Sample Outreach Presentation to Medical Examiners

OR…

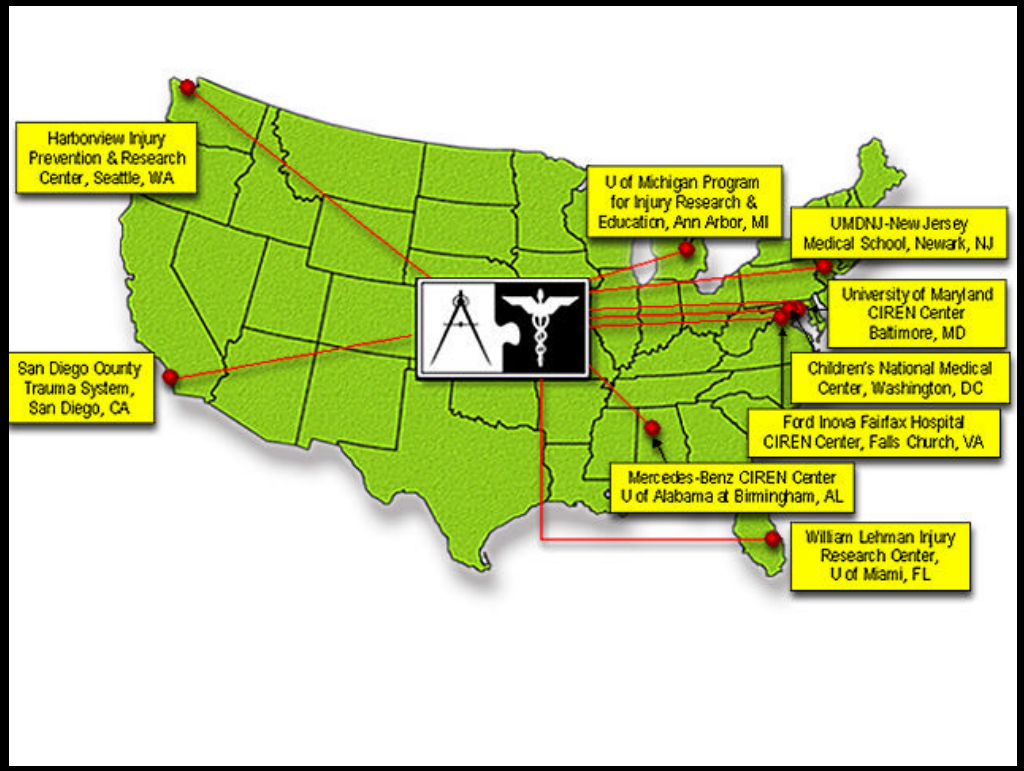
How You, Too, Can Study High-Lethality Injuries by Enlisting the Help of Your Local Medical Examiner!

