Epidemiology of Hepatitis C in Pennsylvania

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Pennsylvania Department of Health

C Change:
A Leadership Summit on HCV Policy in Pennsylvania
May 1st, 2015

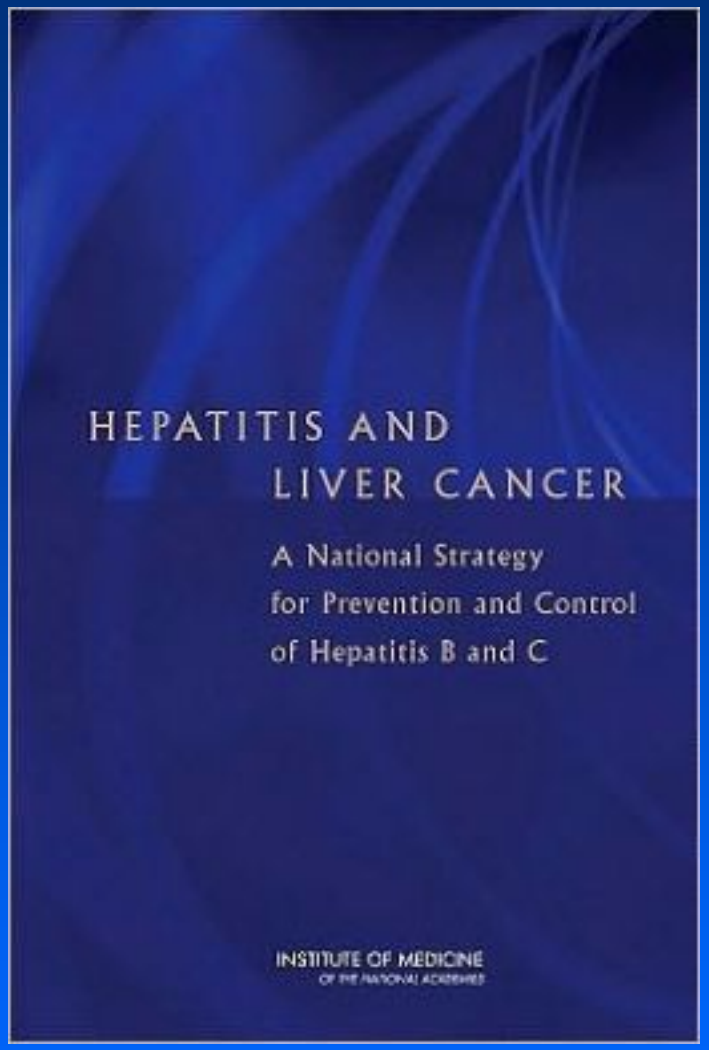
“surveillance is the neurologic system of public health that leads the public health in an effective and efficient way”

Donald Henderson (The leader of smallpox eradication in 1970s)

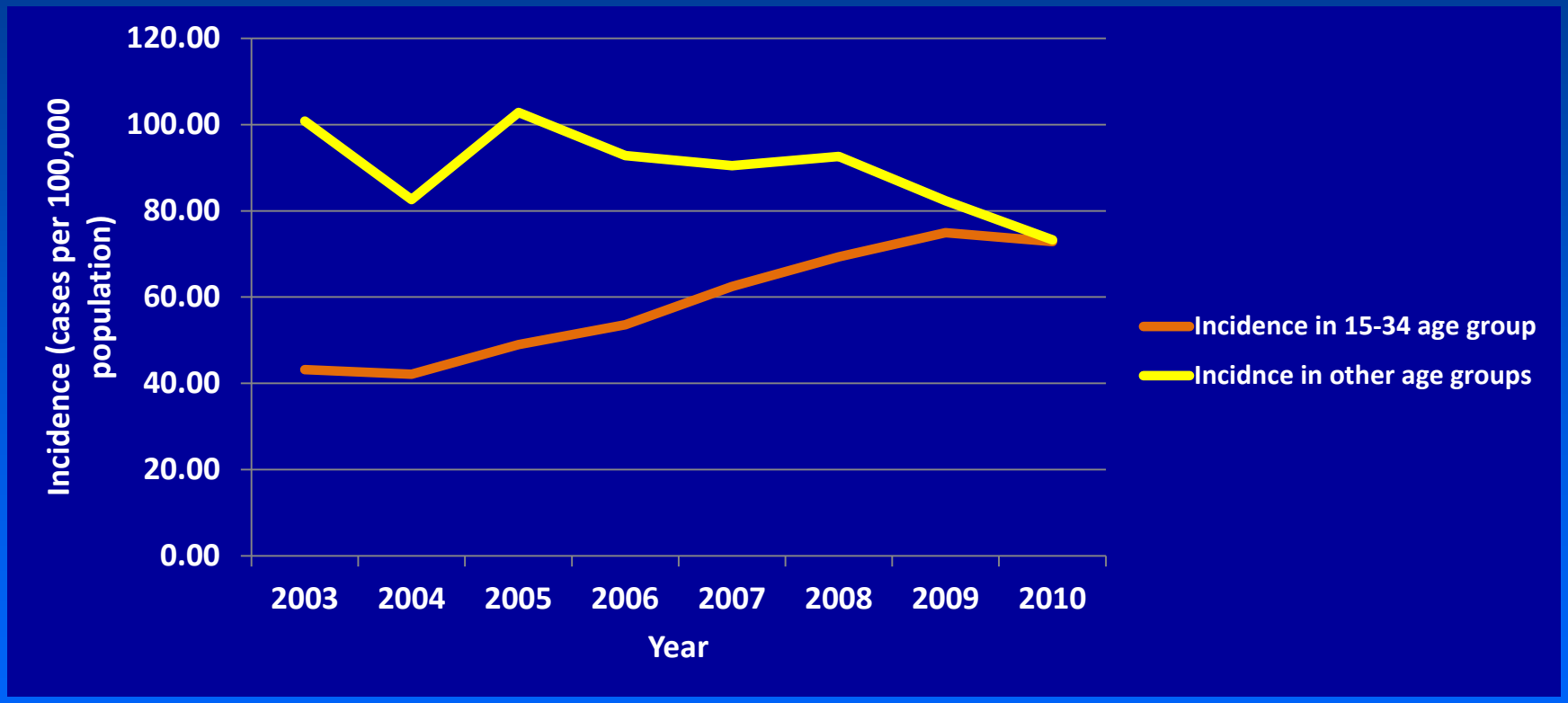
Surveillance of HCV in Pennsylvania

- Hepatitis C is a reportable condition in Pennsylvania
- Most of the hepatitis C reports received in PA NEDSS come through Electronic Laboratory Reporting (ELR) and lack demographic and risk information; therefore these data should be carefully used for programmatic design and evaluation.
- Only reports with acute hepatitis C diagnosis are investigated
- PA NEDSS receives ~ 10,000 new cases of hepatitis C PPI annually, however the distribution of cases has significantly changed.

“There is insufficient understanding about the extent and seriousness of this public-health problem, so inadequate public resources are being allocated to prevention, control, and surveillance programs”

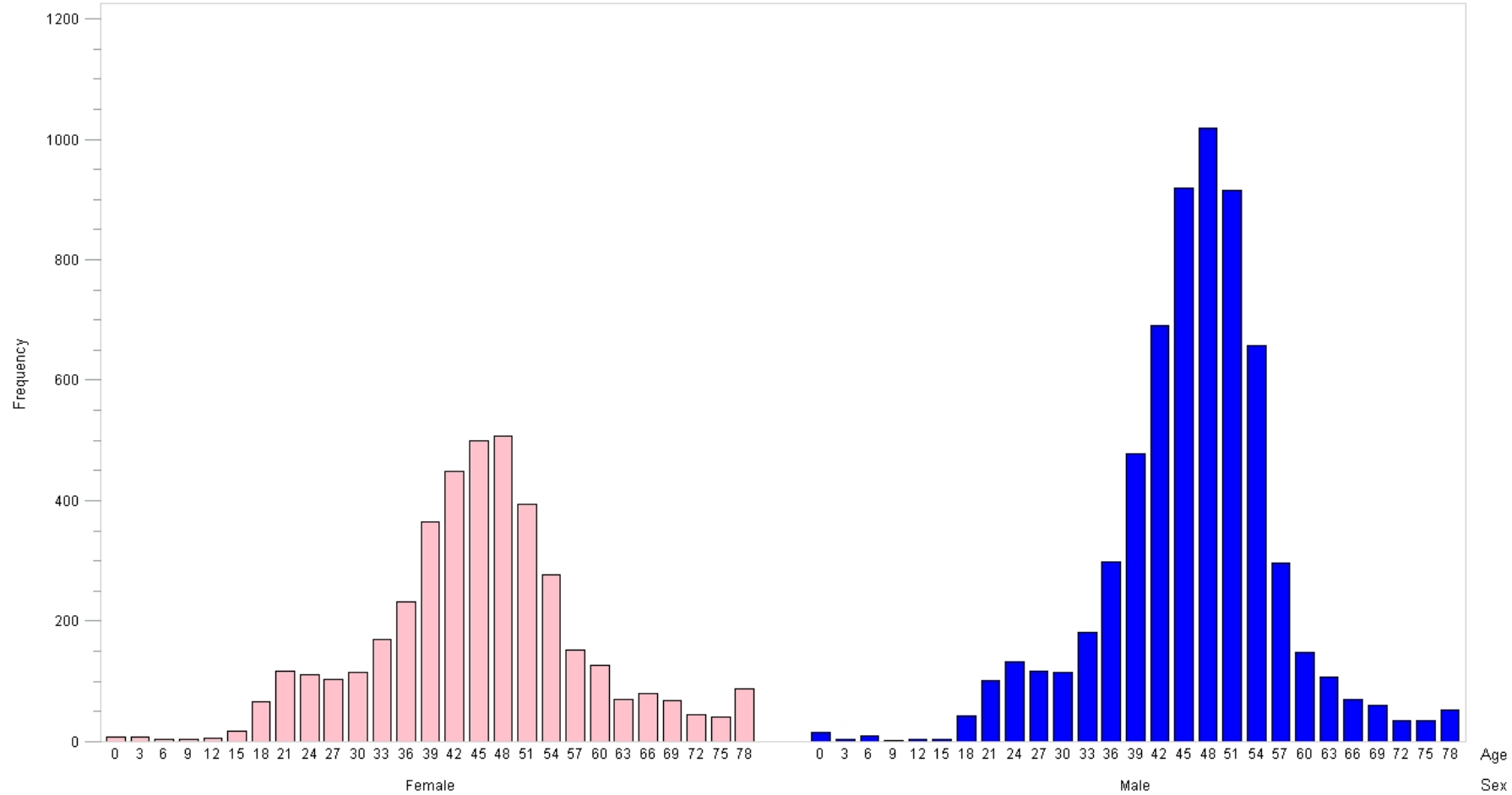


Hepatitis C PPI incidence rate among 15-34 age group vs. all other age groups, Pennsylvania, 2003 – 2010*



