

Enabling the Right Care Decision at the Right Time

**PHRASE**

# Team

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Clinical Informatics Fellow  
Interest: Software Design

Emergency Physician

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Clinical Informatics Fellow  
Interest: Decision Support

General Internist and  
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Philadelphia Department of Public Health  
Division of Disease Control

THOMAS A. FARLEY, MD, MPH  
Health Commissioner

CAROLINE C. JOHNSON, MD  
Acting Deputy Health Commissioner &  
Director, Division of Disease Control

**Health Advisory**

**Zika Virus Update: Epidemiology, Laboratory Testing, and Reporting**  
August 11, 2016

**Zika Testing Recommendations by Clinical Status, Specimen Collection Timing, and Laboratory**

Clinical Status	Specimen Collection Timing (from Symptom Onset or Last Exposure, if Asymptomatic)	Preferred Specimen Type(s)* and Test(s)	Laboratories <sup>1</sup>	Additional Testing
Exposed, symptomatic, non-pregnant patients	Day 1-3	Serum rRT-PCR and Urine rRT-PCR	PABOL, LabCorp, ViroCor, Quest <sup>2</sup>	If neg, submit serum from ≥Day 14 for IgM testing
	Day 4-7	Serum rRT-PCR, Serum IgM, and Urine rRT-PCR	PABOL, LabCorp	If neg, submit serum from ≥Day 14 for IgM testing; if IgM pos, laboratory to forward for PRNT testing
	Day 8-13	Serum IgM and Urine rRT-PCR	PABOL, LabCorp	If neg, submit serum from ≥Day 14 for IgM testing; if IgM pos, laboratory to forward for PRNT testing
	Day 14-12 weeks	Serum IgM	PABOL, LabCorp	If IgM pos, laboratory to forward for PRNT testing
Exposed, pregnant patients (asymptomatic and symptomatic)	Day 1-14	Serum rRT-PCR and Urine PCR	PABOL, LabCorp, ViroCor, Quest <sup>2</sup>	If neg, submit serum from ≥Day 14 for IgM testing; if IgM pos, laboratory to forward for PRNT testing
	Day 14-12 weeks	Serum IgM	PABOL, LabCorp	If IgM pos, reflex to rRT-PCR; subsequent negative rRT-PCR should be forwarded for PRNT testing

Abbreviations: PABOL, Pennsylvania Department of Health Bureau of Laboratories; PRNT, Plaque-reduction neutralization tests



