

The Impact of Forensic Evidence in Sexual Assault Case Outcomes

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Project Overview

Goals:

1. To provide a detailed description of forensic evidence in sexual assault cases, including its timing relative to criminal justice outcomes;
2. To examine the relationship of forensic evidence to arrest; and
3. To analyze the impact of forensic evidence in key segments of the sample.

Sexual Assault Case Outcomes:

Types of Evidence

- Sexual assault victims have a unique place in the criminal justice system: witnesses and crime scenes
- Evidence in sexual assault cases
 - Physical evidence – Photographs of injuries, property, clothing.
 - Forensic evidence – Fingerprints, hair, bodily fluids, fibers.
- Improvements in evidence collection
 - Examination techniques to improve injury identification
 - Analytical techniques to improve DNA extraction
 - Sexual Assault Nurse Examiners (SANE) programs to improve data collection

Sample

- Sampling Procedures
 - Random sample of cases in which a Provider Sexual Crime Report (PSCR) was collected between 2008 and 2010.
 - Original sample pool = 2,731
 - Final N = 528
- Data sources
 - PSCR database
 - Massachusetts Executive Office of Public Safety and Security
 - Crime laboratory reports
 - Massachusetts State Police Crime Lab
 - Boston Police Crime Lab
 - Police reports

Types of Data Collected

PSCR Database

- Victim age, sex, race/ethnicity
- Location of assault (city and surroundings)
- Location/date/time of exam
- Exam provider (SANE/non SANE)
- Number of assailants
- Assailant-victim relationship
- Weapon type
- Description of assault
- Reported to police
- Completion of evidence kit/toxicology

Crime Laboratory Data

- Injury type, frequency, location
- Type of examinations completed
- Type of evidence collected (physical, forensic)
- Date/time of evidence kit collected
- Date/time kit arrival to lab
- Date/time of report of lab results
- Laboratory results