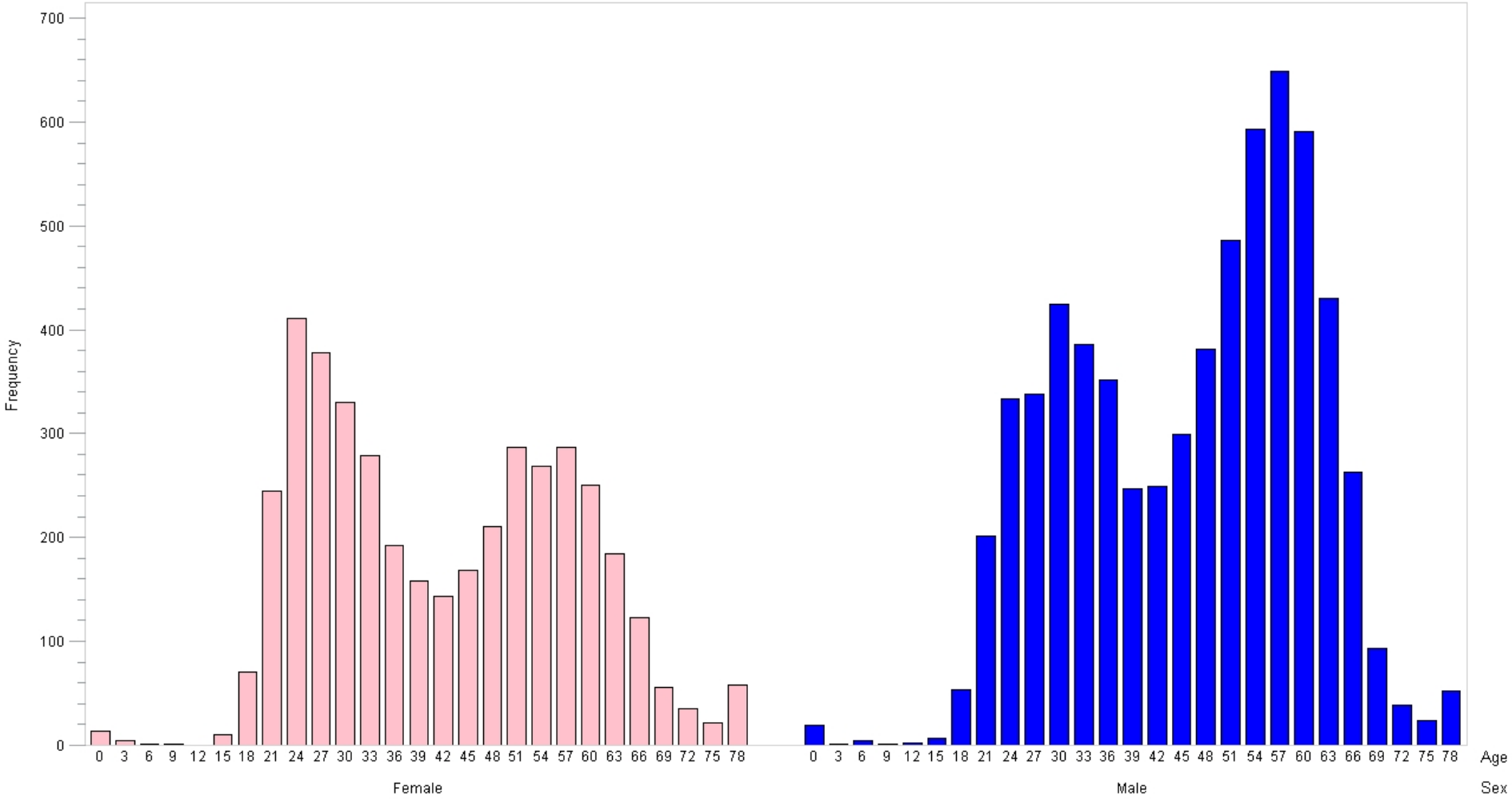
*PA-NEDSS data

Hepatitis C PPI reported to Pennsylvania NEDSS by age and sex, 2003*



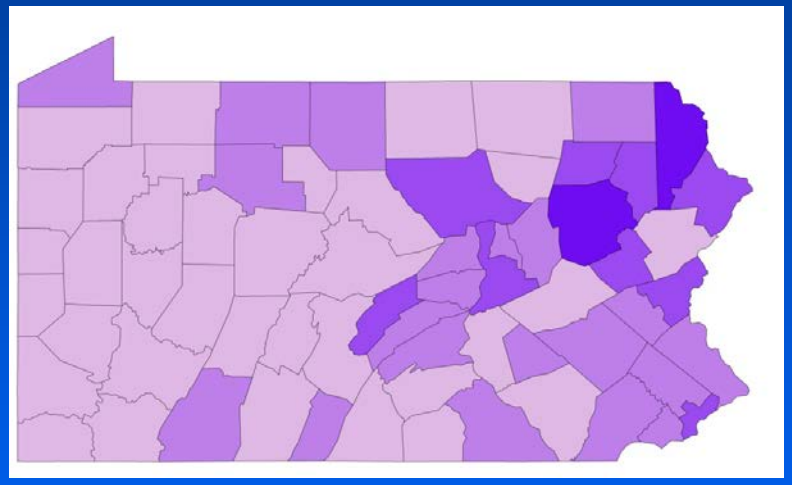
*PA-NEDSS data

Hepatitis C PPI reported to Pennsylvania NEDSS by age and sex, 2014*

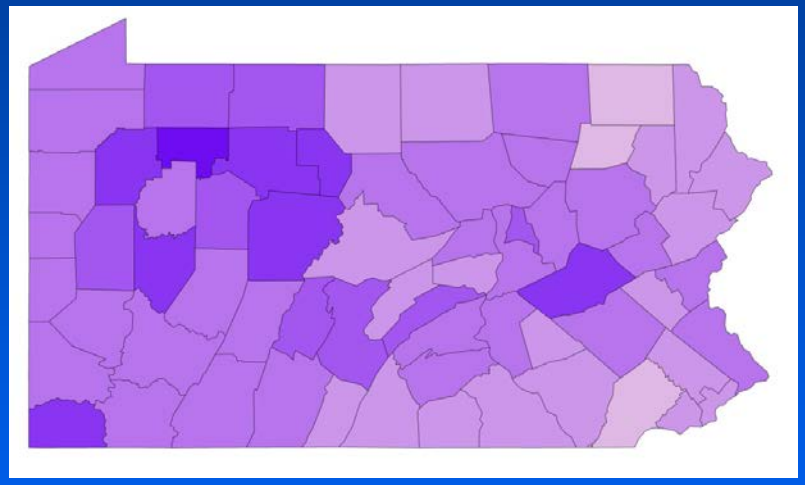


*PA-NEDSS data

Hepatitis C PPI Incidence by County
Age 15-34, Pennsylvania, 2003 and 2014



2003



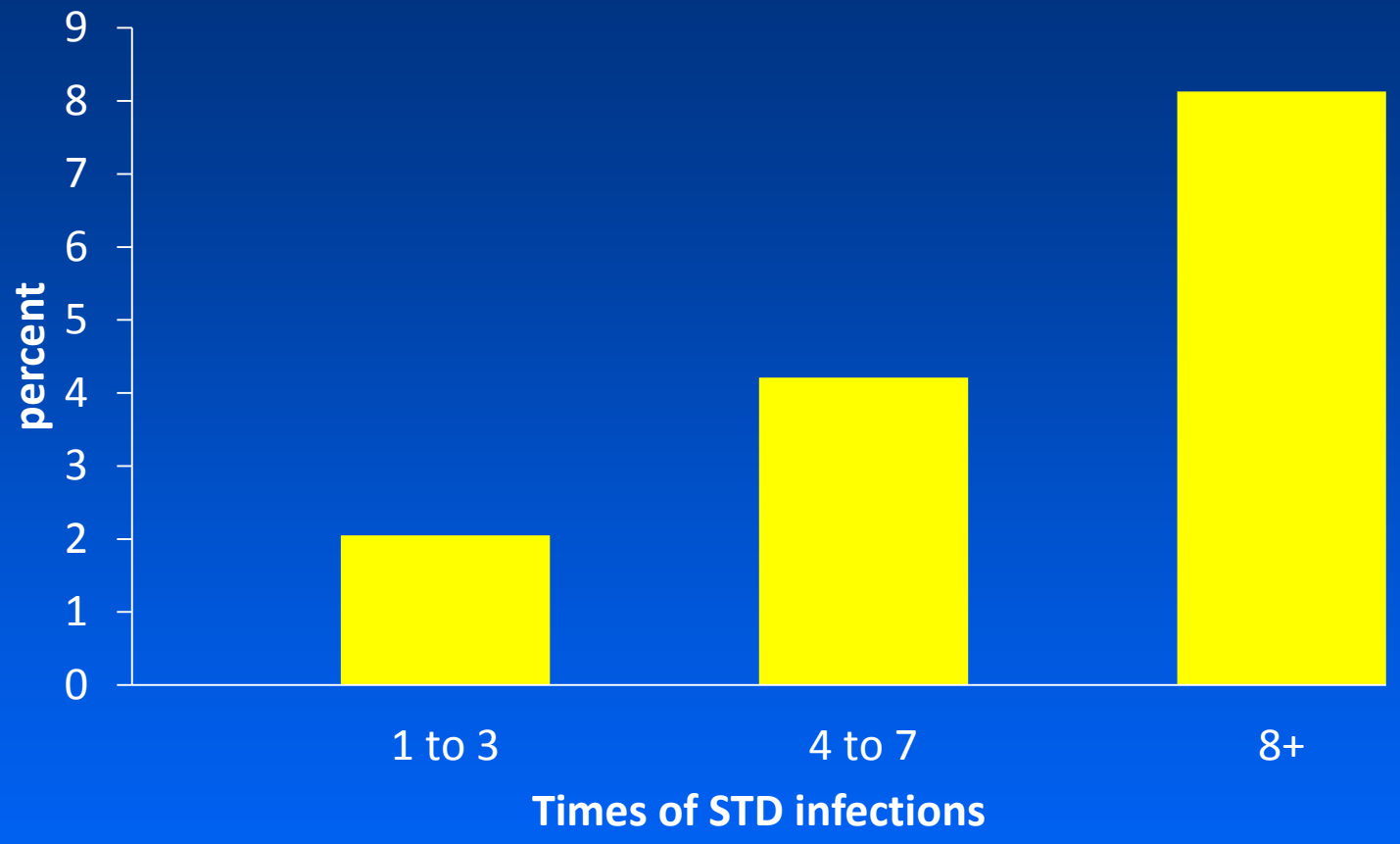
2014

Incidence (case/100000 population)

- 0 - 20.5
- 20.6 - 63.5
- 63.6 - 131.5
- 131.6 - 190.5
- 190.6- 383.5
- 383.6 - 664.5

