

System Issues: Lessons from SARS in Toronto

Allison McGeer, MSc, MD, FRCPC
Mount Sinai Hospital
University of Toronto

National coordination

- Funding/resources for public health /prevention are strikingly inadequate
- Federal powers and responsibilities are limited, but Canadians see public health threats as a national problem
- We haven't yet achieved an optimal working relationship between public health and healthcare

Canada

UK

International considerations

-

Incidence/severity

Present burden ill health

General population impact

Socioeconomic impact

Socioeconomic burden

Socioeconomic impact

Preventability

Health gain opportunity

Potential to drive policy

-

Risk perception

Public concern

Changing patterns

Potential threat

-

PHLS "added value"

Canada, 1998

3 influenza

5 tuberculosis

15 inv *S. pneumoniae*

18 inv *H. influenzae*

23 gonorrhoea

24 invasive GAS

35 Campylobacteriosis

UK, 1997

2 antibiotic resistance

4 nosocomial infections

5 tuberculosis

8 MRSA

9 salmonellosis

12 campylobacteriosis

14 *C. difficile*

Surveillance Questions

- *Approximately, how many people are becoming infected, experiencing illness, seeking medical care, being hospitalized, requiring intensive care, and dying from 2009-H1N1?*
- *How are these numbers changing over time?*
- *Who is becoming infected and who is at greatest risk of severe outcomes (i.e., hospitalization, ICU admission, death)?*
- *How is the virus changing?*
- *Are the medical and public health systems able to respond adequately?*
- *How well do medical and public health responses work?*

Surveillance Limitations

- Some key data are not updated continuously.
- Current systems are geographically limited.
- Current systems do not provide reliable estimates of influenza morbidity and mortality.
- No systematic approach yet exists to monitor the capacity of the health care system to respond.
- Laboratory capacity to confirm diagnosis and isolate viruses for further characterization is limited.
- Current systems cannot monitor the burden of mild illness that does not come to medical attention.
- Current systems for reporting and analyzing adverse events associated with vaccination may not be well suited to challenges likely to arise during a vaccination campaign for 2009-H1N1.

Surveillance

- **We recommend that DHHS take rapid advantage of available opportunities to upgrade national surveillance systems to improve decision making during the fall resurgence. The critical surveillance information for decision making includes data on influenza-like symptoms in the population, emergency room admissions, health system utilization, hospitalized patients, and adverse events.**

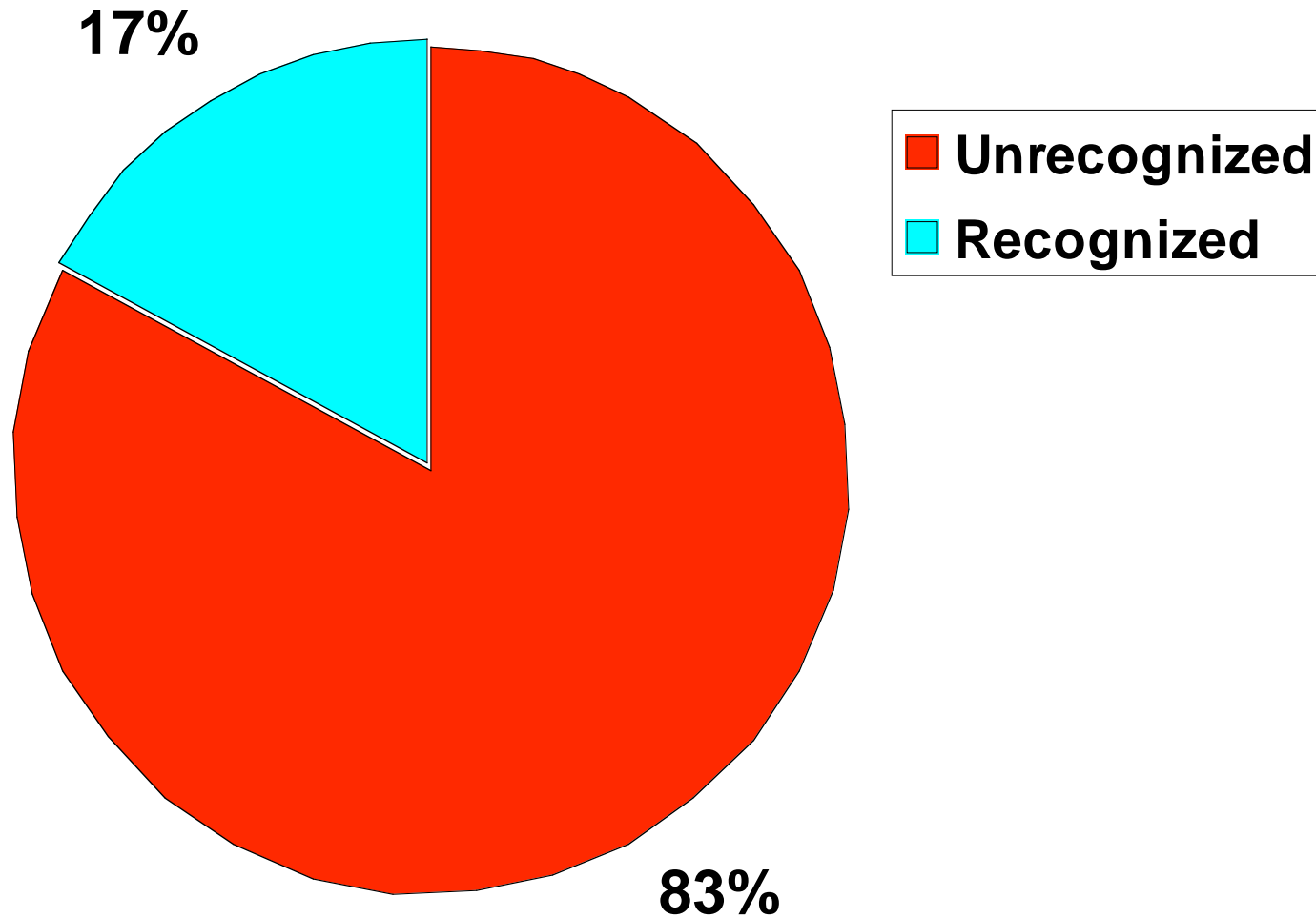
Recognizing and protecting the vulnerable