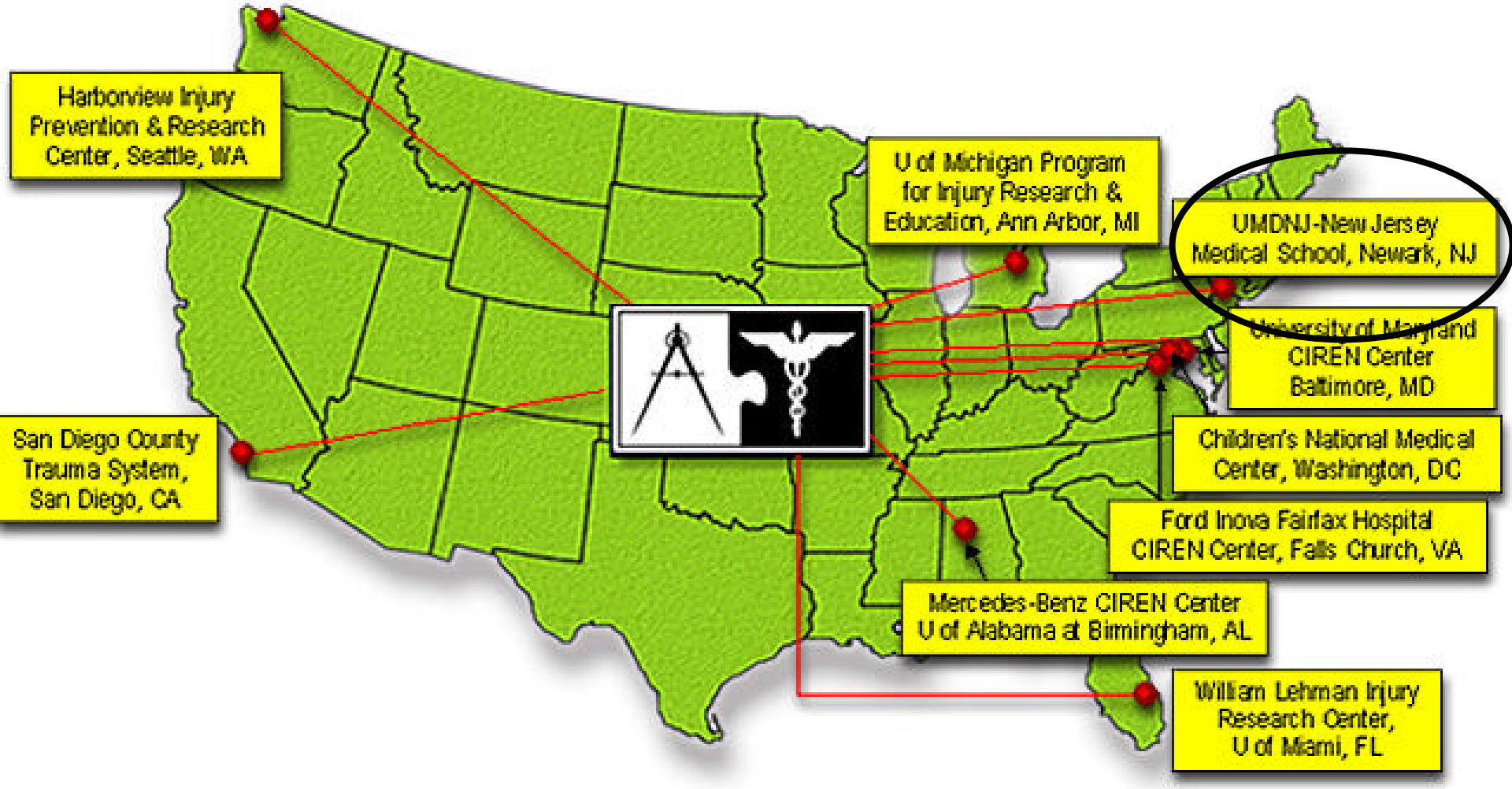
Organization and Function of the New Jersey CIREN Center

A Programmatic Orientation for Outreach to Medical Examiners

What Is CIREN?

Crash Injury Research and Engineering Network





http://www-nrd.nhtsa.dot.gov/include/bio_and_trauma/ciren-final.htm

CIREN

“is a multi-center research program involving a collaboration of clinicians and engineers in academia, industry, and government. Together, they are pursuing in-depth studies of crashes, injuries, and treatments to improve processes and outcomes. CIREN's mission is to improve the prevention, treatment, and rehabilitation of motor vehicle crash injuries to reduce deaths, disabilities, and human and economic costs.”

What Does CIREN Do?

- gather crash data and injury data from 9 different centers
- store data in a central repository
- analyze data for public good

History of CIREN

- New Jersey Medical School CIREN site began collecting data in 1991
- CIREN began in its present form in May 1996
- electronic data base began in August 1999 (based on the already existing NASS data system)