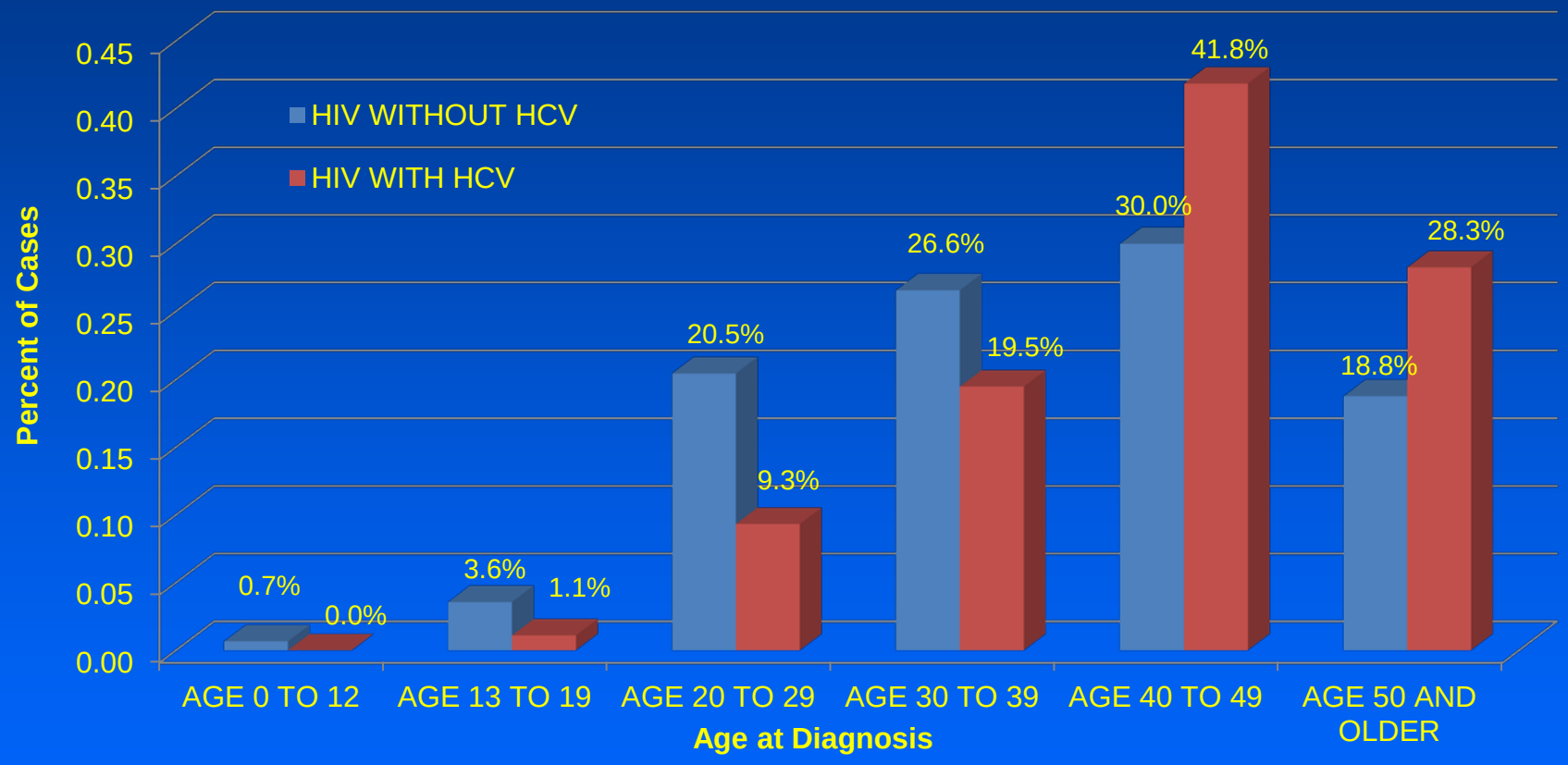
*PA-NEDSS data

Matching PA-NEDSS STD cases against HCV cases, 2000-2014

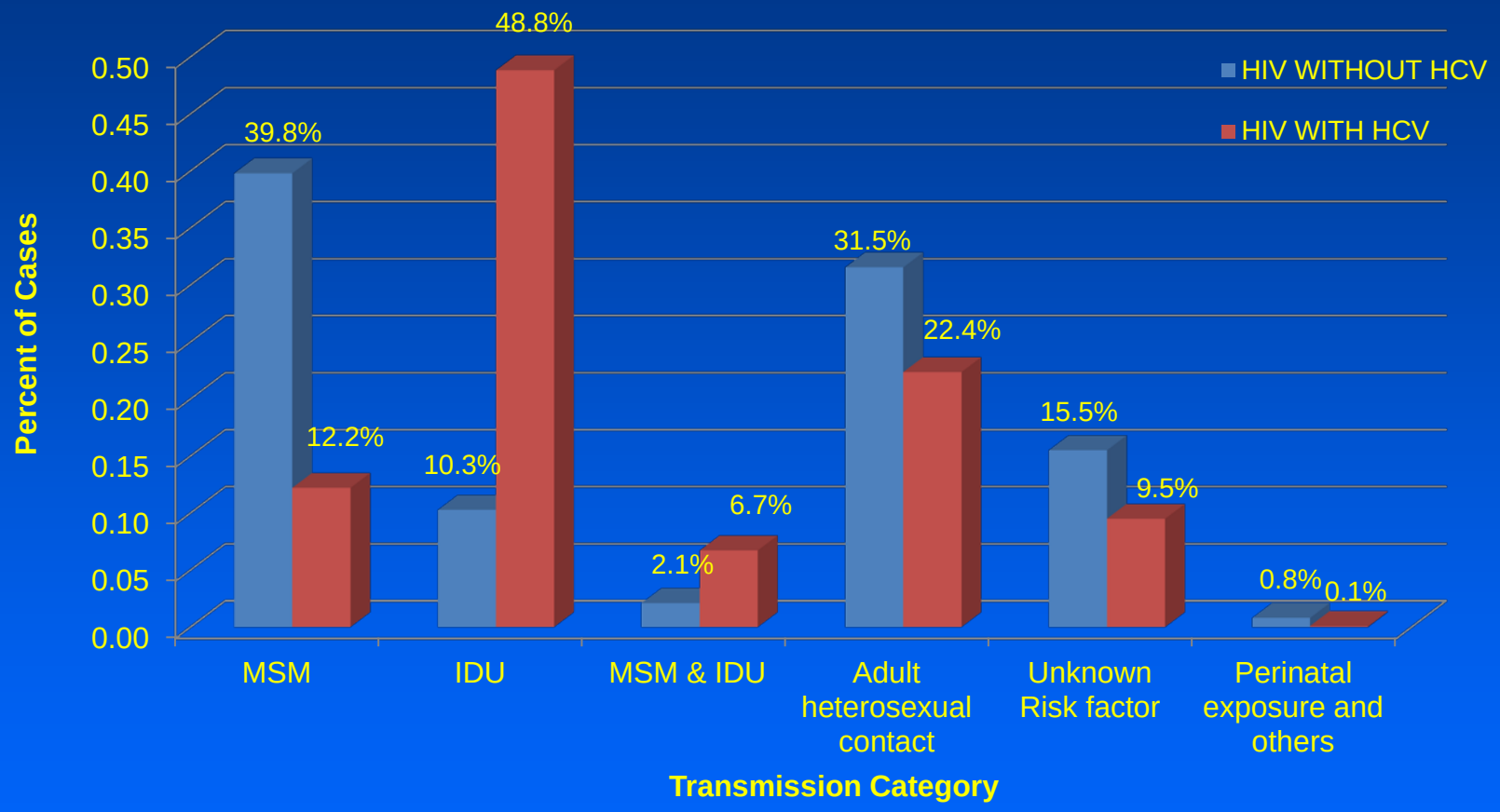


*PA-NEDSS data

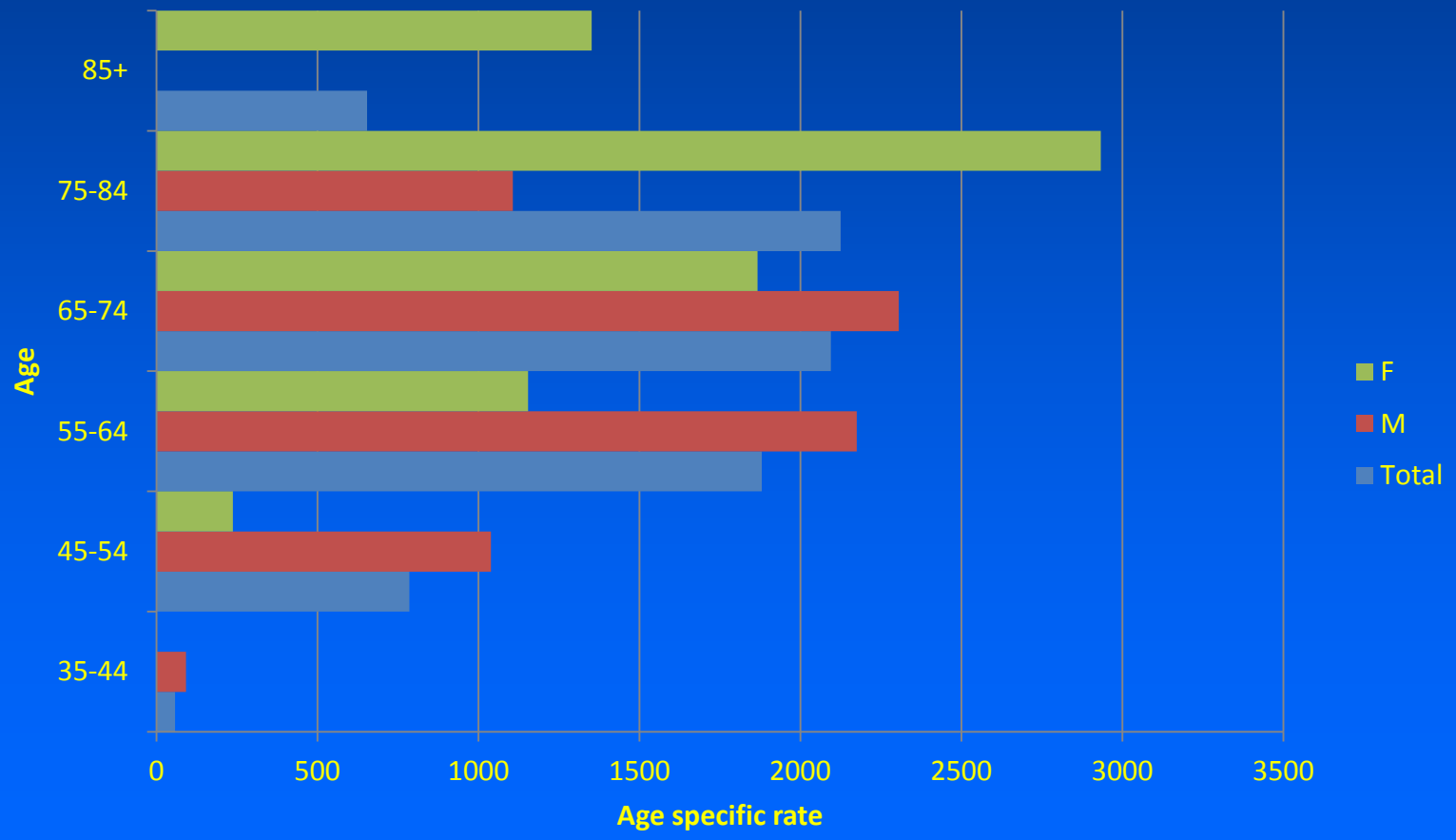
Distribution of HIV With and Without HCV Co-infection Cohorts by Age, Pennsylvania, 2003-2012



Distribution of HIV With and Without HCV Co-infection Cohorts by Transmission Category, Pennsylvania, 2003 -2012

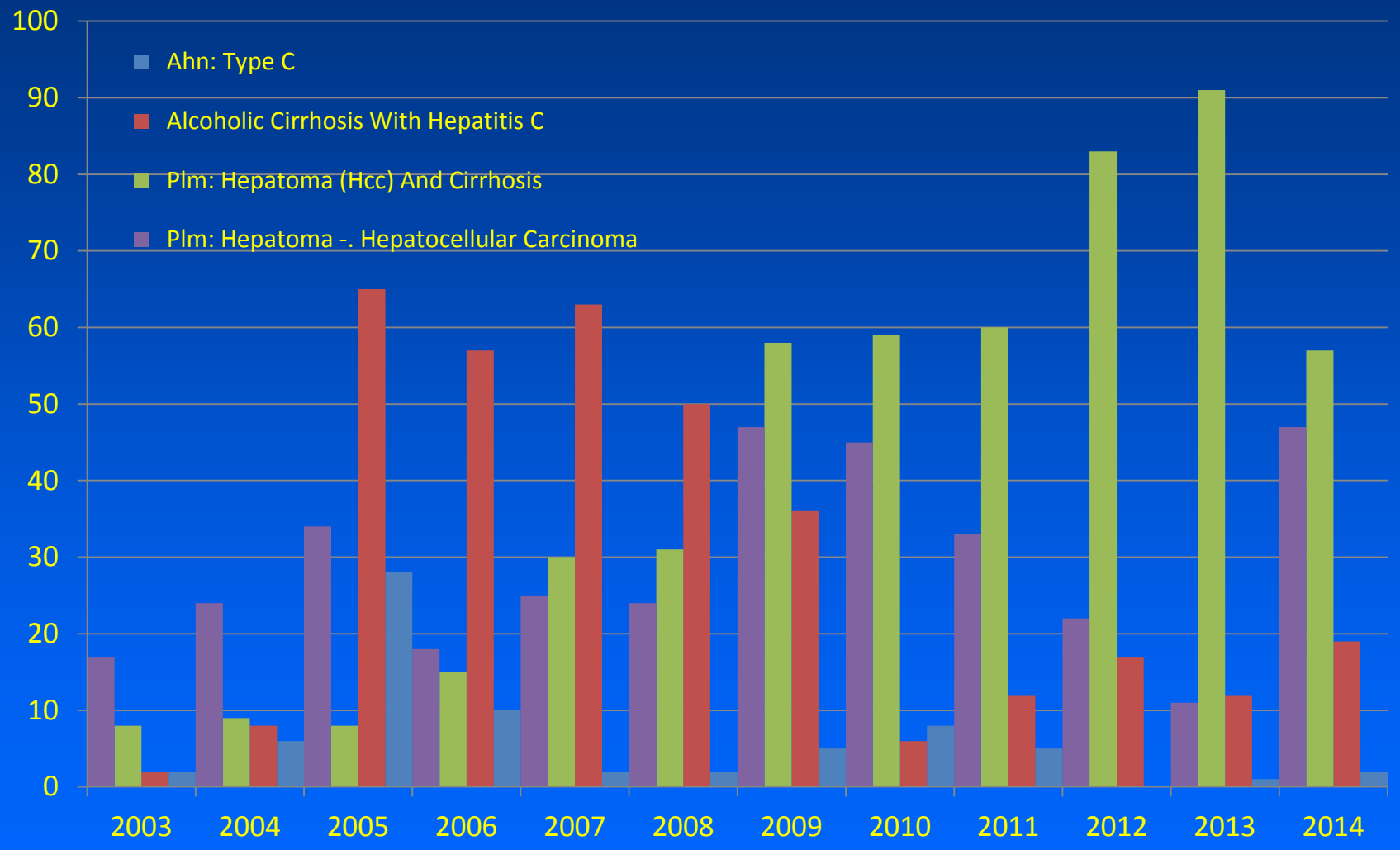


Matching against PA Cancer registry
Age specific incidence of liver cancer among NEDSS population with HCV diagnosis, 2003 to 2010*