Police Outcome Data

- Unfounded
- Arrest made/arrest date
- Charged/charge date

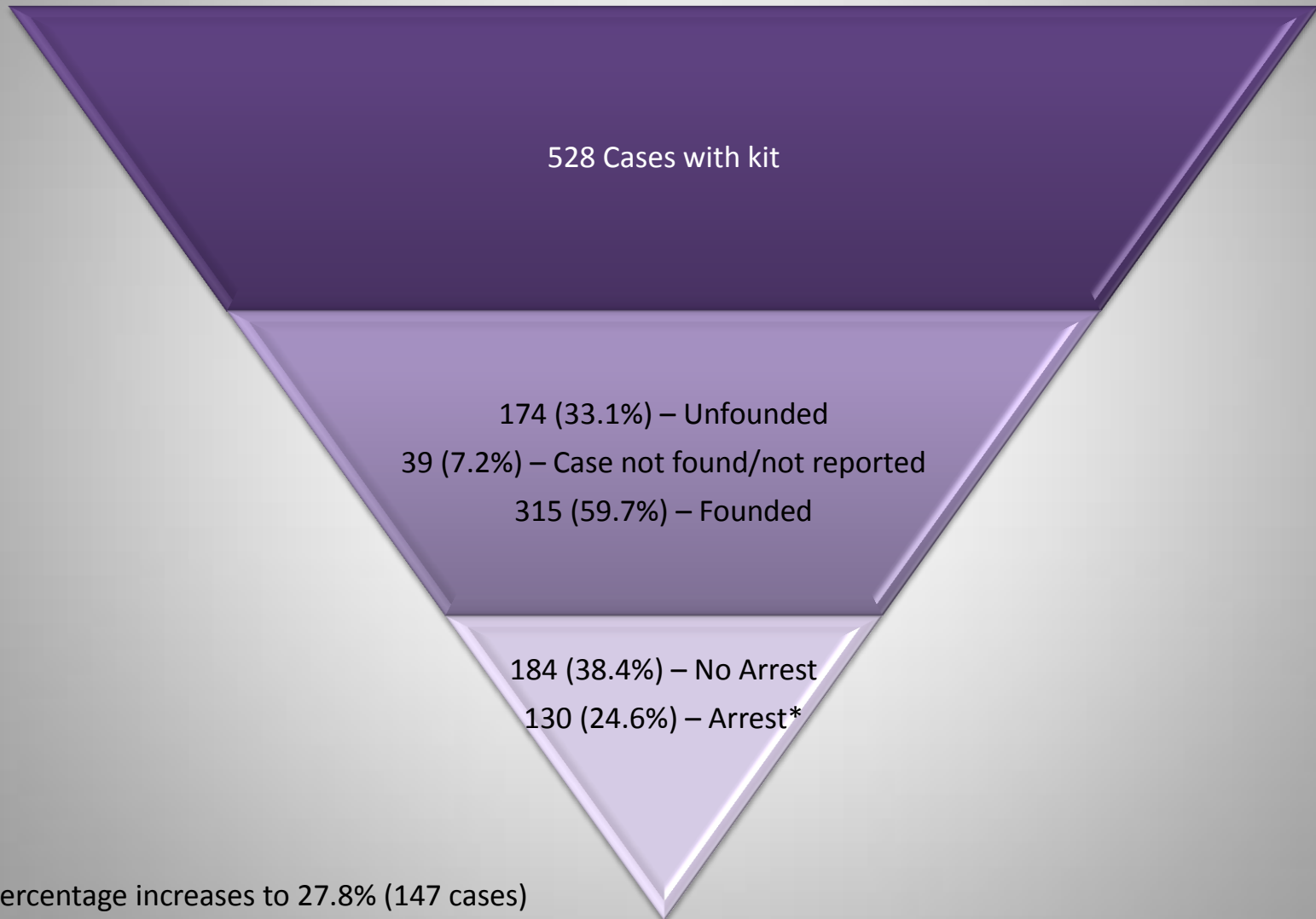
Sample Characteristics

Characteristic	%/Median
Victim Sex	95.9% Female
Victim Age	23
Victim Under 18	4.9%
Victim Race-Ethnicity	White 68.6% Hispanic 17.1% Black 9.1%
Victim-Assailant Relationship	Known assailant 68.2%