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**SUMMARY POINTS**

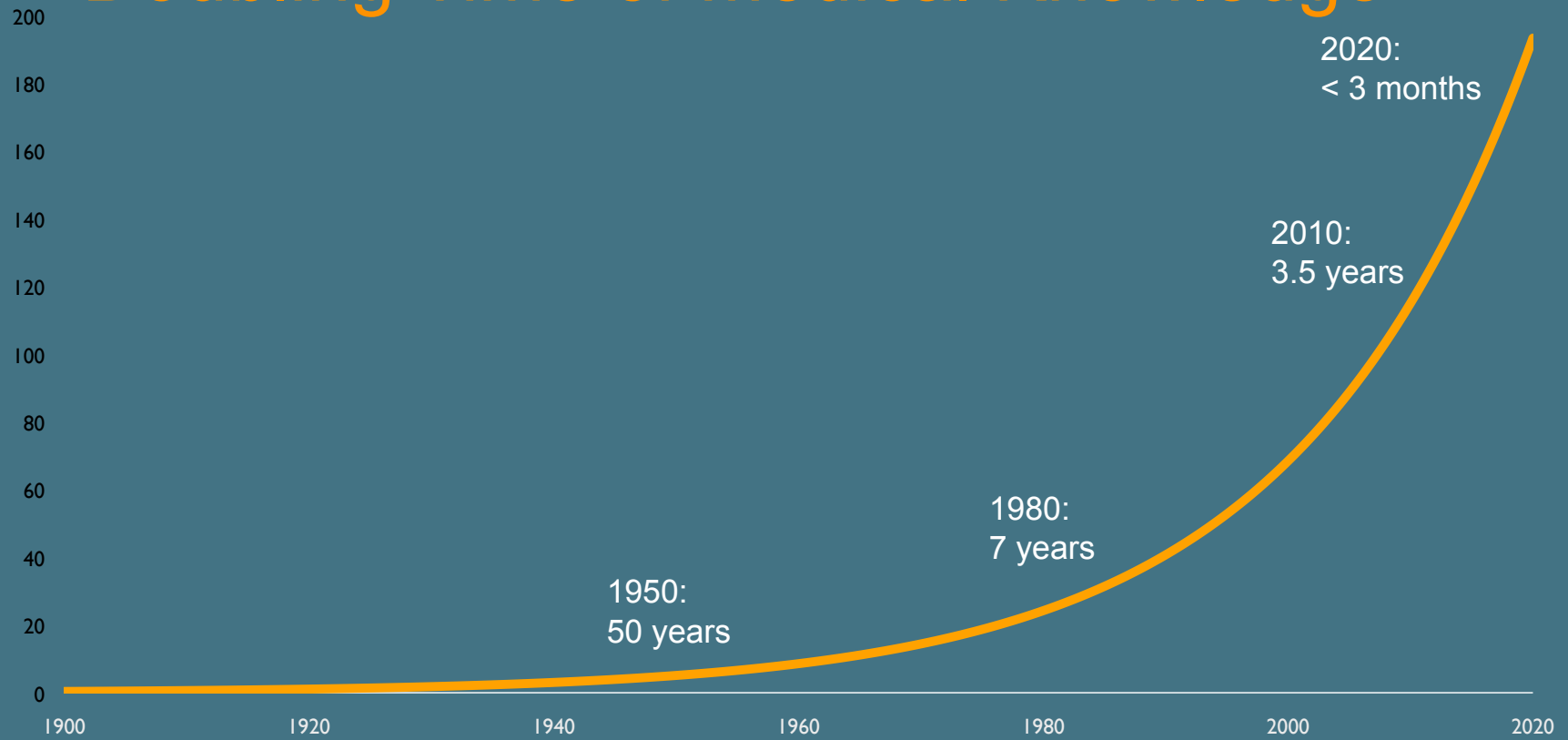
- Locally-acquired Zika has been identified in Miami's Wynwood neighborhood
- Zika testing (rRT-PCR and IgM MAC-ELISA) is now available through commercial laboratories
- Testing recommendations are updated to include:
  - IgM testing of convalescent specimens when rRT-PCR is negative
  - Serum and urine rRT-PCR testing for pregnant women seen within 14 days of illness onset or last exposure
  - rRT-PCR testing is also recommended following positive IgM tests in pregnant women if not initially performed

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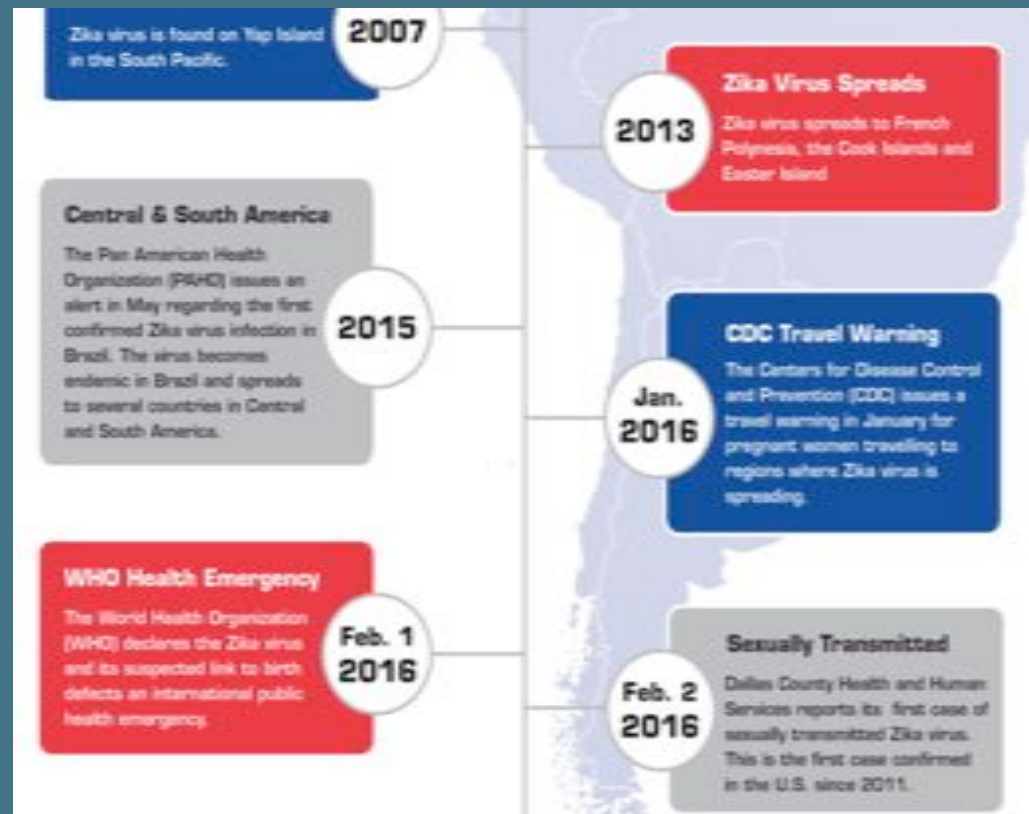