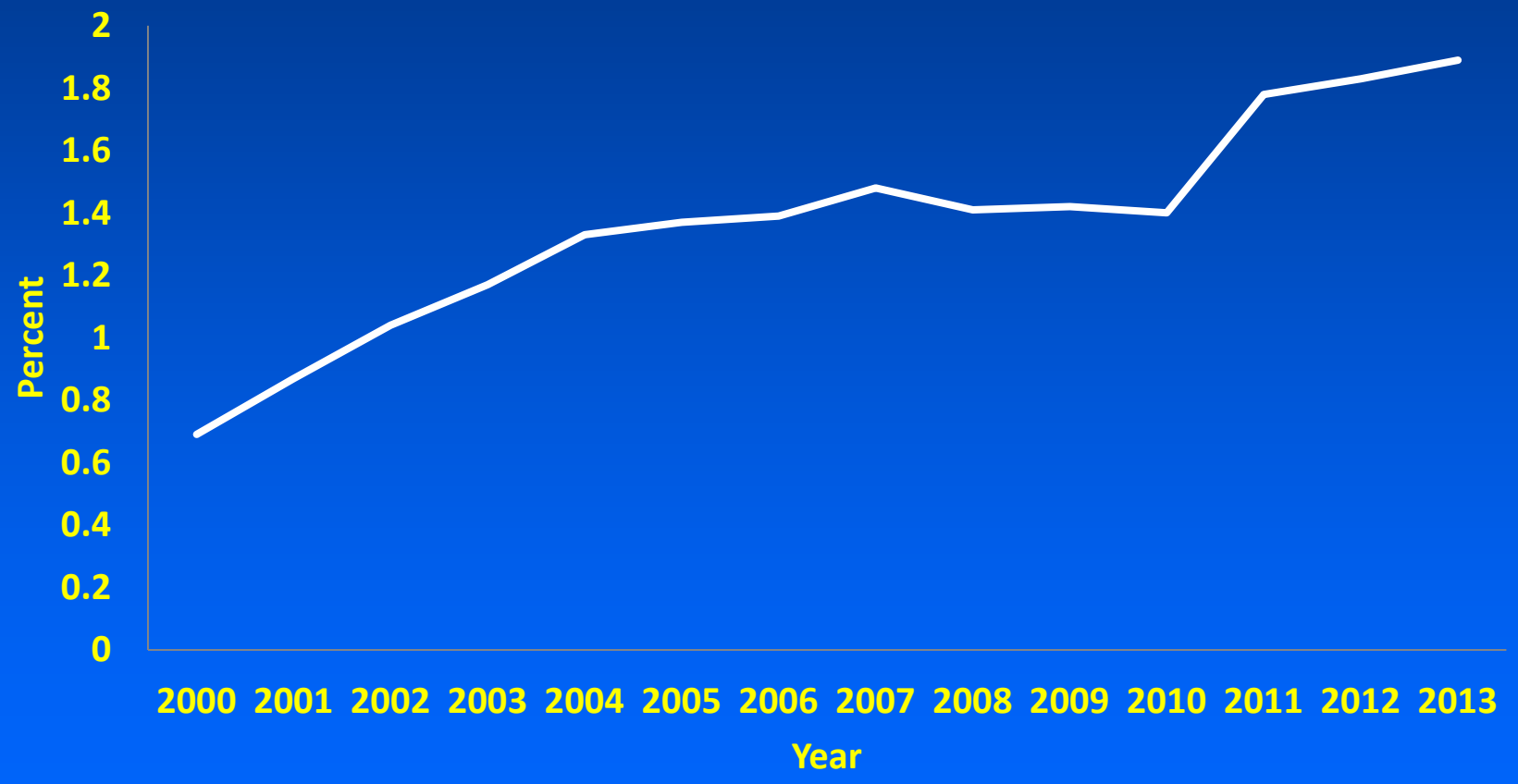
PA cancer registry and PA NEDSS*

HCV related Liver transplants Performed in Pennsylvania 2003-2014*



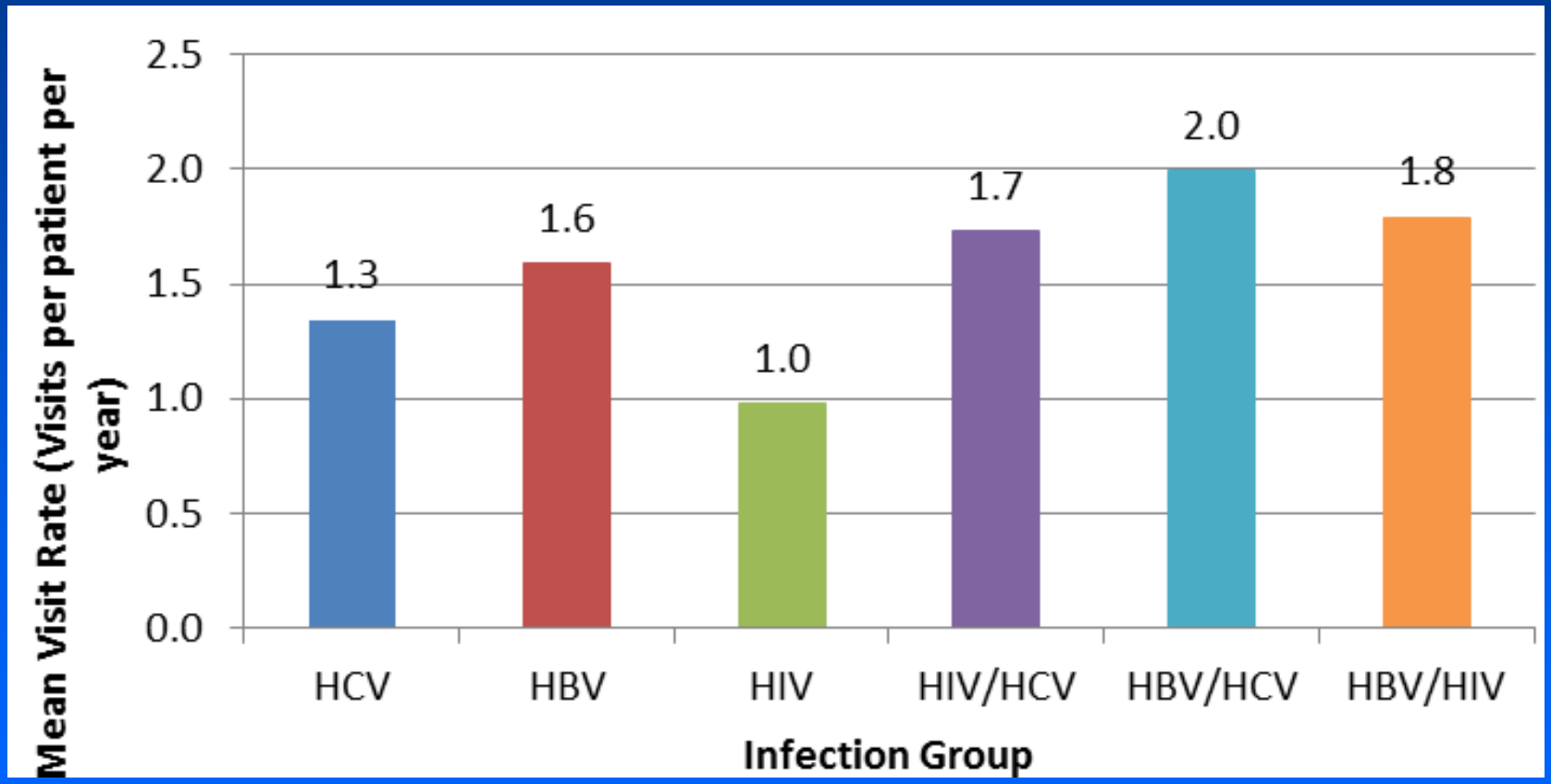
*Organ Procurement and Transplantation Network

Unadjusted percent of Hospital admissions for cases with primary or secondary hepatitis C diagnosis, Pennsylvania, 2000-2013*



* Pennsylvania Health Care Cost Containment Council (PHC4) data

Hospital visit rate among virally co-infected persons relative to mono-infected persons within the PHC4 hospital billing database, Southeastern Pennsylvania, 1996 - 2010.



L. E. Finn et. al., CSTE conference, 2013

Conclusion

- HCV rates are increasing among adolescents and young adults, investigating this new trend is needed to identify risk factors and racial/ethnic groups with higher risk
- Data from additional sources are needed to help us better understand the epidemic (such as commercial lab data, EMR, ….etc)
- Access to these data sources may need policy change
- Most of the discussed consequences of the HCV are readily preventable, if cases are identified and linked to care early in the course of infection.

Hepatitis C Surveillance at the Philadelphia Department of Public Health

Kendra Viner, PhD, MPH

C Change:
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Formation of the Hepatitis Epidemiology Program (HEP)

- **2005**– First Viral Hepatitis Prevention Coordinator
  - Emphasis on **collaboration** to align local efforts with national Action Plan
- **2012** – The Hepatitis C Allies of Philadelphia (HepCAP) formed
  - Mission: To team up with local HCV specialists and community members to improve the continuum of HCV prevention, diagnosis, care and support in Philadelphia.
- **2013** – Hepatitis surveillance grant awarded
  - HEP investigation forms and protocols created
  - HEP team expanded to include a surveillance coordinator, epidemiologist, and 3 investigators (HEPIs)
  - A Health Alert about HEP sent to all local health care facilities.
  - Case investigation initiated!

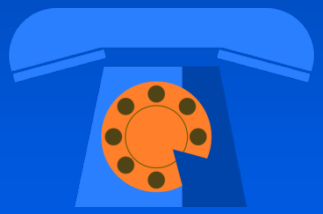
- **2015** – HEP now has 2 years of robust surveillance data

Hepatitis surveillance

Communicable Disease Management System

Workflows created with a line list of patients for each hepatitis investigator

Letter sent to newly reported HCV+ patients and their providers



patient and provider calls made (*4 attempts*)

