



# Establishing Chronic Hepatitis C Surveillance in Los Angeles County

Prabhu Gounder, MD, MPH  
Acute Communicable Disease  
Control Program





# Outline

- Where did we start?
- What are we doing?
- What do we want to do?



## Overview of Viral Hepatitis Surveillance in LA County

- 1 public health nurse (PHN) – oversees surveillance and outbreak response for *acute* viral hepatitis
- Number of suspected acute cases investigated in 2017
  - Hepatitis A = 475
  - Hepatitis B = 312
  - Hepatitis C = 126
- Perinatal hepatitis B
  - Separate team based in immunizations program
- Receive chronic hepatitis B and C reports via ELR
  - Not reviewed or analyzed

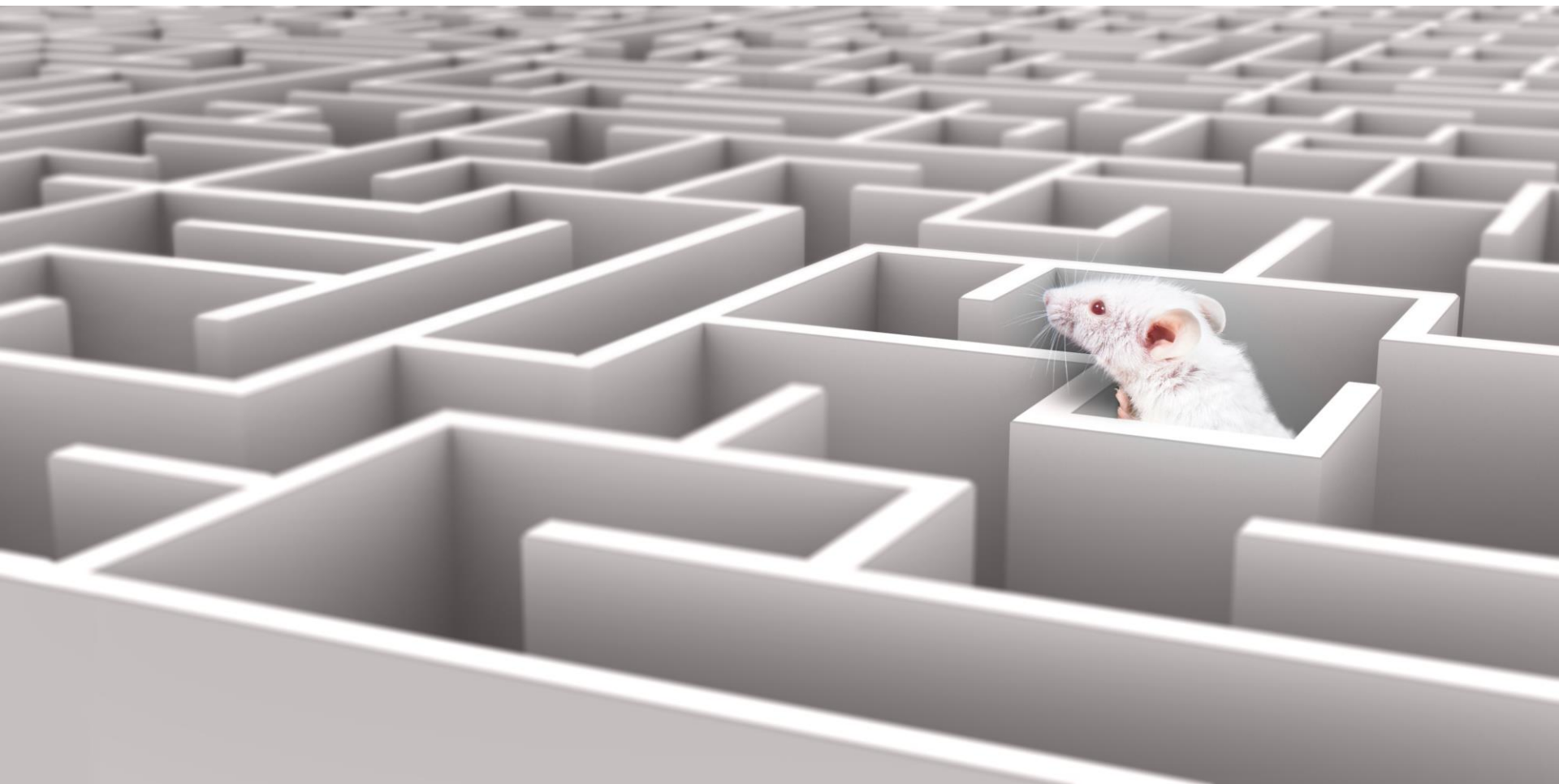


## Challenges with Establishing Chronic HCV Surveillance

- ~100,000 HCV tests reported/year via ELR
  - Antibody, PCR, genotype
- No staff dedicated to reviewing/managing chronic viral hepatitis data
  - Backlog of data to clean/analyze



# Where to begin?





## Consulted Colleagues

- Provided framework for organizing surveillance data
  - Exported all HCV data from surveillance database
  - Create an analytic database that deduplicates persons and relates HCV test results to unique persons
  - Use analytic database to create a registry that classifies disease phase (next step)
- Borrowed/adapted probabilistic matching code for deduplication



