

Public Health Surveillance and Research in an Emergency Response Setting

Gulf of Mexico Oil Spill
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Assessing and reducing health impacts: information needs

- **Exposures:** (physical, chemical, and psychosocial), populations and vulnerabilities.
- **Control measures:** (e.g. training, PPE, public messages) reach, effectiveness
- **Services:** needs, reach and utilization
- **Acute injury and illness:** potentially attributable to the spill or response
- **Exposure- dose-response relationships** for acute and chronic effects
- Surveillance and research are relevant to each need, but the emphasis varies

Public health surveillance data sources and methods

- **“Syndromic surveillance”**
- **Surveys**
- **Registries, cohorts, panels**
- **Worker medical surveillance**
- **Others:**
 - Provider reporting – mandatory, voluntary, active, passive
 - Laboratory reporting
 - Vital records
 - Sentinel providers or labs
 - Administrative data systems
 - Others

Adapted from <http://www.cdc.gov/ncphi/diss/nndss/phs/overview.htm>

Syndromic surveillance

- Tracking of non-diagnostic health indicators, e.g. ED chief complaints, help-line calls usually near-real-time
- NYC ED surveillance initiated September 13, 2001 as on-site manual system, automated in following months
- Improved over time, adaptable: e.g.:2003 blackout-associated diarrheal illness, heat illness, asthma
- Major role in tracking H1N1
- Limitations: Lacks exposure info and clinical detail. Geographic coverage depends on data sources.

Surveys: phone, in field, electronic

- Mental health impact and service needs post 9/11 - phone 1st wave 5-8 weeks post 9/11
- PPE use among FDNY WTC responders
- School outbreak of H1N1 – first online survey 3 days after outbreak reported
- Estimates: general or target populations
- Rapid implementation possible
- Limitations: self-report, cross-sectional

Worker medical surveillance

- The World Trade Center Medical Monitoring and Treatment Program – NIOSH funded.
<http://www.wtcexams.org/>
 - Responders receive standardized examinations
 - > 20,000 initial exams between 2002-7
- Documented high rates of persistent respiratory, mental health and other conditions
 - Treatment for specified covered conditions
- Limitations: Limited data on exposures and universe of those eligible (Savitz et al. 2008)
- FDNY WTC responder follow-up: well defined population, pre-event and periodic follow-up examinations

World Trade Center Health Registry

- Voluntary enrollment: residents, employees, students, passers-by, and R/R workers. From lists of potentially exposed and self-identified.
- Enrolled > 70,000 in 2003-4. Estimated 400,000+ eligible.
- Documented persistent respiratory illness and mental health problems.
- Features: Periodic follow-up, allows record linkage, and multiple nested studies by outside researchers through a managed process, link to services
- Advisory boards: Community, labor, science
- Limitations: Limited data on exposures and baseline health. May not be representative of all eligible.

<http://www.nyc.gov/html/doh/wtc/html/registry/registry.shtml>)

Suggestions

- A flexible, multi-layered, coordinated approach
- Use to inform worker and public health and safety measures
- Worker health surveillance – initiate prior to deployment, ensure independence
- Surveys may help estimate and identify exposed populations, track some population impacts, and inform recruitment for registries if appropriate.
- Registries and follow-up? Need to identify or estimate universe of eligibles (e.g. rostering of workers), baseline health, exposure, and covariates for those enrolled.
- Explore enhancements of syndromic surveillance: e.g. data sources, coverage, and syndrome coding
- Coordinate, provide resources
- Set priorities: “Is the juice worth the squeeze?”