Field visits made, if necessary

Demographic, Clinical, Risk Factor Information obtained

Data entered into CDMS

Completeness of chronic confirmed HBV and HCV Investigations

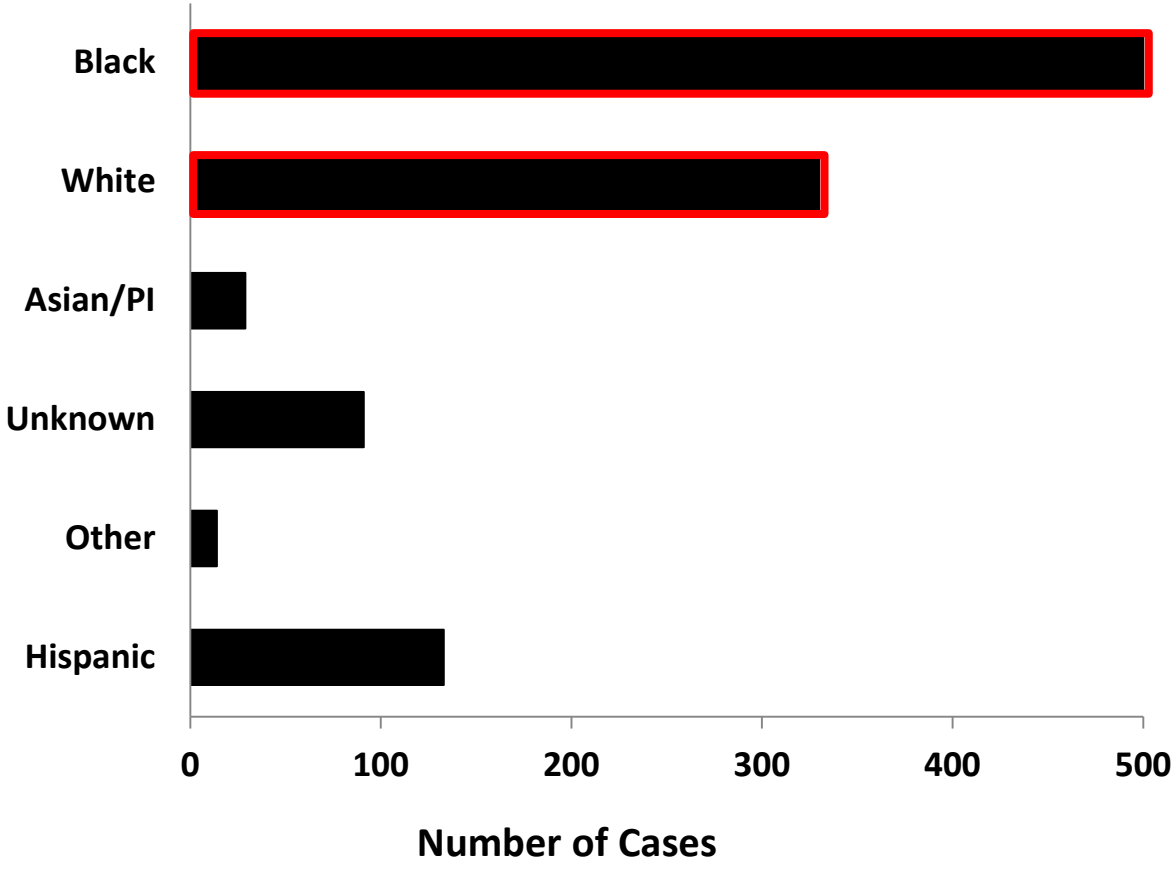
- Newly identified hepatitis-infected individuals reported to PDPH each year

Fields		Completeness	
		2012	2013 (investigated)
Demographics	gender	98%	99%
	age	99%	99%
	race/ethnicity	8%	82%
Clinical	HIV	1%	87%
	diabetes	1%	84%
Risk Factor	IDU	8%	87%
	incarceration	8%	87%
	tattoo	7%	87%
	employed med/dent field	0	87%
	health insurance	0	48%

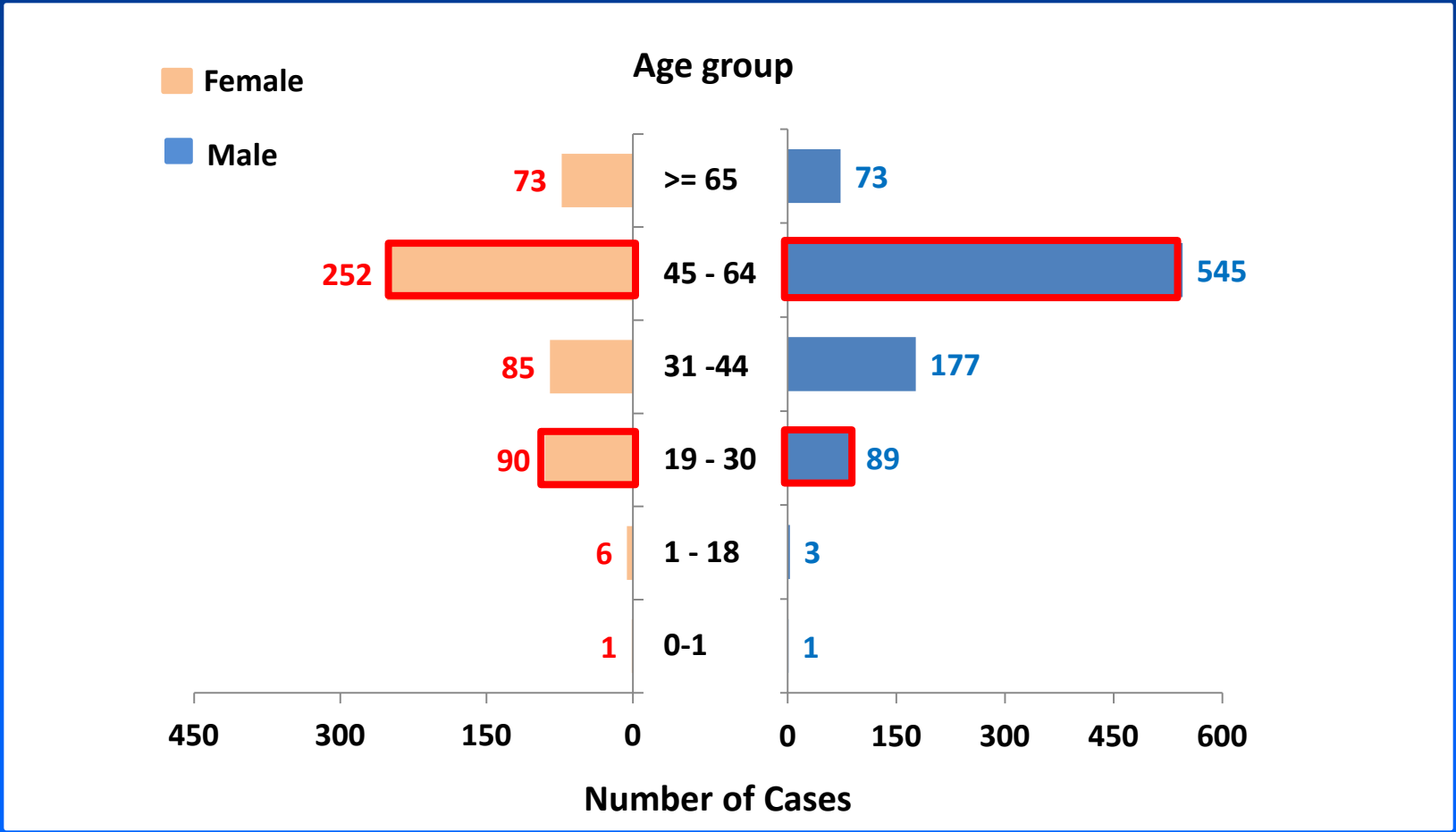
Philadelphia DPH Hepatitis Surveillance Findings

Investigated HCV cases by race: Philadelphia, 2013-2014

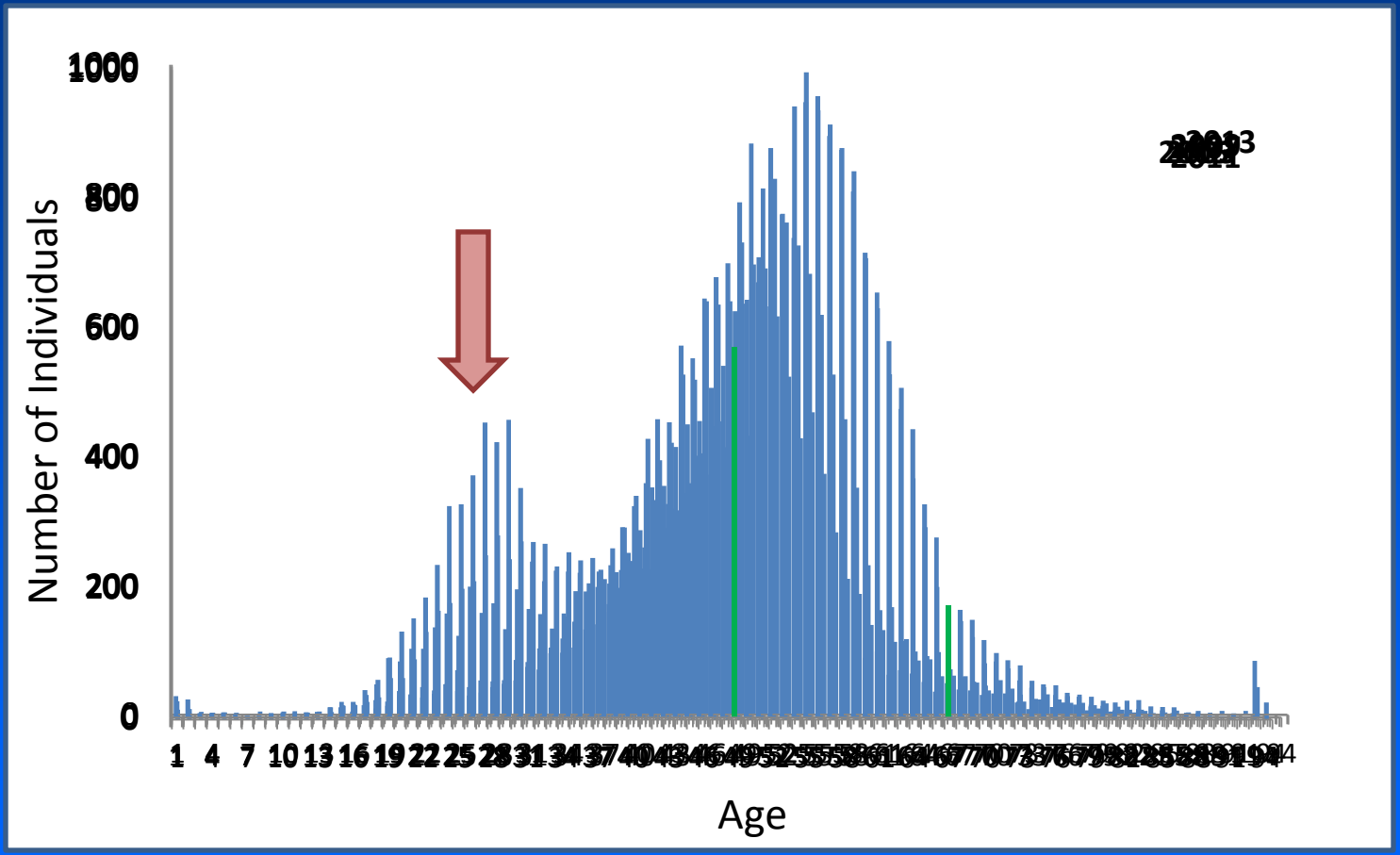
- ~ 2,500 HCV Ab+ individuals newly reported to Health Dept each year
- ~50% are investigated



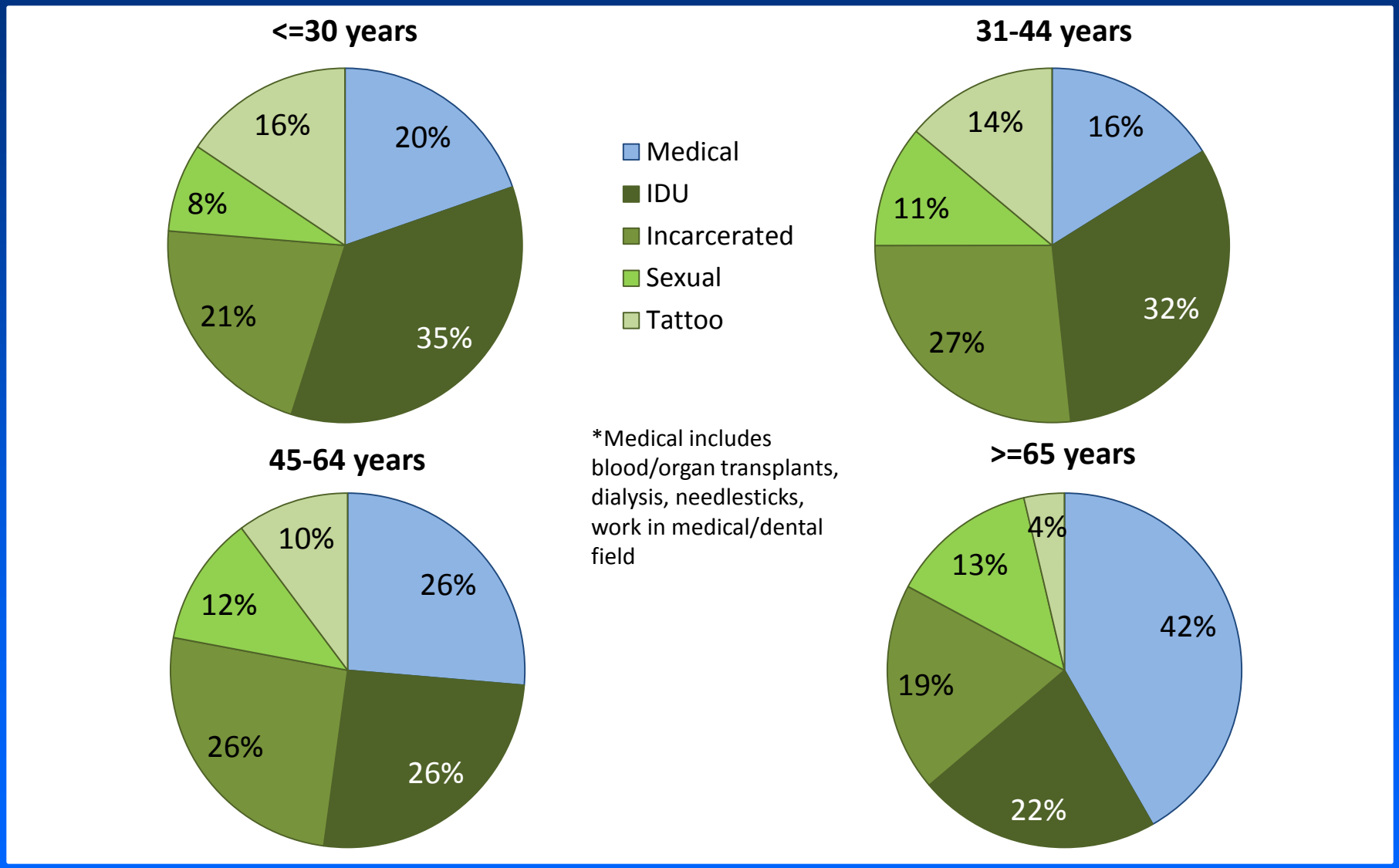
Investigated HCV cases by age and gender: Philadelphia, 2013-2014