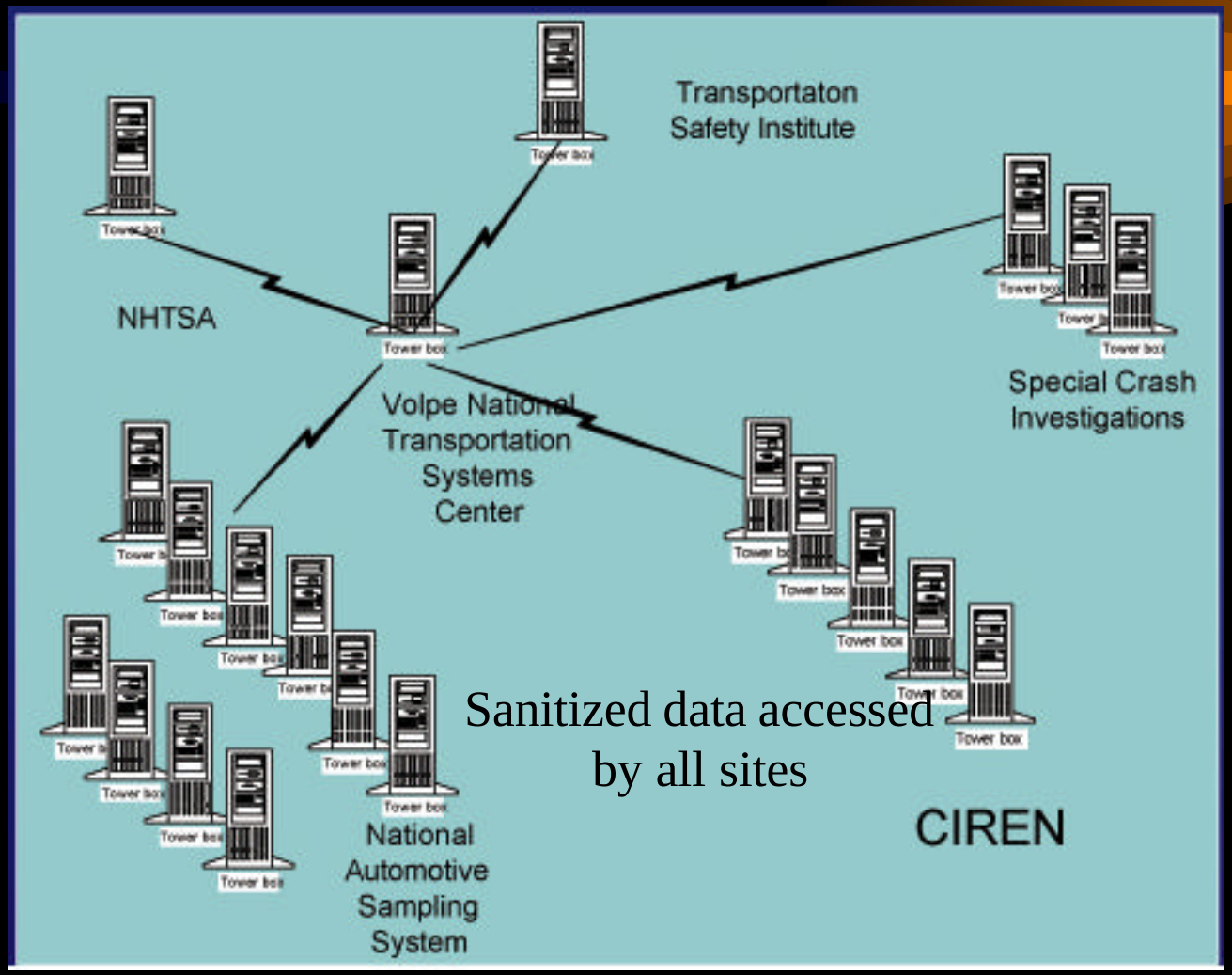
What Is NASS?

- National Automotive Sampling System
- http://www-nass.nhtsa.dot.gov/nass/

NASS

“In the NASS Crashworthiness Data System, a national representative sample of motor vehicle traffic crashes is selected for the collection of data in sufficient detail to support the Agency's standards development and evaluation programs. The NASS CDS collects data on approximately 5,000 motor vehicle traffic crashes annually, selected from police traffic crash reports at 24 sites.”

NASS/CIREN Wide Area Network



Sanitized data accessed by all sites

New Jersey CIREN Center at the New Jersey Medical School, Newark, NJ

Who We Are

UMDNJ
University of Medicine & Dentistry of New Jersey

New Jersey CIREN Center at the New Jersey Medical School, Newark, NJ

Principal Investigator:

John H. Siegel, MD, FACS

Wesley J. Howe Professor of Trauma Surgery

Chairman, Department of Anatomy, Cell Biology and Injury Science

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Project Coordinator:

Joyce A. Smith, M.S.

Clinical Research Associate:

Nadegda Tenenbaum, MD

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Crash Reconstruction: (ACA)

Frank Costanzo
Robert Freeth

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EMS Outreach Coordinator:

Laurie McCammon

Clinical Social Worker:

Ruth Ross, Ph.D.

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On-Site Computer Support:

Philip Marsh, M.S.

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Graduate Research Assistant:

Esther Leibovich, B.S.

