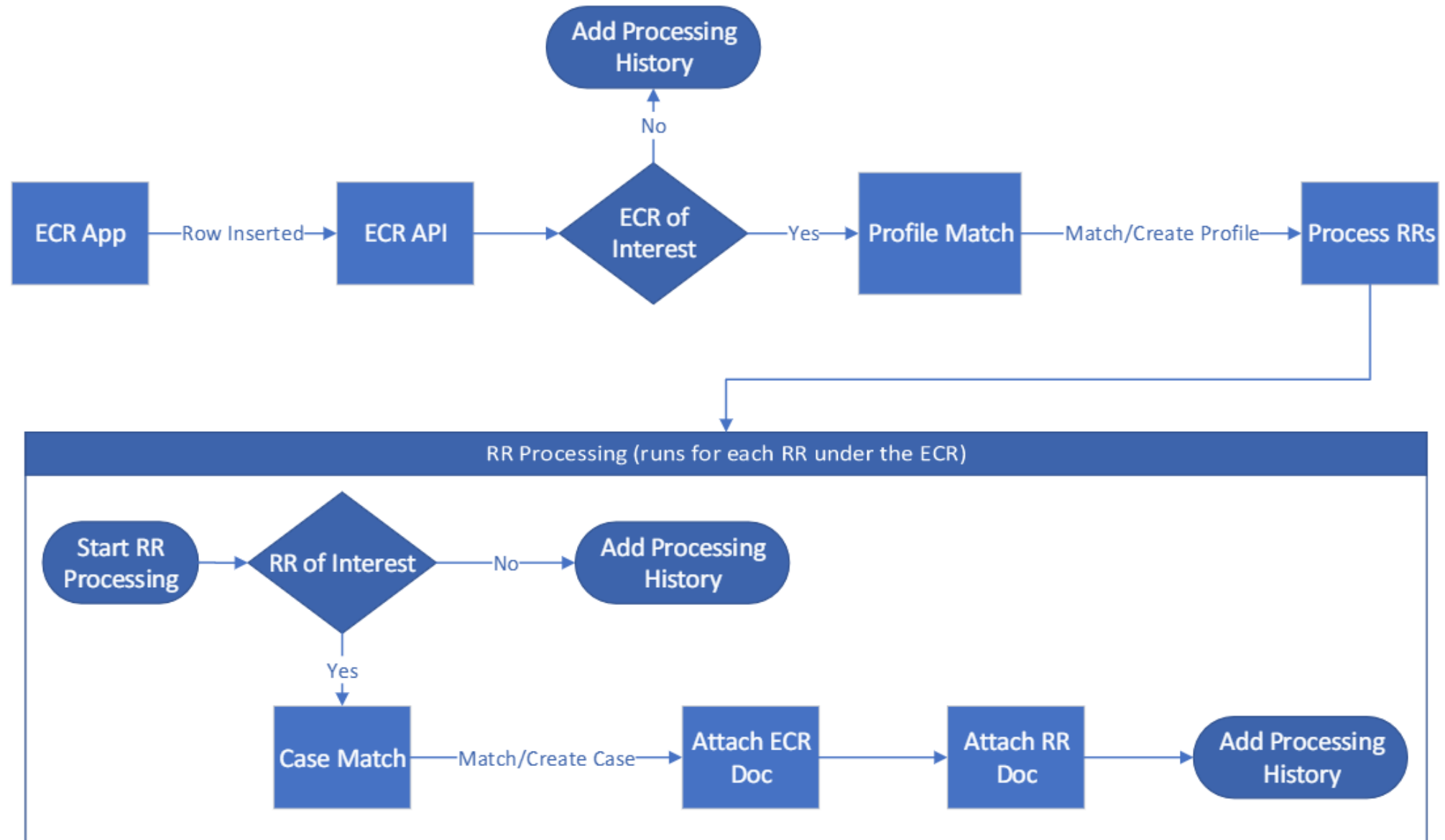
## Phase 1

- Consume basic demos
- eCR HTML available
- Data quality dashboard

## Phase 2

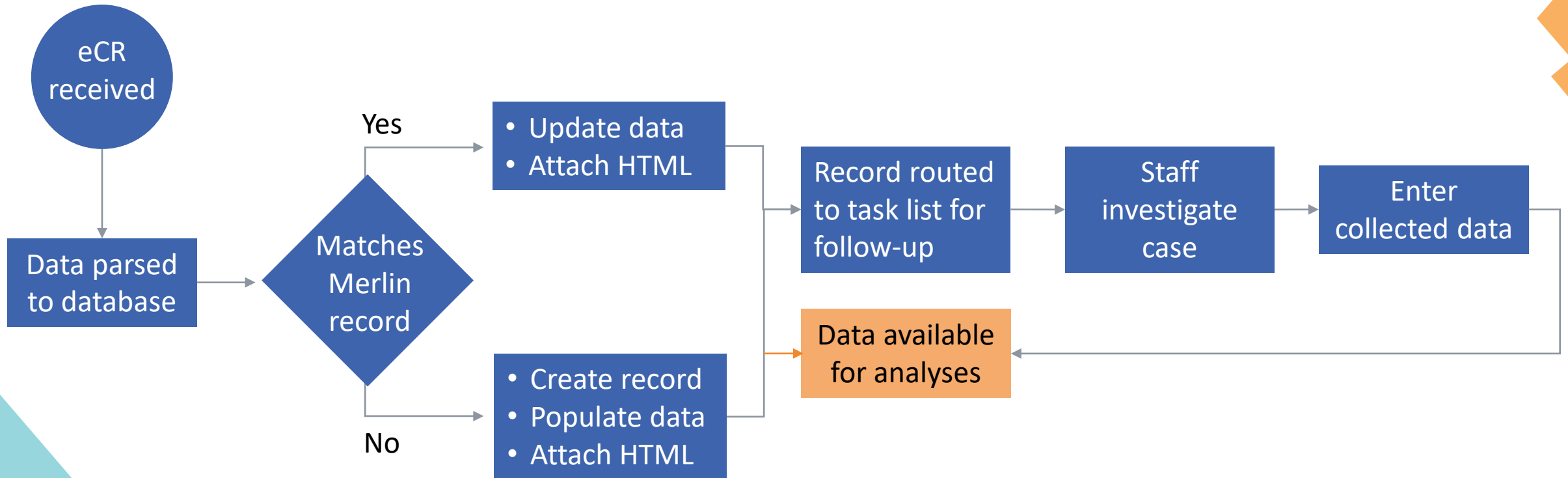
- Monitor data quality
- Identify and consume additional useful data

# eCR processing within Merlin





# Data are available for analysis much earlier with the eCR flow in Merlin





## My Task List

[Edit Help](#)

County (required)

Leon

New cases

Existing cases

276

Cases to review

2

Cases/contacts that need follow-up

0

Cases that need control measures

34

Labs with no case

2

ELRs to review

33

Non-Florida



## Profile Detail

[Edit](#) [Help](#)

### Name and Demographics

|                        |                                                                                     |                      |                             |                      |
|------------------------|-------------------------------------------------------------------------------------|----------------------|-----------------------------|----------------------|
| Last name (required)   | First name                                                                          | Middle               | Suffix                      | Maiden               |
| <input type="text"/>   | <input type="text"/>                                                                | <input type="text"/> | <input type="text"/>        | <input type="text"/> |
| Gender                 | Date of birth (required)                                                            | Date of death        |                             |                      |
| <input type="text"/>   | <input type="text"/> <input type="button" value="x"/> <input type="radio"/> Unknown | <input type="text"/> |                             |                      |
| Social security number | Patient ID/MRN                                                                      |                      |                             |                      |
| <input type="text"/>   | <input type="text"/>                                                                |                      |                             |                      |
| Race                   | Reason race is unknown                                                              | Ethnicity            | Reason ethnicity is unknown |                      |
| <input type="text"/>   | <input type="text"/>                                                                | <input type="text"/> | <input type="text"/>        |                      |