A new population of young HCV cases is emerging in Philadelphia



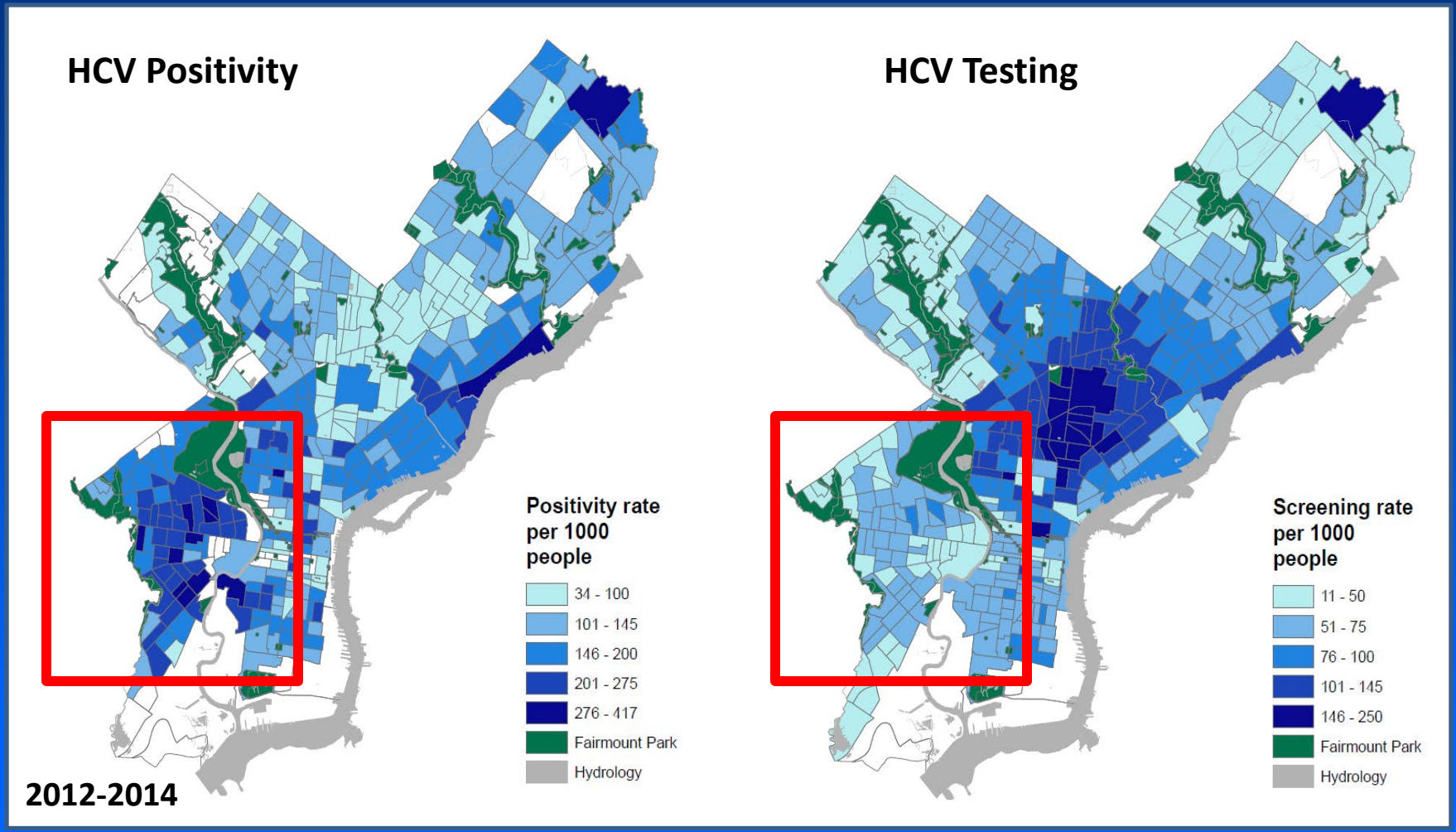
Investigated HCV cases by age and risk factor: Philadelphia, 2013-2014



- Behavioral risk factors (injection drug use and incarceration) account for most of the hepatitis C cases

How is the Philadelphia DPH hepatitis surveillance data being used?

To understand patterns of HCV testing and positivity

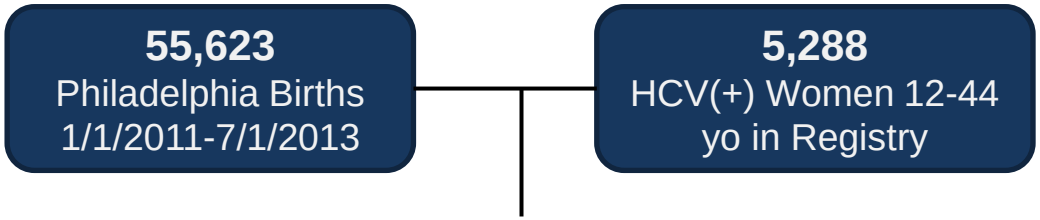


- HCV screening may not be appropriately targeting all at-risk populations in Philadelphia

To understand current protocols for perinatal HCV testing in Philadelphia

- As HCV rates increase among young IDU, there is increased risk for vertical transmission.
- 5 - 10% of infants born to HCV-positive mothers are unable to clear the infection by 18 months of age.
- CDC recommends screening all pregnant woman with HCV risk factors.
- AASLD and ACOG recommend screening infants born to HCV(+) women for anti-HCV antibody after 18 months
- HCV treatment is approved for children ≥3 years of age.

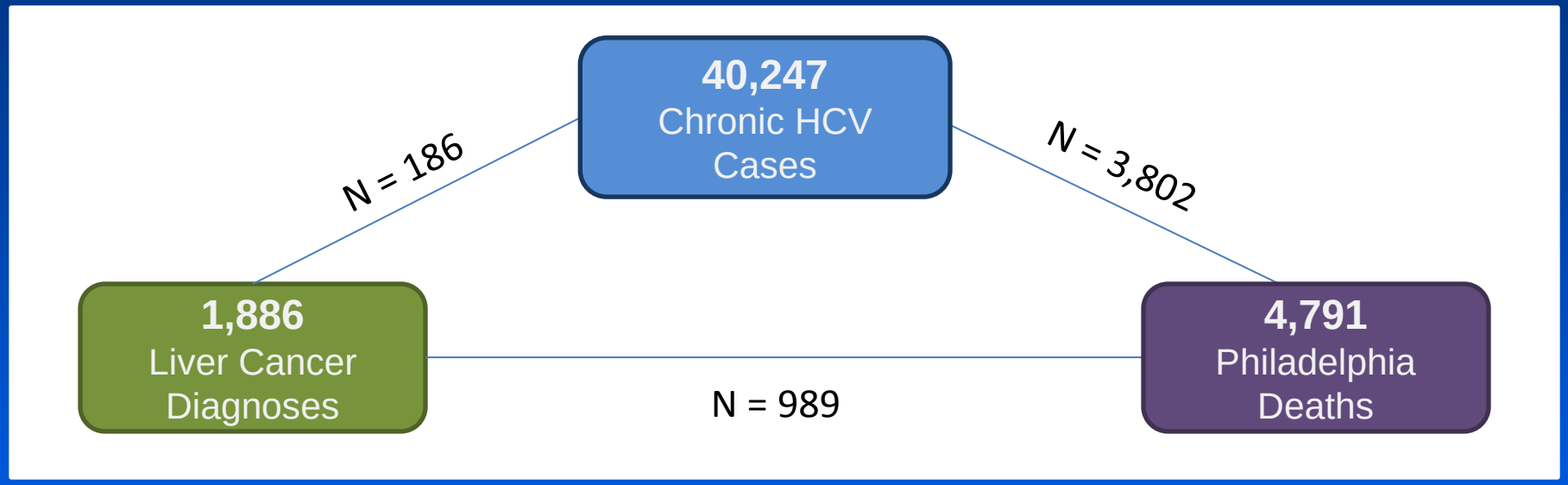
Most HCV-positive infants are not being screened or linked to care



Unpublished data – not for distribution

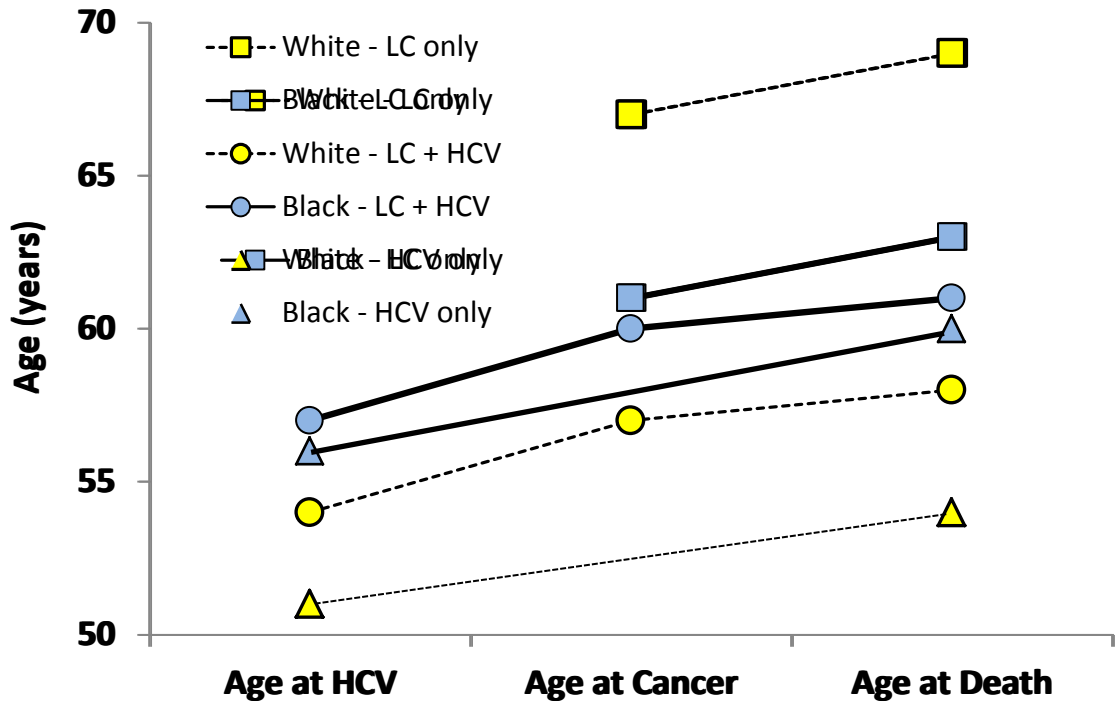
- Assuming a rate of 5.8%, an additional 27 infants would be expected to have developed chronic HCV infection