Research Assistant:

Shabana Siddiqi, MD

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Clinical Research Associate (physician):

- identifies suitable cases from morning Trauma Conference and EMS page
- obtains informed consent of patient or next-of-kin using an IRB approved consent form
- informs EMS coordinator, project coordinator, social worker and PI
- examines patient, photographs injuries and reviews medical records
- summarizes and presents clinical data for case review by Principal Investigator

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EMS Outreach Coordinator:

- obtains police reports of the accident
- obtains EMS reports
- locates vehicle and makes arrangements to inspect it
- informs crash investigators of location and availability
- summarizes data regarding emergency care, use of restraints, and disposition of other vehicle occupants (if possible) for case review by Principal Investigator

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Clinical Social Worker:

- meets with patient and/or family to obtain standardized health survey information (“SF-36”)
- carries out a psychosocial interview to determine possible risk-taking behaviors that may have contributed to the crash
- summarizes findings to present to Principal Investigator at case review meeting
- follows up with the patient at three, six and twelve months to repeat the SF-36 survey

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Crash Investigator:

- inspects and photographs involved vehicle, and collects data according to strictly defined NASS guidelines
- photographs and analyzes accident scene
- prepares scene diagram
- presents accident analysis at case review meeting
- enters data into NASS automotive database

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Project Coordinator:

- reports to Principal Investigator and acts administratively in his absence
- coordinates data collection
- ensures that data is being entered into all databases
- ensures that data is properly sanitized
- analyzes in-house data
- prepares reports, graphs and presentations for Principal Investigator

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Principal Investigator:

- oversees entire project
- provides supervision to project coordinator and clinical research associate
- interacts directly with outside agencies and NHTSA
- presides over case review conference at which mechanisms for each injury are determined based on contact and intrusion
- supervises data transmitted to NASS/CIREN
- prepares manuscripts and reports
- collaborates with PIs of other CIREN centers

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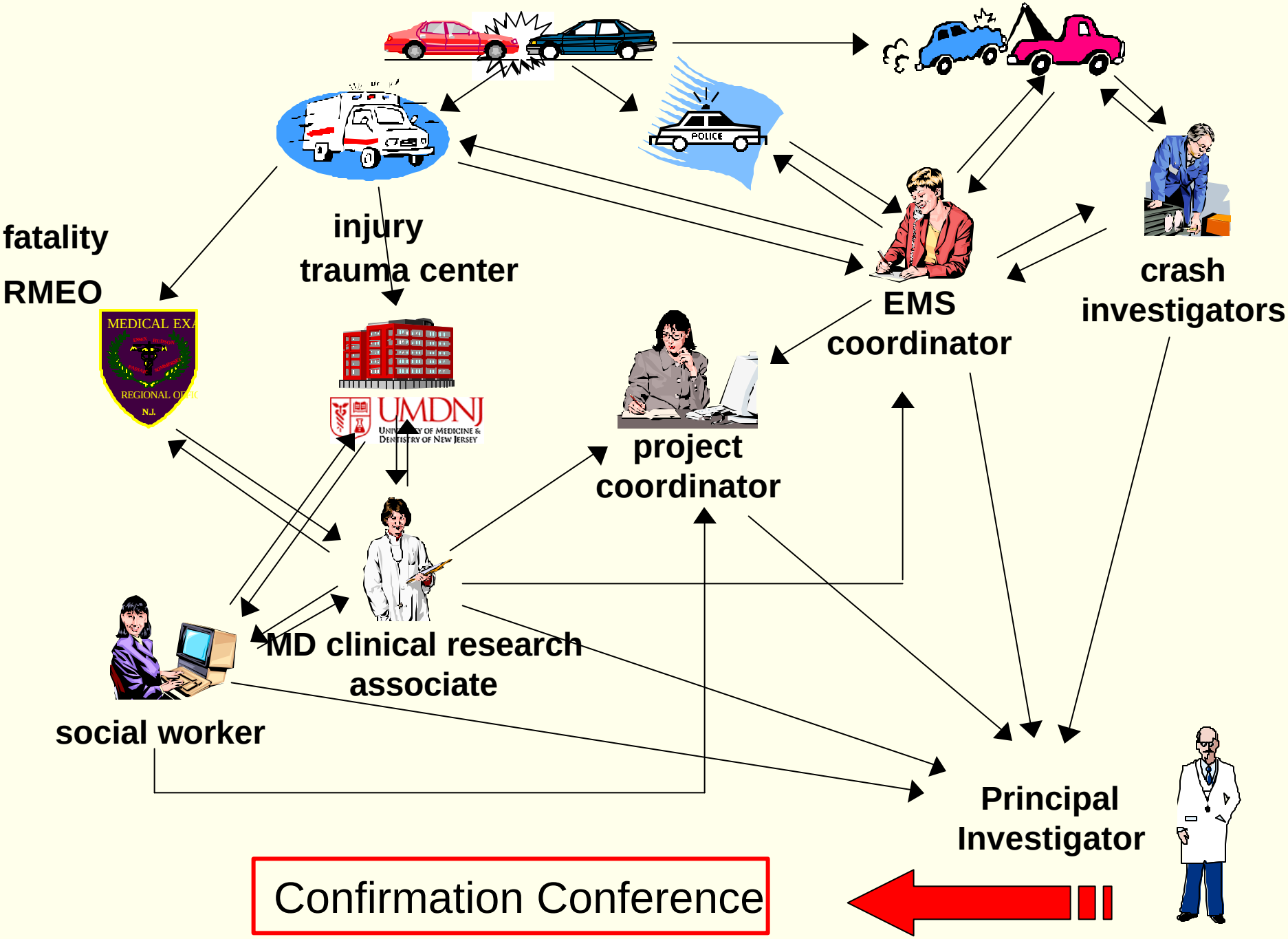