### Address & Contact Information

|                                                |                      |                      |                                                                     |
|------------------------------------------------|----------------------|----------------------|---------------------------------------------------------------------|
| <input checked="" type="checkbox"/> US address | Latitude             | Longitude            | Home phone                                                          |
| <input checked="" type="checkbox"/> Validated  | <input type="text"/> | <input type="text"/> | <input type="text"/> <input checked="" type="checkbox"/> U.S. phone |
| Address line 1                                 | <input type="text"/> |                      | Other phone                                                         |
| <input type="text"/>                           |                      |                      | <input type="text"/> <input checked="" type="checkbox"/> U.S. phone |
| Address line 2                                 | <input type="text"/> |                      | Emergency phone                                                     |
| <input type="text"/>                           |                      |                      | <input type="text"/> <input checked="" type="checkbox"/> U.S. phone |
| Zip                                            | <input type="text"/> |                      | Emergency contact name                                              |
| <input type="text"/>                           |                      |                      | <input type="text"/>                                                |



## Case Documents

[Edit Help](#)

(140987)

[Broward](#)

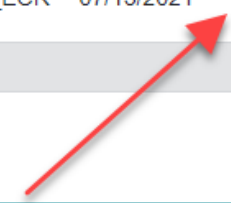
SSN:   
DOB:   
Phone:

Race:   
Ethnicity:   
Gender:

Case ID: **7164576**  
Disease: **Coronavirus disease 2019 (COVID-2019) - 00342**  
Exposure: Unknown (no onset date)

Event date: **06/09/2021**  
Case status: **Incomplete**  
Extended data: **No extended data needed**

| Document                 |      |            |                                                                           |             |             |  |
|--------------------------|------|------------|---------------------------------------------------------------------------|-------------|-------------|--|
| Description              | Type | Date       | File name                                                                 | Uploaded by | Uploaded on |  |
| Electronic Case Report   | eCR  | 06/08/2021 | 2021/1.2.840.114350.1.13.253.2.7.8.688883.81189233_20210609084406.HTML    | AUTO_ECR    | 07/13/2021  |  |
| Reportability Response   | RR   | 06/09/2021 | 2021/1.2.840.114350.1.13.253.2.7.8.688883.81189233_20210609084406_RR.html | AUTO_ECR    | 07/13/2021  |  |
| Showing 2 End of results |      |            |                                                                           |             |             |  |
| <div> Document</div>     |      |            |                                                                           |             |             |  |



# Data elements



## PHASE 1

Patient name  
Contact info  
Address  
Date of birth  
Sex  
Race  
Ethnicity  
Date of report



## PHASE 2

Lab info  
Symptoms  
Pregnancy  
Death date  
Occupation  
Language  
Visit date  
Provider info  
Facility info



## Future

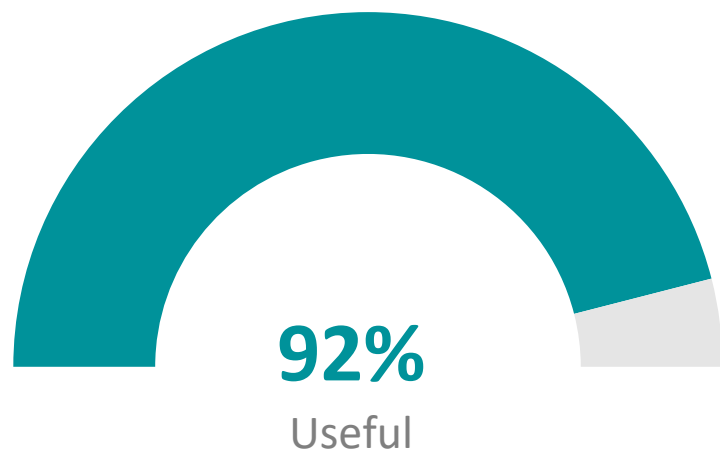
Travel info  
Diagnoses  
Visit reason  
Medicines  
Illness info  
Parent name