## Restructure and Reprioritize Team Activities

- HARIS (Hepatitis, Antimicrobial resistance, Respiratory Infections, Skilled-Nursing Facilities) Unit
  - 2 nurses, 2 epidemiology analysts, 1 research scientist
- Scale back invasive pneumococcal disease and group A Strep surveillance (1 FTE → 0.3 FTE epidemiology analyst)
  - Dedicate to chronic HCV surveillance
- Anticipating acute viral hepatitis surveillance PHN vacancy
  - Replace with epidemiologist and student professional worker
  - Assist with chronic HCV surveillance or take on chronic HBV surveillance



## Progress to date

- Downloaded HCV ELR data for 2017
  - ~100,000 reports (45% duplicate reports)
  - Applied probabilistic code
  - ~28,000 unique persons
  - ~1300 “gray-zone” matches (25/week for review)
- Requested HCV ELR data for 2013-2018
- Started weekly HCV surveillance data download
  - Provides context for surveillance data
  - Infer community testing practices



# HCV Testing Practices --- LA County, Jan-Aug 2018

## Unique test result patterns

(N = 16,576)

	n (%)
Ab	7593 (43.1)
Ab and PCR	3906 (22.2)
Ab, PCR, and genotype	2233 (12.7)
PCR	1935 (11.0)
PCR and genotype	1539 (8.7)
Genotype	348 (2.0)
Ab and genotype	46 (0.3)

## Assumptions

- Ab done only for screening
- PCR/genotype without associated Ab
  - To confirm infection in persons with reported h/o HCV
  - Treatment planning/monitoring

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44% of positive Ab tests associated with positive HCV PCR → expect >65%

Indicates need for education on HCV testing



## Where is HCV testing occurring in LA County?

- >600 unique facility IDs
- Top 20 testing facilities = 44% of all PCR tests
- ~ 200 facilities/providers ordered 2-10 PCR test
- ~450 facilities/providers ordered 1 PCR test



## Top 10 HCV Testing Facilities by Age Group

Age <30 years	Age >65 years
L.A.JAIL TWIN TOWERS HOSP/CPU	KAISERSUNSETMEDICALCENTER
LAC USC MED CENTER	CEDARS-SINAI MEDICAL CENTER
KAISERPANORAMAMEDICALCNTR	LAC USC MED CENTER
KAISERBALDWINPARKMEDCLCNTR	W LA MEDICAL CENTER
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CALIF STATE PRISON LOS ANGELES	MLKJRCMNTYHOSPITAL
KAISERBELLFLOWERMEDICLCNTR	KAISERBELLFLOWERMEDICLCNTR
CC-ST JOHNS WELL CHILD FM CNTR	KAISERBALDWINPARKMEDCLCNTR
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## What is Happening with HCV in LA County Jail System?

- Total daily census ~17,000 across 4 facilities
- Process 300-500 inmates/day
- Inmates going through medical intake area screened for HCV
- Reflex HCV PCR testing for all positive Ab tests
- County health agency administers health care in jails
- HCV treatment only offered for inmates with expected length of stay >6 months
  - Median length of stay ~45 days
- Opportunity to pilot developing HCV registry



## Jail HCV Registry

- Objective:
  - Identify HCV-infected inmates for the purpose of care coordination
  - Understand epidemiology of HCV in LA County jails
- Planned registry structure
  - Export all ELR reports for persons tested at jail to a separate database
  - Reflex PCR testing allows for accurate case classification
  - Supplement surveillance data with clinical information from EMR data





## Using Jail Registry for HCV Care Coordination

- Track receipt of essential services related to chronic HCV
  - Vaccination for hepatitis A and B
  - Receipt of HCV evaluation
  - Documentation of recommended HCV treatment regimen
  - Documentation of tests needed for DAA insurance authorization
- Track date of release to link to HCV care on re-entry
- Partner with Care Transitions Team in jail
  - Provide case management services
  - Connect inmates with a provider capable of treating HCV
  - Follow inmates after re-entry for up to 9 months → assist with retaining in care



## Next Steps in LA County HCV Surveillance

- Clean HCV surveillance data for 2013-2018
- Voluntarily request negative HCV PCR results
  - 4 main laboratory networks conduct >80% of HCV PCR tests
  - Need to address technical issues with receiving results
- Further assess community HCV testing practices
  - Trends in testing overtime
  - Differences in testing practices between top 20 facilities and the other facilities (e.g., top 20 more likely to do reflex PCR testing?)
  - Geographic differences in testing volume and practices
- Augment surveillance system with a probabilistic matching program – use data across all reportable diseases

## Other Sources of HCV Data

- ORCHID - Cerner EHR product
  - Information on ~2 million LAC residents who receive care through the County Health Agency
- SAGE i2b2 – NIH developed data query tool
  - Allows for creating de-identified cohorts for analysis (e.g., how many baby-boomers screened? How many with untreated HCV evaluated at least annually?)
- Seek data from other health department programs
  - HIV program - Cross-reference surveillance databases
  - TB program – HCV screening as part of TB treatment evaluation
  - Immunization program – adult hepatitis A and B vaccines distributed



# Questions?