Thank you

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Investigation modes

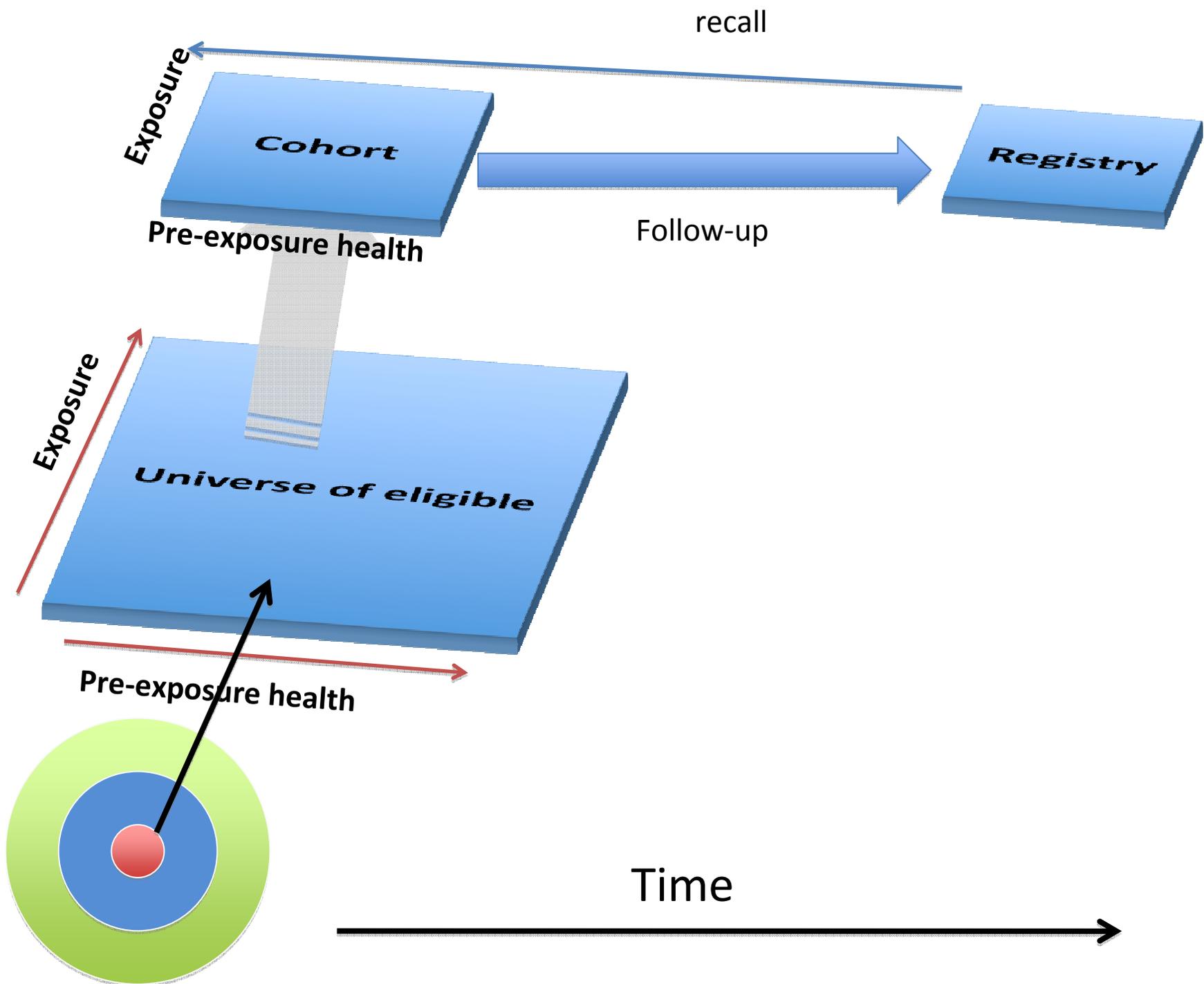
- **Public health surveillance:** “Ongoing, systematic collection, analysis, and interpretation of health-related data ... [and] timely dissemination ... to those responsible for prevention and control.” [including workers and the public]

(<http://www.cdc.gov/ncphi/diss/nndss/phs/overview.htm>)

- **Workplace medical surveillance:** “the analysis of health information to look for problems that ... that require targeted prevention”