# How could eCR support future public health responses?



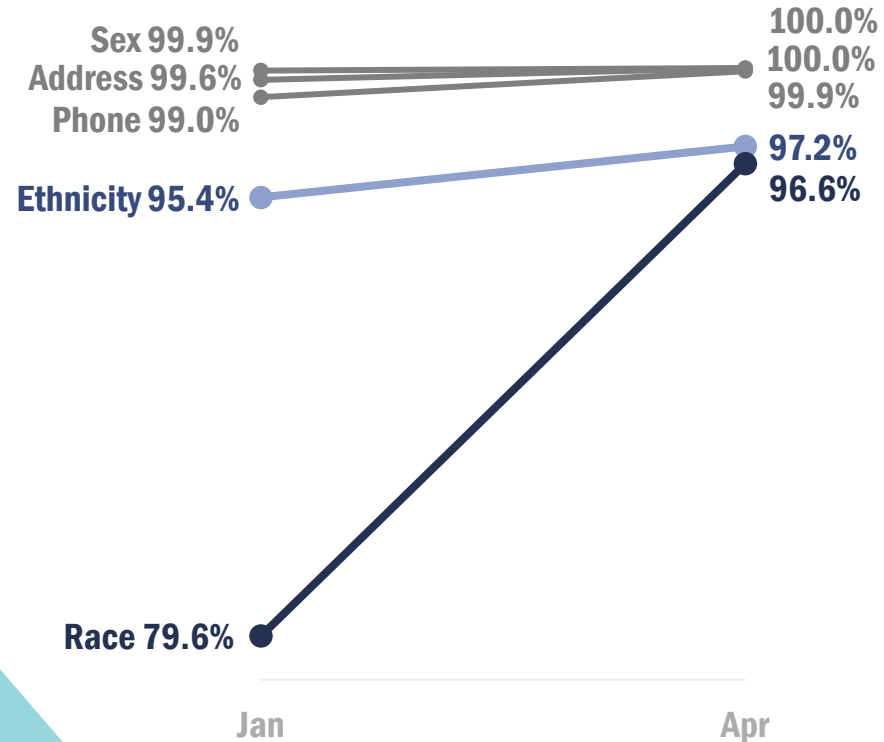
# User perspectives on the effects of eCR

County health department staff think having electronic case reports will be **useful**, **save time**, and **prevent having to contact providers**.