fatality
RMEO
injury
trauma center
POLICE
EMS
coordinator
crash
investigators
MEDICAL EXA
REGIONAL OFFIC
N.J.
UMDNJ
UNIVERSITY OF MEDICINE &
DENTISTRY OF NEW JERSEY
project
coordinator
MD clinical research
associate
social worker
Principal
Investigator
Confirmation Conference

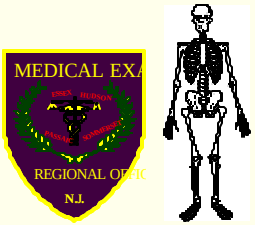
Confirmation Conference

MD clinical research associate

X-rays
lab results
clinical course
injury coding
injury photos
discharge summary

crash investigators

scene diagram
scene photos
vehicle photos
computer analysis
force/direction calculations



Regional Medical Examiner's Office

scene photos
autopsy photos
autopsy report

social worker

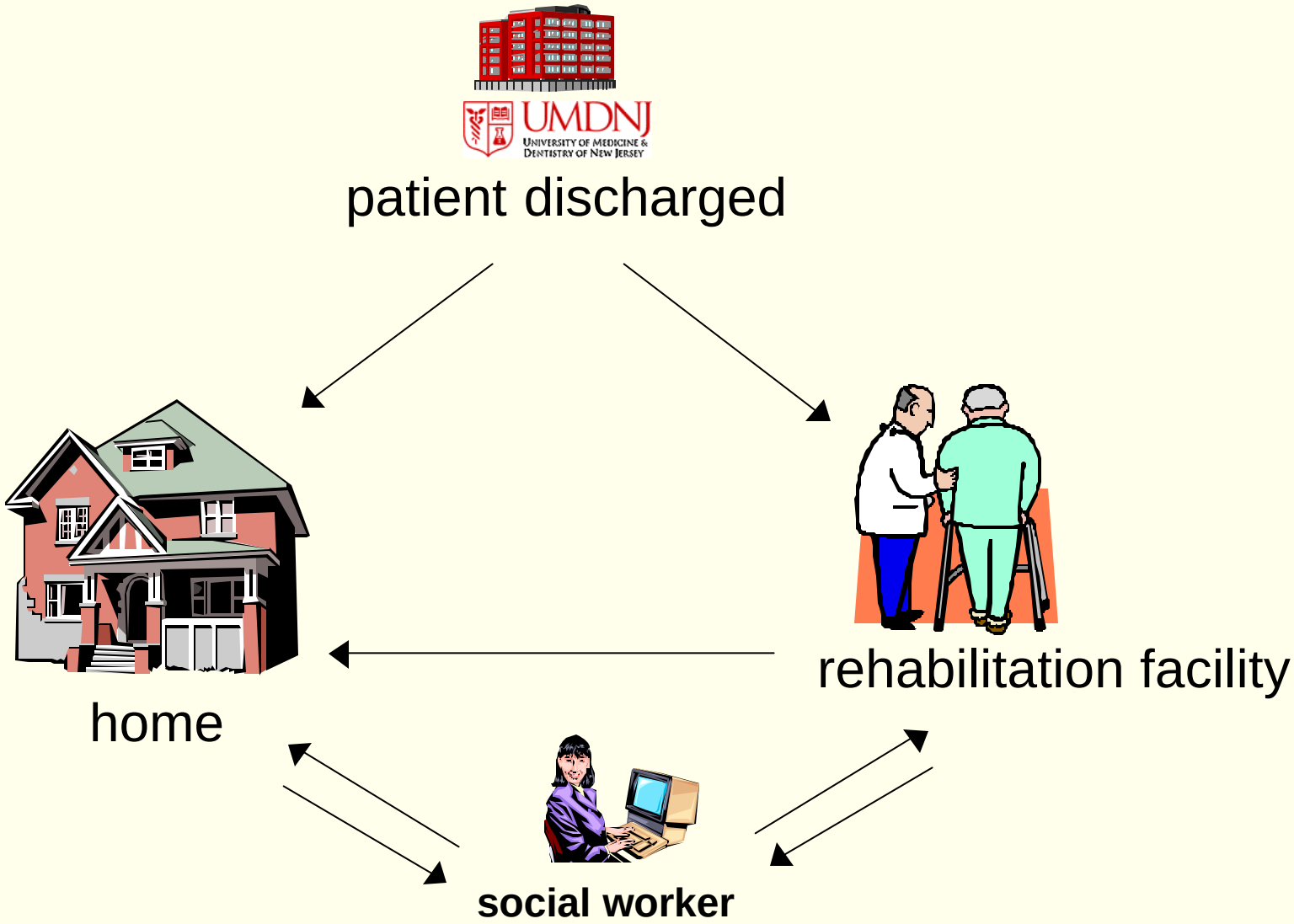
psychosocial evaluation
health questionnaire