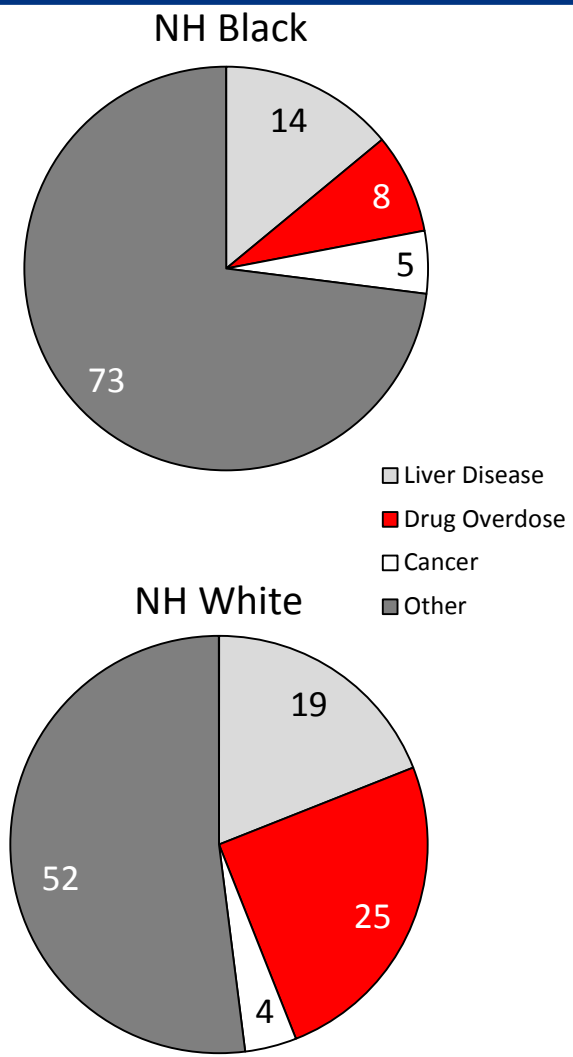
To assess racial disparities in disease outcomes: Philadelphia, 2003 - 2012



- HCV surveillance data (2003-2012) was linked to PA Cancer Registry and PA Death Certificate data on name, address and DOB.
- Cancer Registry data was limited to liver cancers (LC).
- HCV outcomes were assessed by non-Hispanic black or NH white race/ethnicity.

There are marked disparities in age at event between NH blacks and whites





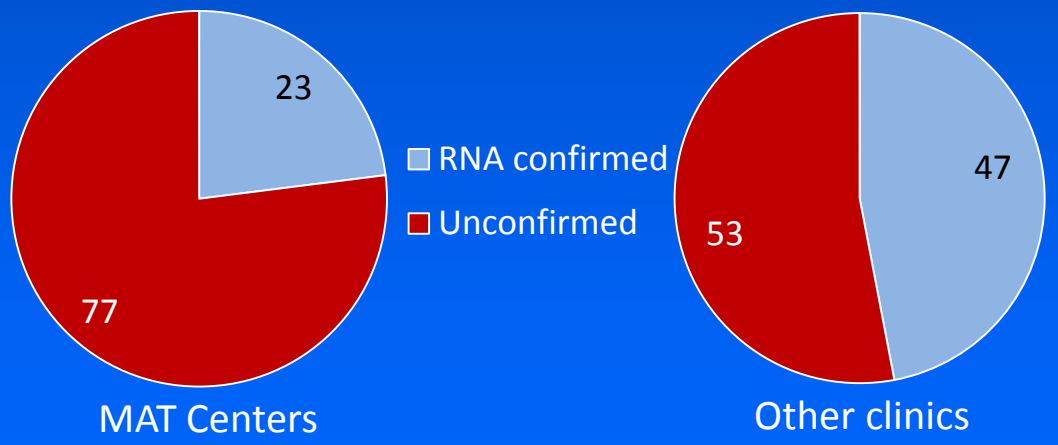
*Unpublished data – not for distribution

- Non-Hispanic blacks die from liver cancer at a younger age than whites, while NH whites with HCV die at a younger age than blacks (likely due to ⇑ drug overdose)

To assess HCV testing practices in Medication Assisted Treatment (MATs) centers

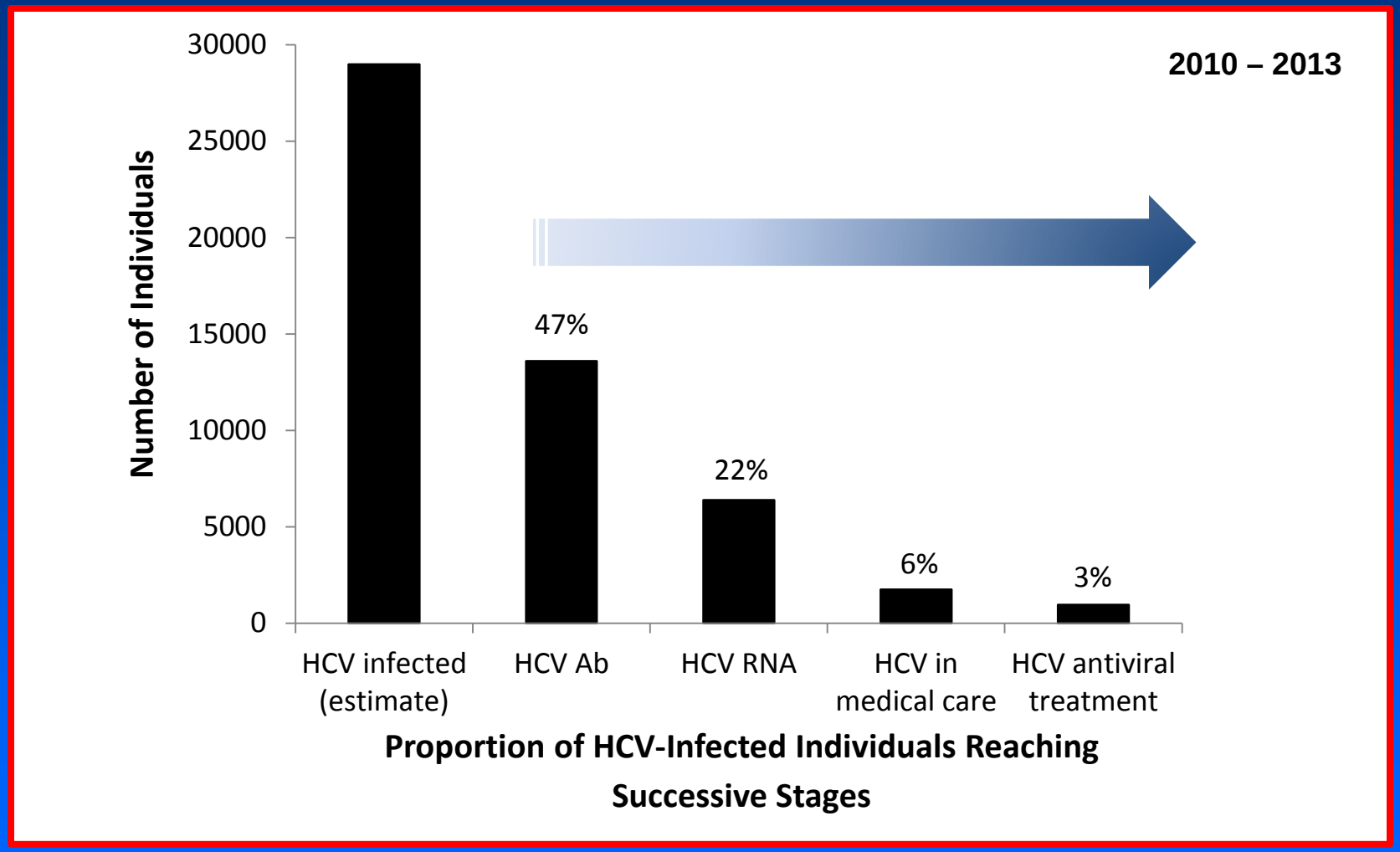
Type of Testing Facility	# Clients receiving HCV Ab testing, 2011 - 2014				
	1 Test	2 Tests	3+ Tests	Total Duplicate Tests	Est $ Lost
MATs	724 (36%)	500 **(25%)**	815 **(39%)**	2,960	$59,200
Other clinics*	8,557 (74%)	2,201 (19%)	878 (6%)	4,379	$87,580
TOTAL	9,281	2,701	1,693	7,339	$146,780

**hospitals, health centers, community based organizations*



- Duplicate HCV Ab testing is common in Philadelphia's MAT centers, <u>but few clients are RNA confirmed.</u>

To provide a 'real-life' snapshot of how HCV is being managed in a major U.S. urban center (ie. Phila)



- HCV-positive individuals are being lost at all stages of the HCV testing, referral to care, and treatment cascade

In Conclusion

- **Our data show that in Philadelphia:**
  1. HCV testing may not be appropriately targeted, both geographically and demographically.
  2. HCV testing is not being efficiently regulated (especially in drug treatment centers).
  3. There are profound racial disparities in age at liver cancer and death.
  4. HCV is on the rise among young, white, injection-drug users.

  ***** A very low percentage of HCV seropositive patients are getting the testing, care, and treatment they require.***

- Alex Shirreffs will discuss how these issues are being addressed . . .