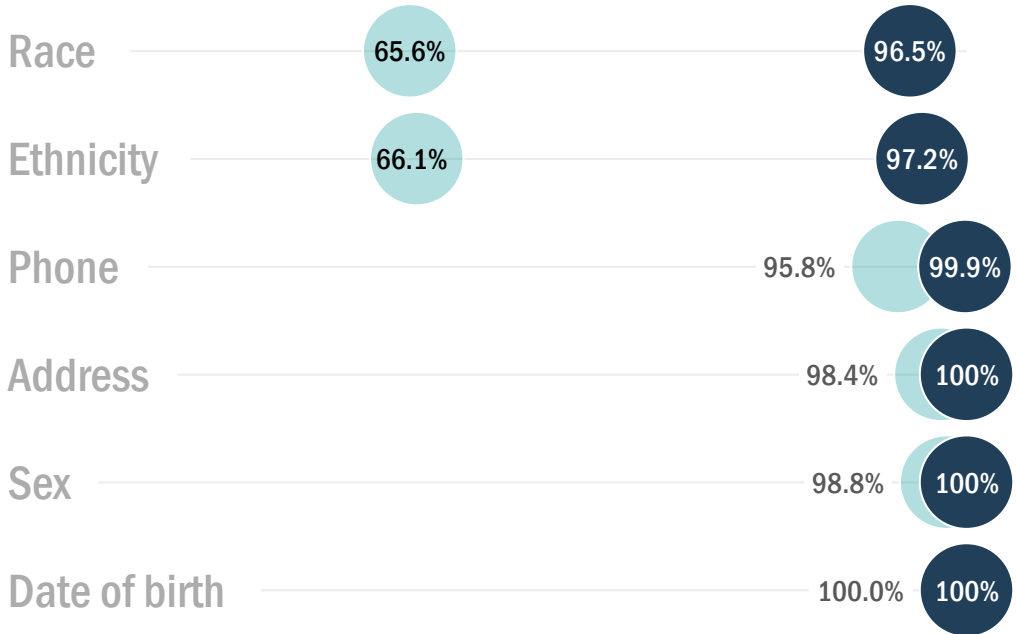


# Demographic data is more complete

## eCR data for 2021



## eCR data is more complete than ELR





# Current metrics: Since launch in August 2021

COVID-19 cases with eCR:

**92,056**

eCR was first notification:

**62,782 (68%)**

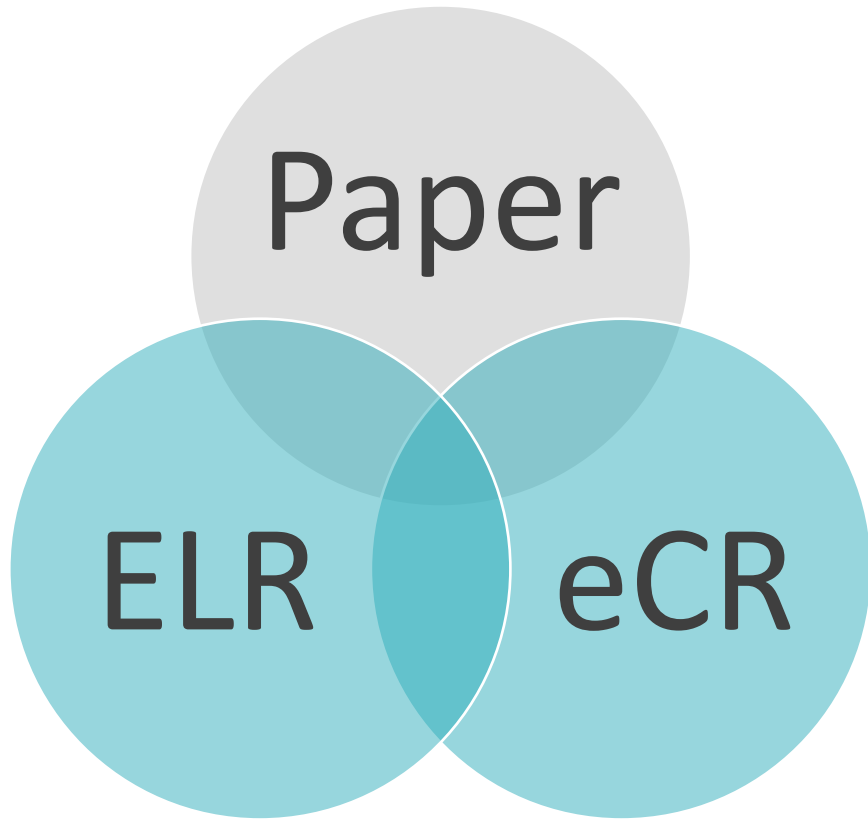
Average time from eCR to ELR:

**12.8 hours**

eCR is the currently the only notification:

**2821 (3%)**

# Future metrics for case reports



## Sensitivity

Proportion of cases only identified through ELR or eCR

## Timeliness

Mean time between:

- Case creation
- ELR received
- eCR received

## Completeness

Proportion of key data elements that are complete in eCR

Proportion of data elements that are complete in ELR vs eCR

**Thank you!**