Examination, Laboratory and Police Outcomes

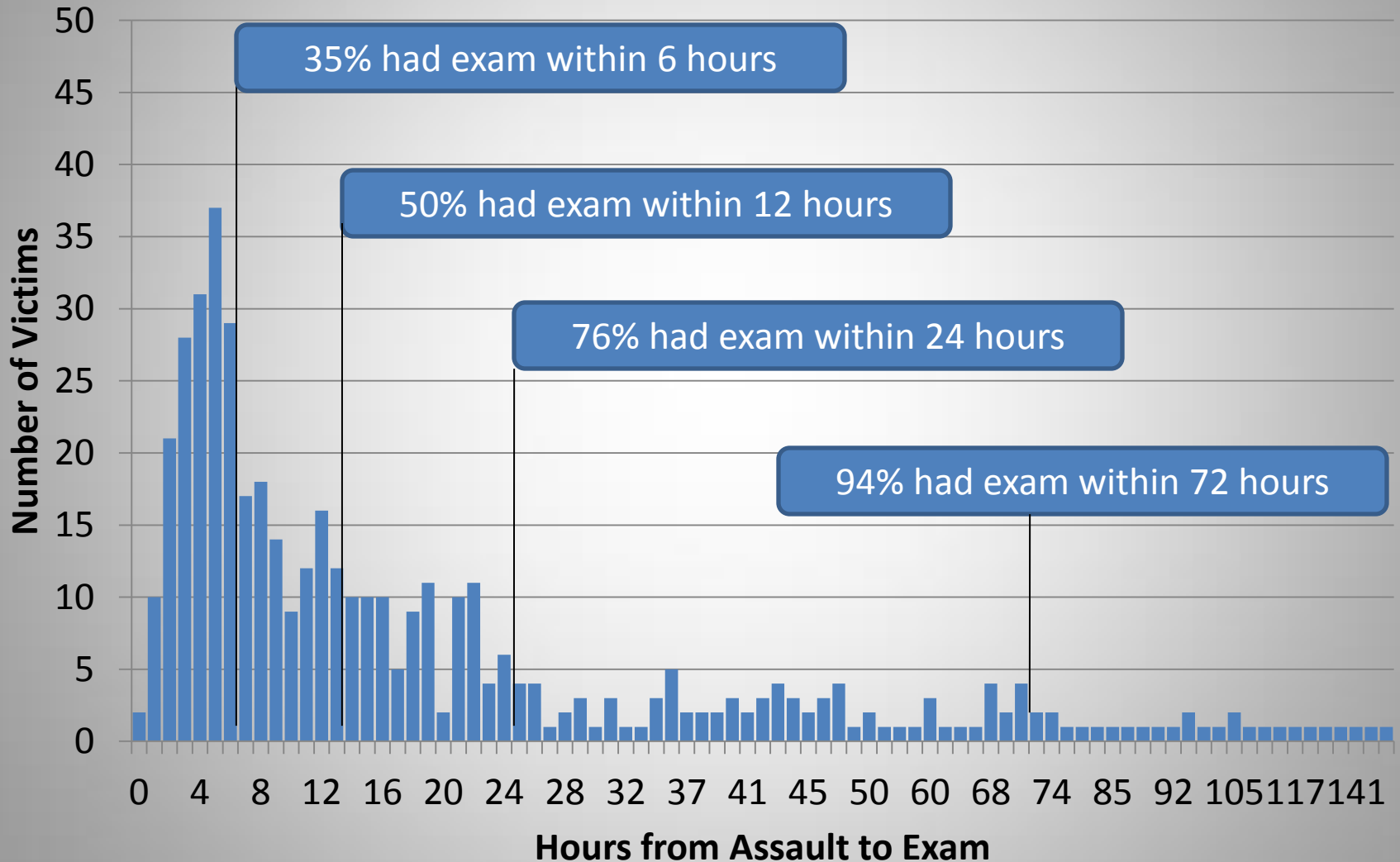
Result	%
Non-genital injuries	53.0%
Genital injuries	35.6%
Kits tested	77.6%
Biological evidence	84.2% of kits tested
DNA profile	28.3% of kits tested
DNA match to suspect	8.6% of kits tested
DNA match to CODIS-another case	2.0% of kits tested
DNA match to CODIS-convicted offender	4.7% of kits tested
Founding	64.6%
Arrest	42.2%