# Doubling Time of Medical Knowledge



Knowledge is already rapidly changing

Zika guidelines have had three major and multiple minor revisions in the past year alone



“

We try to be agile about these changes by using decision support but we're doing it at an immense cost in resources.”

CMIO of a Mid-Atlantic Hospital

Institutions are trying, but struggling to keep up

“

We started with goal of everyone having an electronic health record and we succeeded – now everyone has ten ,’  
electronic health records.



**Karen DeSalvo**  
Former head of the ONC

# New Standards and Frameworks

## Fast Healthcare Interoperability Resources



```
<Patient xmlns="http://hl7.org/FHIR">
  <extension url="http://www.goodhealth.org/consent#trials">
    <valueCode value="renal"/>
  </extension>
  <text>
    <status value="generated"/>
    <div xmlns="http://www.w3.org/1999/xhtml">
      <p>Henry Levin the 7th</p>
      <p>MRN: 123456</p>
    </div>
  </text>
  <identifier>
    <use value="usual"/>
    <label value="MRN"/>
    <system value="http://www.goodhealth.org/identifiers/mrn"/>
    <value value="123456"/>
  </identifier>
  <name>
    <family value="Levin"/>
    <given value="Henry"/>
    <suffix value="The 7th"/>
  </name>
  <gender>
    <text value="Male"/>
  </gender>
  <birthDate value="1977-09-24"/>
</Patient>
```

Patient Resource - XML

- Modules of health care defined as a resource
  - Observation
  - Patient
  - Medication
  - MedicationOrder
- Incorporates modern web standards like JSON, XML, REST