EMS coordinator

police report
EMS report

Principal Investigator

- ✓ Resolves data discrepancies
- ✓ Confirms injury mechanism based on all data
- ✓ Finalizes report

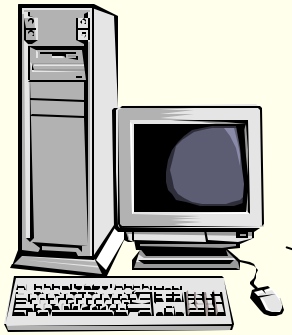


✓ health questionnaire follow-up at 3, 6 and 12 months

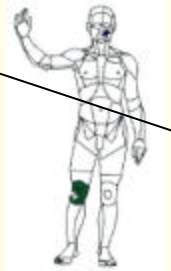
Confirmation Conference

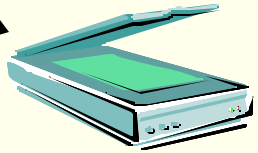
data finalized
and sanitized

in-house data base
MedGUI system



data entry

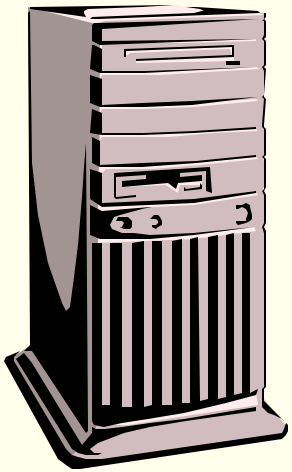




documents
scanned

data
analysis

all data



NHTSA/
CIREN
server

reports,
presentations,
papers

Regional Medical Examiner's Office – Essex, Hudson, Passaic and Somerset Counties, NJ

State Medical Examiner:
Faruk B. Presswalla, M.D.

Regional Medical Examiner's Office – Essex, Hudson, Passaic and Somerset Counties, NJ

Deputy State Medical Examiner:
Phito Pierre-Louis, M.D.

Regional Medical Examiner's Office – Essex, Hudson, Passaic and Somerset Counties, NJ

Assistant State Medical Examiner:
John Krolikowski, M.D.

Regional Medical Examiner's Office – Essex, Hudson, Passaic and Somerset Counties, NJ

Deputy Regional Medical Examiner:
Lyla Perez, M.D.

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Associate Medical Examiners:
Kenneth Hutchins, M.D.
J. Shaikh, M.D.

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Assistant Medical Examiner:
Wayne Williams, M.D.

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RMEO Administrator:
Joan Burriello

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Model Program is Aortic Injury:
In order to gain a full understanding of the spectrum of a disease process, we must include ALL cases, not just survivors.