Case Attrition Rate

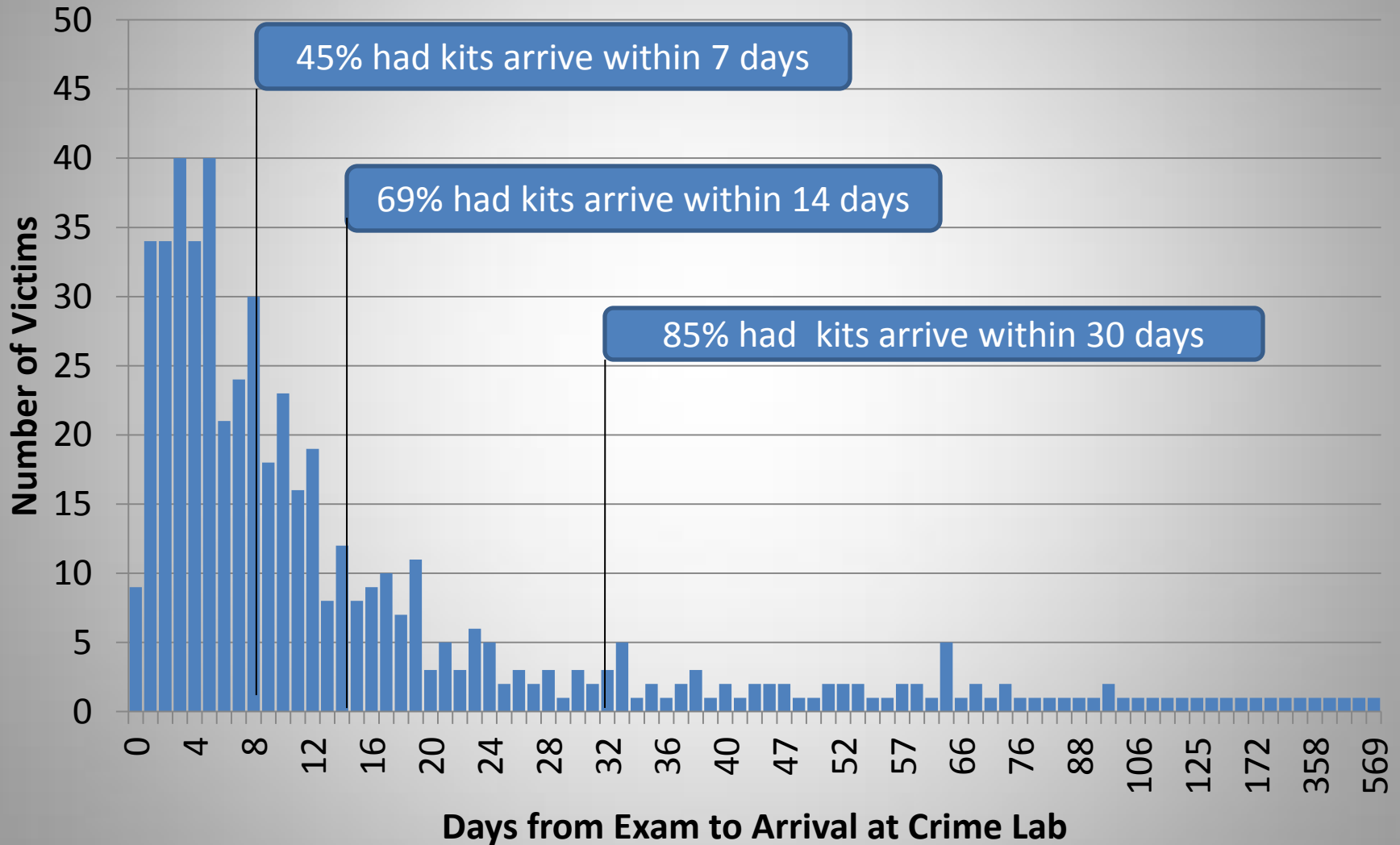


*Note: Percentage increases to 27.8% (147 cases) when including Summons.