1.7 Introducing HL7 FHIR. From <http://www.hl7.org/fhir/summary.html>



# New Standards and Frameworks

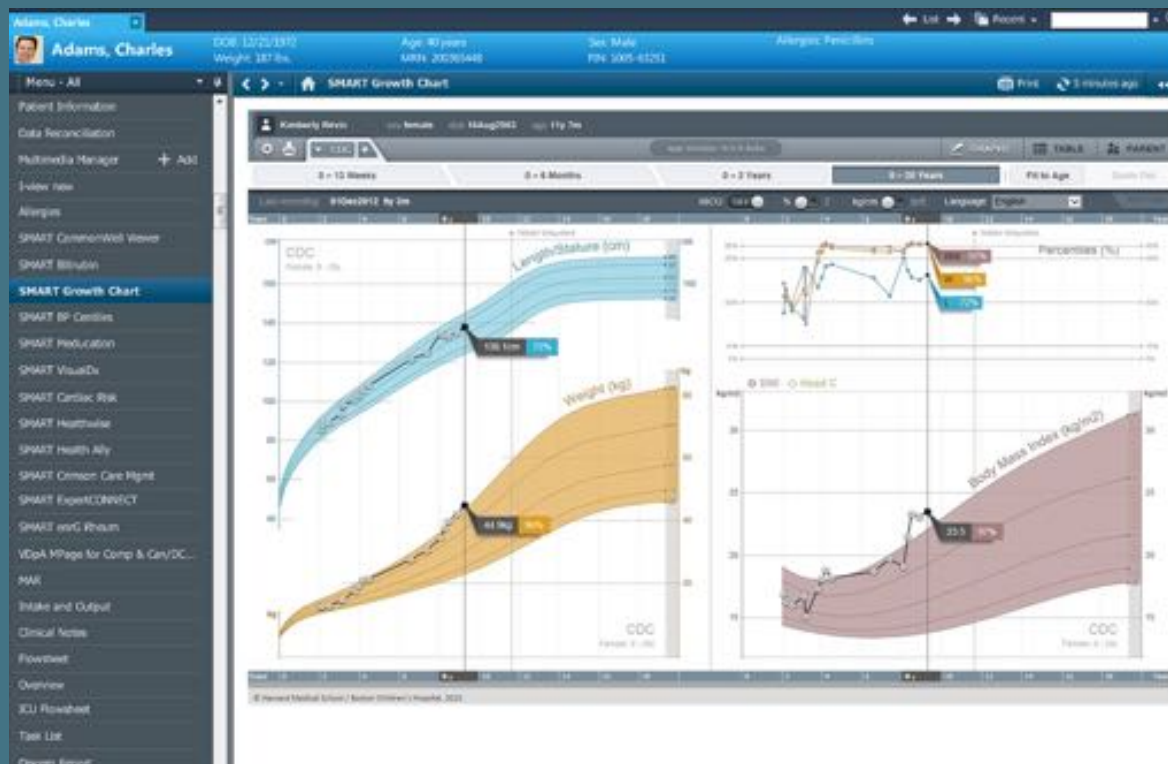
## SMART on FHIR

Substitutable Medical Apps, Reusable Technology

- Funded by \$15m grant through Boston Children's Hospital to create an "app store" for the EHR
- Framework built on the FHIR messaging standard



# New Standards and Frameworks

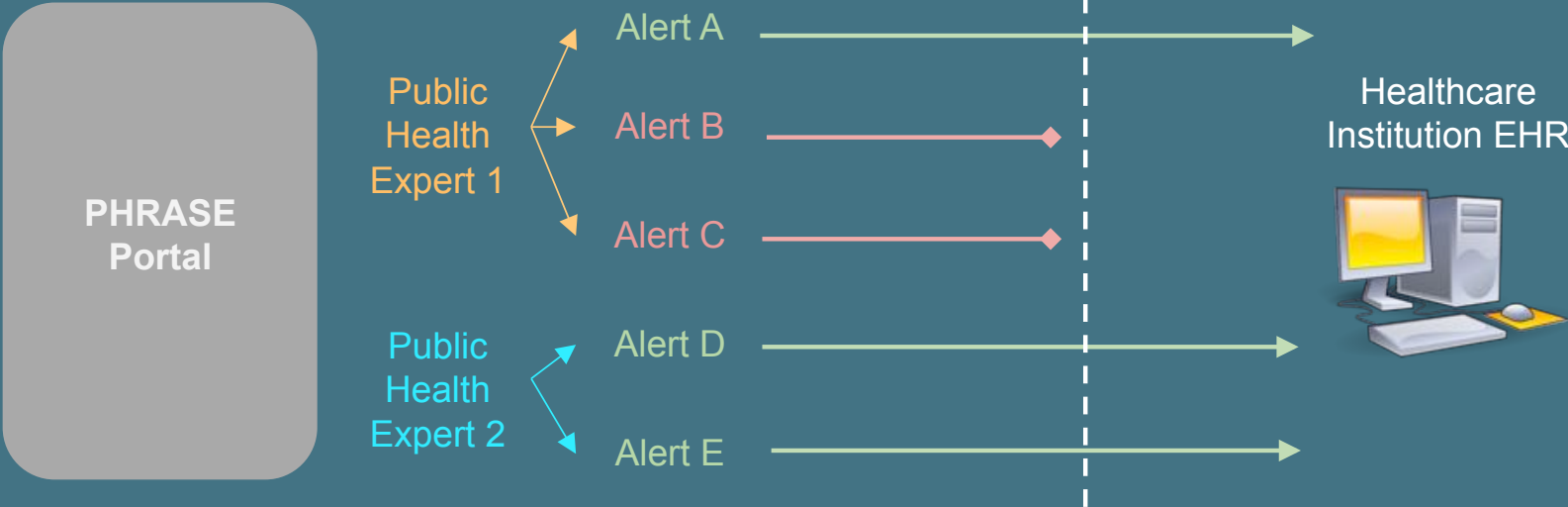


From <http://code.cerner.com>

# PHRASE



# Hospitals subscribe to current knowledge



Institution subscribes and customizes workflow

# Milestones

- **January 2016:** Phase I Finalist - Closing the Data Divide Challenge
- **February 2016:** Proof of concept integrated into Epic environment at Children's Hospital of Philadelphia
- **May 2016:** Winner - Closing the Data Divide Challenge
- **July 2016:** Phase I Winner– HHS/ONC Provider User Experience Challenge
- **Ongoing:** Validation and refinement of platform for pilot sites