Regional Medical Examiner's Office – Essex, Hudson, Passaic and Somerset Counties, NJ

The office of the Regional Medical Examiner covers the counties of Essex, Hudson, Passaic and Somerset in New Jersey, and accounts for 65% of the Medical Examiner cases in New Jersey.

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The office of the Regional Medical Examiner is mandated by New Jersey State law to investigate every traffic fatality.

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This gives us an accurate measure of the incidence of aortic injury in motor vehicle crashes in the four-county area.

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When a case is received by the office of the RMEO that meets our criteria, they notify us immediately.

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CRITERIA for our collaborative study:

- adult patient
- driver or front seat passenger
- automobile, SUV or pickup truck
- no ejection, rollover or rear end collisions
- with one or more thoracic aortic lacerations found at autopsy

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When the data is all received, the Medical Examiner who performed the autopsy attends our case review conference to present his or her findings.

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The RMEO presentation will include photographs of the scene *with the victim still in place* if the victim was dead at the scene.

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The RMEO presentation will also include photographs of the scene *with the vehicles unmoved from their final resting position.*

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The RMEO presentation of autopsy findings will show injuries that may not have been apparent in a surviving victim such as fractured ribs, intrathoracic hemorrhage or details of brain injury.

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Confidentiality of all Medical Examiner's Office data is protected by sanitizing data of all identifiers before being entered into the database.

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Confidentiality is further protected through a Certificate of Confidentiality issued by the Secretary of the Department of Health and Human Services covering the entire CIREN study.

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In return for the cooperation of the RMEO, we present our findings in seminar format to the Medical Examiner's office once a year.

A Sample Medical Examiner Case Review

Right lateral motor vehicle crash

V1 = 1996 Plymouth Neon 4 door sedan (1096 kg), attempting to make left turn on green. This vehicle DID meet the 1997 side protection standards.

V2 = 2000 Mercedes-Benz ML430 SUV (2714 kg), passed through intersection on red traffic signal

Case Occupant

- 51 year old white female restrained front seat passenger
- Weight = 67 kg (148 lbs)
- Height = 168 cm (5’ 6”)

Crash Scene

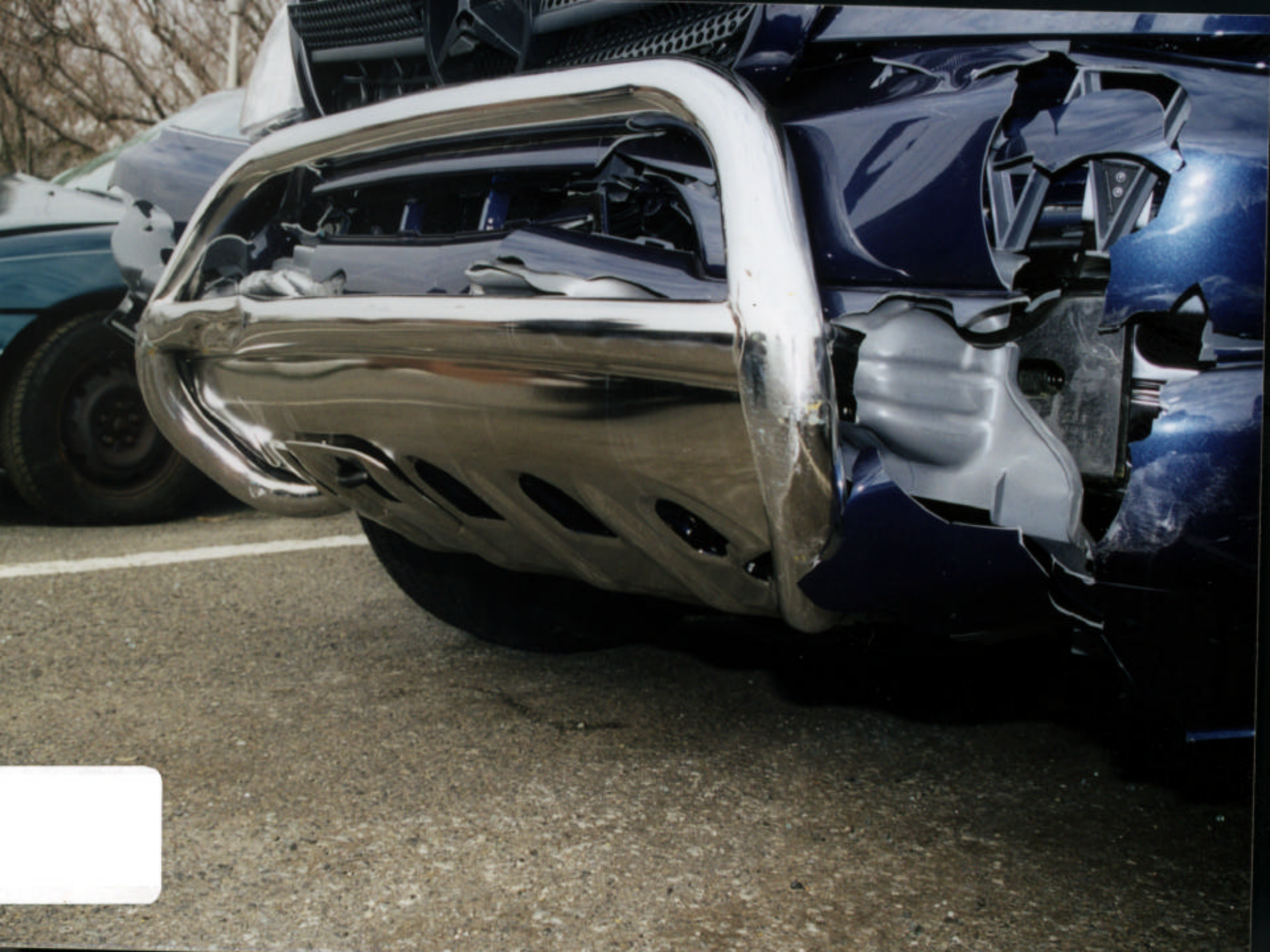
- 4-lane urban intersection controlled by a lighted traffic signal
- 2 left lanes marked for left turn in both directions
- Speed limit = 80 km/h (50 mph)
- Roadway – dry, free of defects
- Coefficient of friction – 0.75
- Curbs were covered by snow