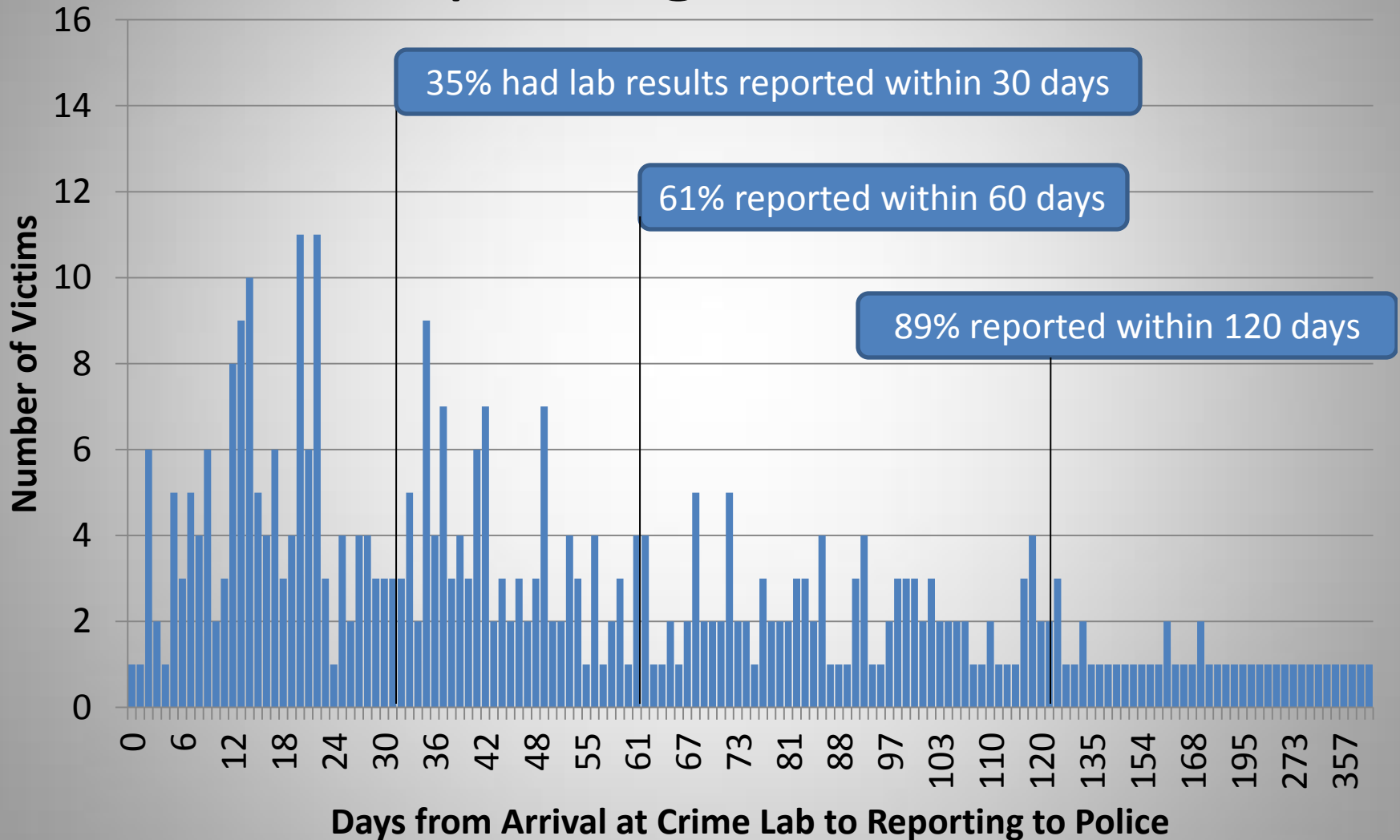
Timing of Evidence: Assault to Exam



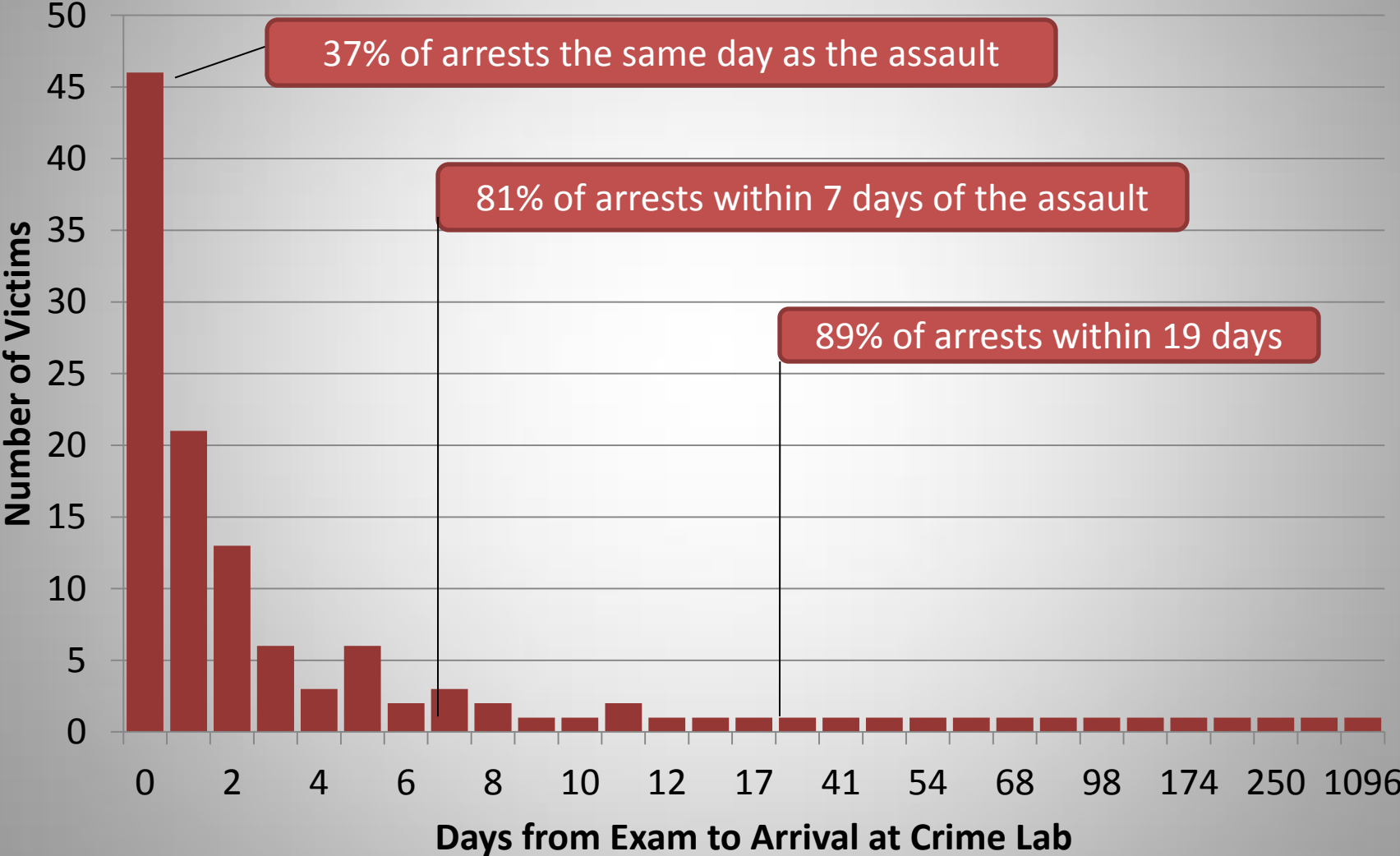
Timing of Evidence: Exam to Lab



Timing of Evidence: Lab to Reporting Results to Police



Time between Assault and Arrest

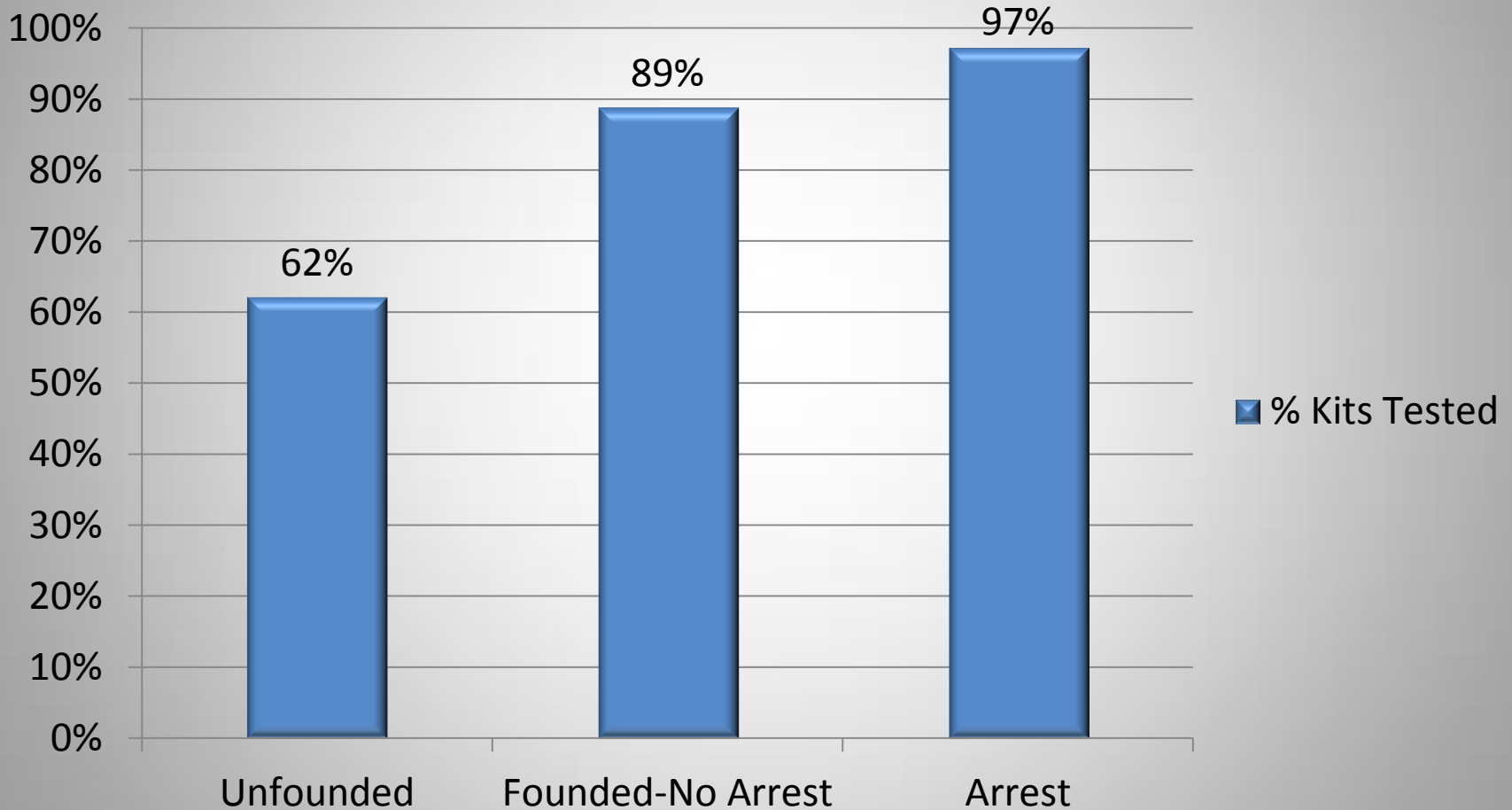


Timing of Arrest to Forensic Evidence



Based on median times.

Relationship of Founding and Arrest to Testing Kits



Preliminary Multivariate Findings

- Case Unfounding
 - Police officers were more likely to indicate a crime occurred if . . .
 - Penetration occurred ($p = .027$, OR = 1.77)
 - Physical force was used ($p = .040$, OR = 1.61)
- Arrest
 - Suspects were more likely to be arrested when . . .
 - The suspect was an acquaintance, date or relative as compared to a stranger ($p = .065$, OR = 2.00)
 - The suspect was an intimate/ex-intimate partner as compared to a stranger ($p = .002$, OR = 4.86)
 - Genital injuries were noted ($p = .045$, OR = 1.95)
 - Suspects were less likely to be arrested when . . .