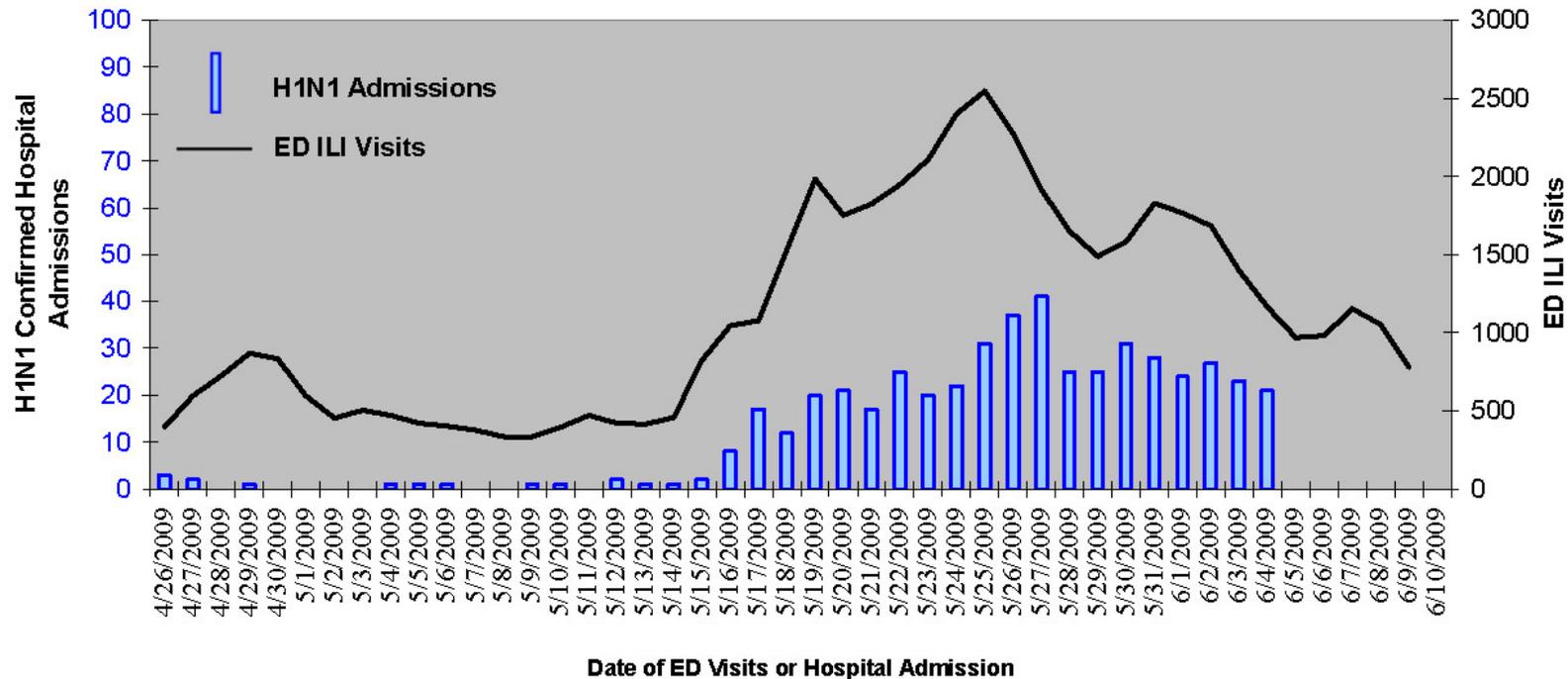
(<http://www.osha.gov/SLTC/medicalsurveillance/surveillance.html>)

- **Research:** “a systematic investigation....designed to develop or contribute to *generalizable* knowledge.” (45 CFR 46)
- The lines between these are often blurry



Syndromic Surveillance

Laboratory Confirmed H1N1 Hospital Admissions and Emergency Department (ED) Visits for Influenza-like Illness (ILI) in NYC
April 26 - June 10, 2009



<http://www.nyc.gov/html/doh/html/pr2009/pr042-09.shtml>