Improving the Cascade: Challenges of Moving from Testing toTreatment

Alex Shirreffs, MPH

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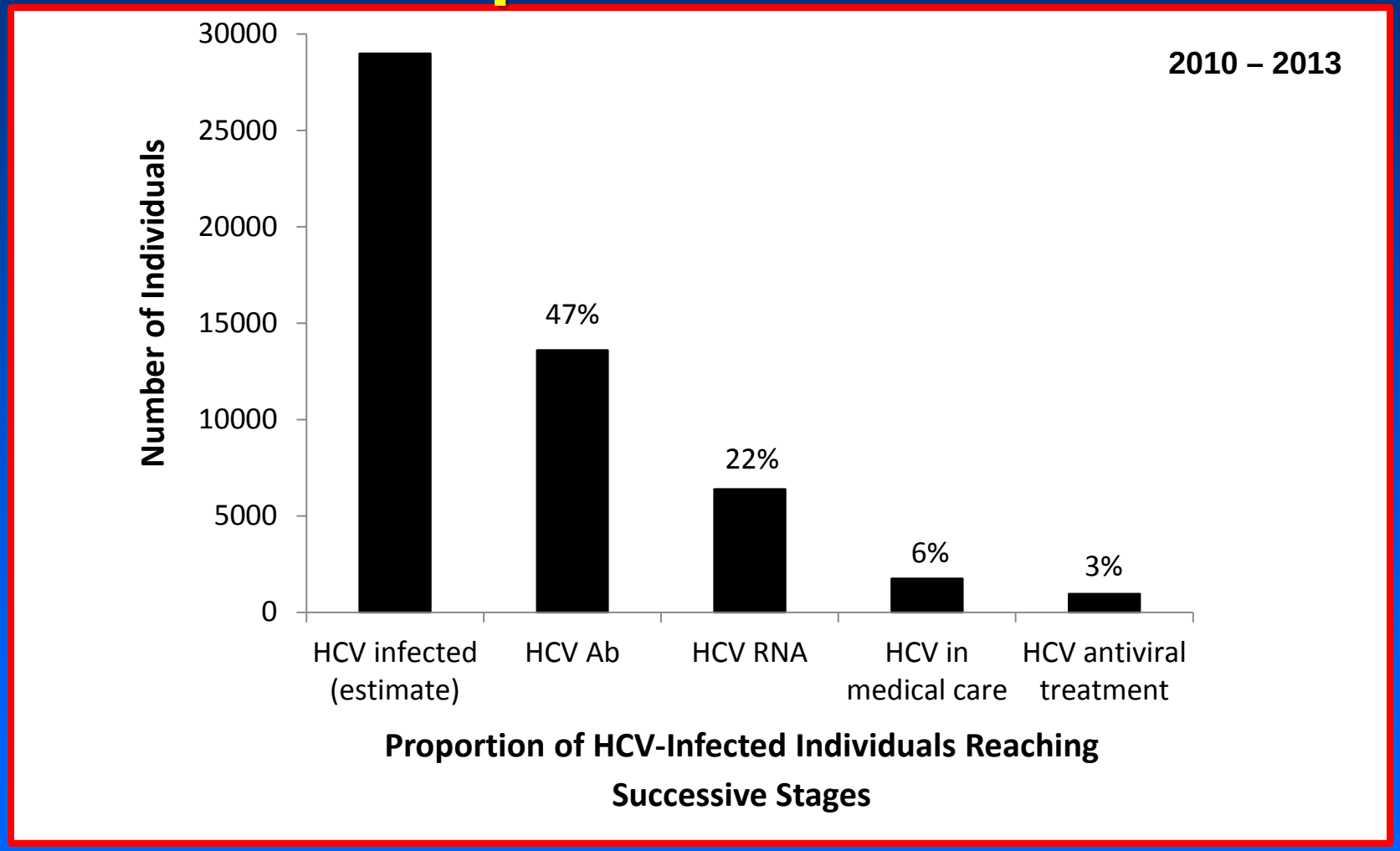
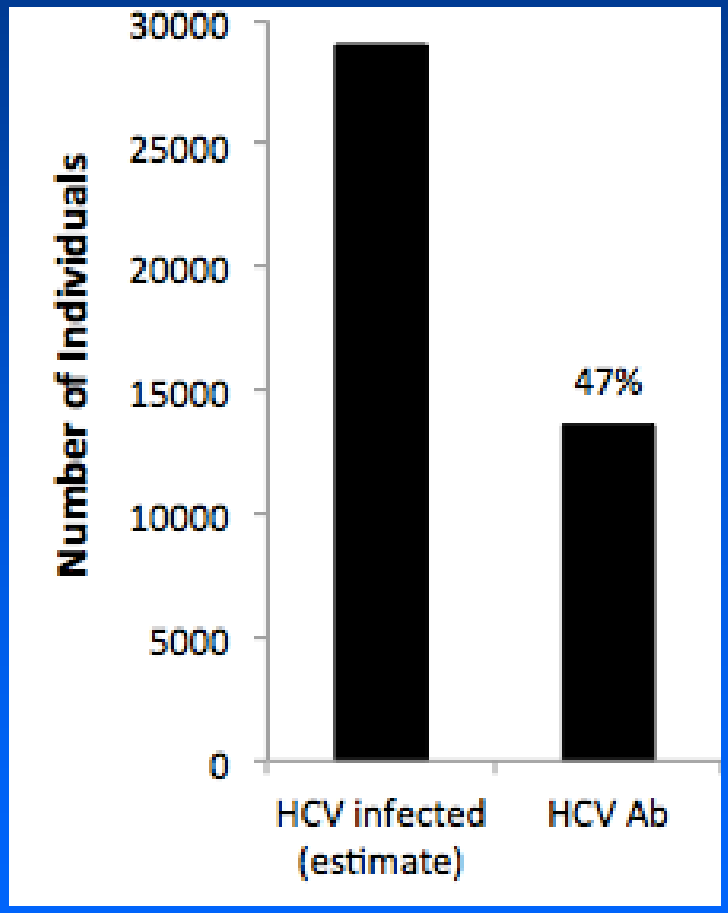
Today's Dialogue:
How do we improve the cascade in PA?

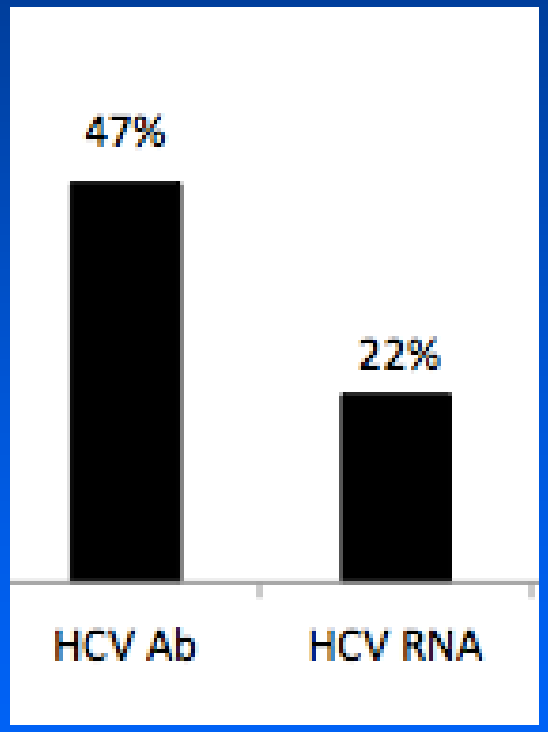


Hepatitis C Screening



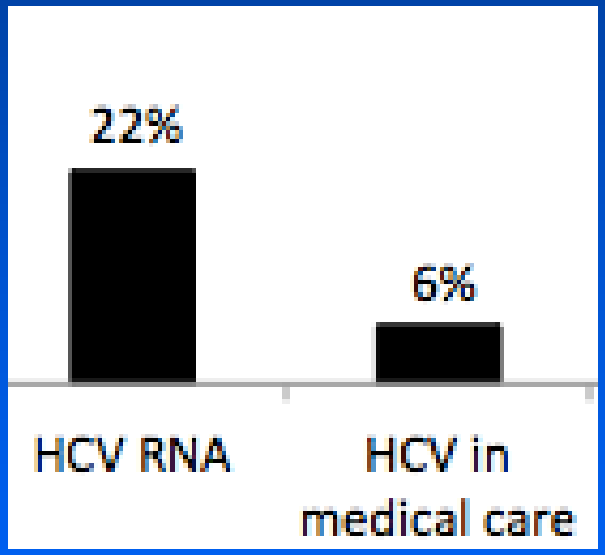
- Patient Attitudes
  - I've been tested… haven't I?
  - I don't need to be tested.
- Provider Attitudes
  - My patients aren't at risk
  - I have enough to do in 20 minutes!
- Knowledge
  - Tools to support testing (EMR)
  - New screening guidelines
- Stigma
  - Drug use, "bad" behavior

Confirmatory Testing



- Knowledge
  - Testing Algorithm
- It Takes Two!
  - AB and RNA not always packaged together
- Resources
  - Rapid Hep C Test: $20
  - RNA Test: $50-$100+
  - Access to Reflex testing
- Testing Policies
  - Rapid testing protocols
  - Institutional settings
    - Jails, Prisons, Drug Treatment

Linkage to Care



Too many steps to get there

- Challenges of navigating the systems

Knowledge

- Where to refer people for hep C care
- What will insurance cover??

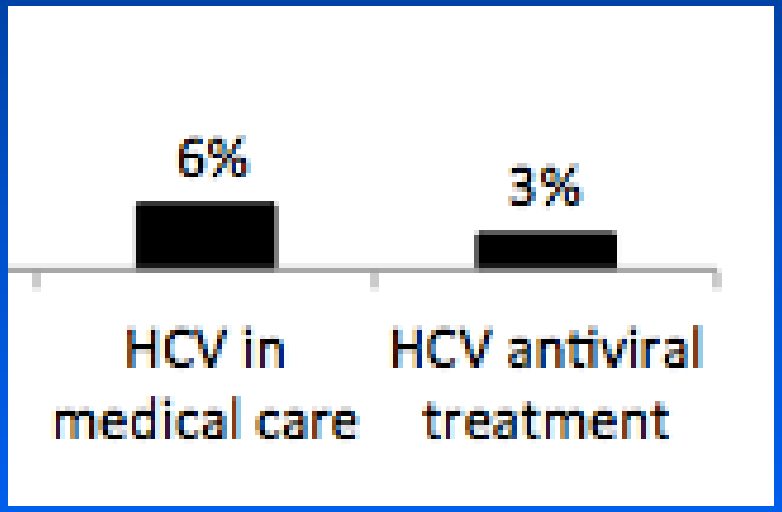
Resources

- Support for Care Coordination

Attitudes

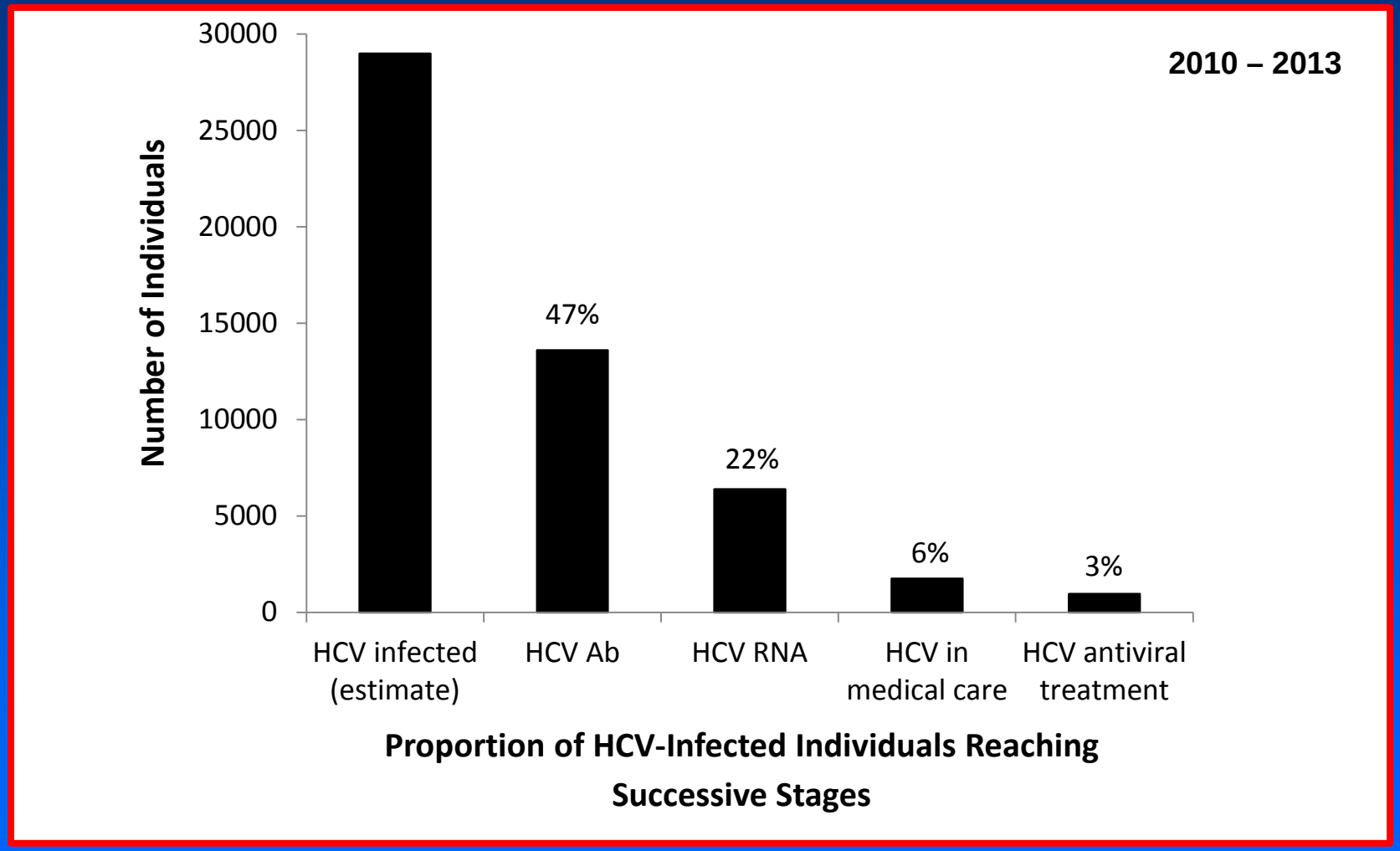
- Everyone has it, it's not a big deal
- My doc told me not to worry
- I'm just a carrier

Treatment (CURE!)



- We can treat everyone…in theory
  - Cost
  - Restrictions
- Capacity
  - Long process to get tx
  - Do we have enough clinicians to treat everyone with hep C in PA?
- Knowledge
  - AASLD Guidelines
    - How they get translated by different stakeholders

Once we start improving… how do we measure??



Goes back to the issue of data and surveillance!