 - The forensic medical exam occurred after 24 hours of the assault ($p = .011$, OR = .32)

Cases where Arrest Followed Forensic Results Reporting

- 8 cases had arrests following forensic result reporting to the police by the crime lab
 - 3 had arrests within 15 days of the report
- 3 cases had arrests within a day or two of the report
- These cases accounted for 2.1% of the final sample (N=528), 8.5% of arrests (n=130) and 37.5% of those arrests that took place more than 7 days after the assault (n=24)

Cases where Arrest Followed Forensic Results Reporting (n=11)

- 10 cases had biological evidence found
 - Body swabs typically were the source of biological evidence (7 of 11 cases)
 - 2 cases clothes contained biological evidence
 - 3 cases other evidence contained biological evidence (hair combings, condoms, fingernail scrapings)
- 9 cases had specimens that tested positive for semen
- 8 cases had a DNA profile generated—significantly more than other arrests
 - 5 cases the DNA profile was confirmed to match the suspect. 1 case the match results were pending.
 - 3 cases the DNA profile matched another case in CODIS
 - These involved 2 stranger cases and one acquaintance case
 - 2 cases the DNA profile matched a convicted offender in CODIS
- 2 cases involved an intimate partner; 3 involved someone known to the victim; 4 strangers; 2 unknown relationship.
 - The 2 intimate partner cases involved victims under 15 years of age

Summary

- Confirmation of case attrition early on in the process.
- Confirmation that forensic results rarely precede arrests (e.g., Johnson et al., 2012).
 - When forensic results do precede arrest, it does appear to be impactful.
- Case founding associated with characteristics of so-called “real” rapes: penetration and force.
- Arrests associated with known offenders, injuries, and timely reporting.
 - Police were more likely to make arrests in cases involving known suspects, but these cases are often more difficult to prosecute.
 - Injuries and timely reporting may reflect need for corroborating evidence and case legitimacy.