Vehicle 1 - 1996 Plymouth Neon
Vehicle 2 - 2000 Mercedes ML430

LEFT
TURN
SIGNAL

Reconstruction Data

- Right lateral collision
- CDC = 02RYEW4
- PDOF = 060 degrees
- Delta V = 58.8 kph (36.6 mph)
- Max Crush = 61 cm (24.4 in.) at C2
- Estimated speed V1 = 19 kph (12 mph)
- Estimated speed V2 = 80 kph (50 mph)



Injury list

INJURY	SOURCE	INTRUSION
Unconsciousness at scene	B-pillar	34 cm (13.6 in)
Right parietal scalp abrasion	B-pillar	34 cm (13.6 in)
Right subgaleal hemorrhage	B-pillar	34 cm (13.6 in)
Right forehead, eyelid abrasions	B-pillar	34 cm (13.6 in)
Bilateral posterior rib fractures (Right II-IX; Left V, VI)	Right door panel	39 cm (15.4 in)
Bilateral hemothoraces (3500cc)	Right door panel	39 cm (15.4 in)
Posterior thoracic aorta laceration (4cm distal to the ostium of LSA)	Right door panel	39 cm (15.4 in)

Injury list

INJURY	SOURCE	INTRUSION
Bilateral diaphragmatic laceration at the crura and T-spine junction	Right door panel	39 cm (15.4 in)
Three linear liver lacerations (Grade II)	Right door panel	39 cm (15.4 in)
Spleen laceration (Grade I)	Center console	None
Bladder mucosal laceration	Right door panel	39 cm (15.4 in)
Right knee abrasion	Lower door panel	32 cm (12.6 in)
Left pubic rami fracture	Center console	None
Right sacroiliac joint fracture dislocation	Right door panel	39 cm (15.4 in)

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In this collaborative effort, there are benefits to both the Regional Medical Examiner's Office and the CIREN Program.

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The RMEO benefits by obtaining the exact mechanism and a quantification of the forces producing the injuries which they have found at postmortem examination.

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The RMEO also benefits by having positive national exposure in professional journals as well as to the CIREN program team members.

Regional Medical Examiner's Office – Essex, Hudson, Passaic and Somerset Counties, NJ

Our CIREN center benefits by gathering data that is unavailable otherwise through highly focused postmortem examinations. In this particular investigation, it allows us to obtain a complete spectrum of the disease process.

A Programmatic Orientation for Outreach to Medical Examiners

Thank you for your attention. We hope this presentation will be helpful to you!