Lessons

- Biggest risk is unrecognized disease

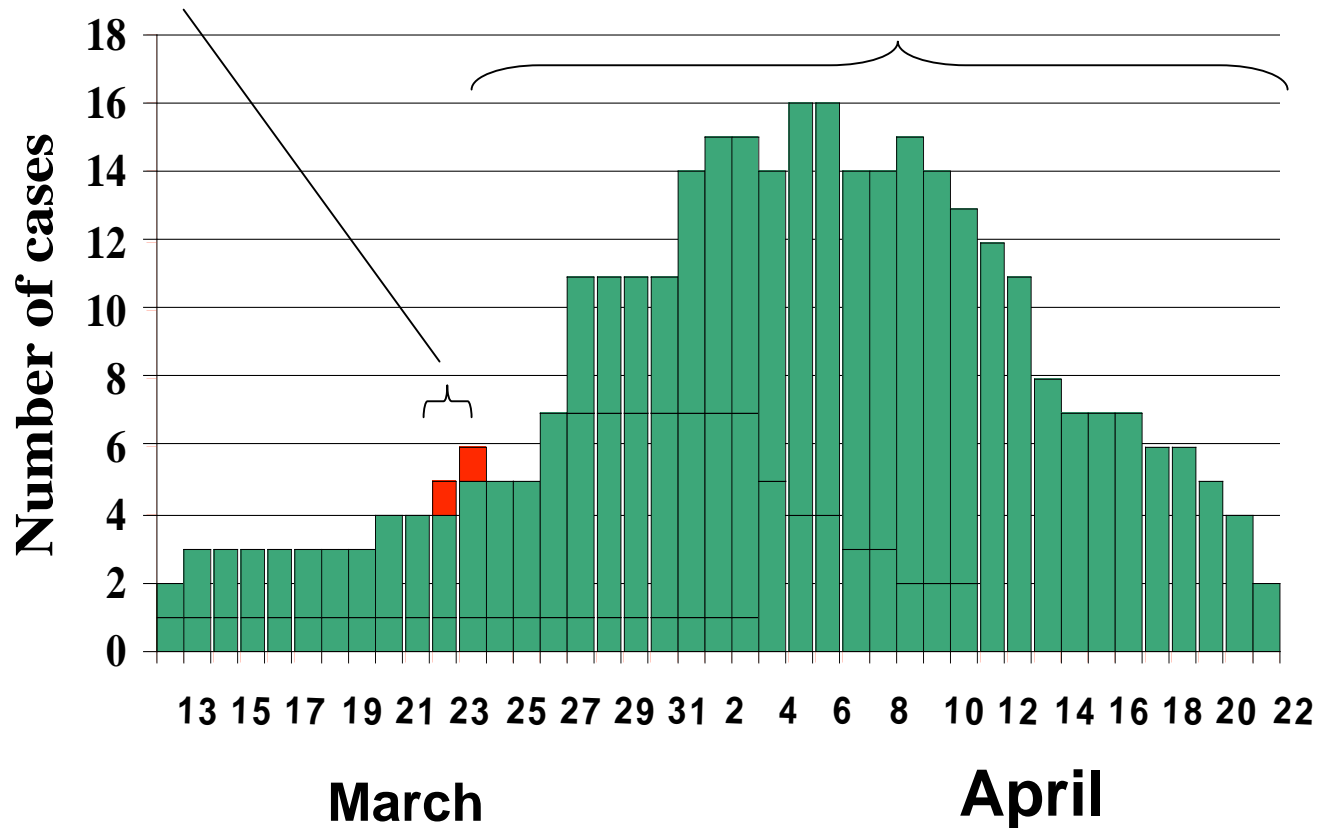
HCW – source of infection



Number of SARs hospitalization days Mount Sinai Hospital

31 hours of unprotected exposure
(7 staff infected)

338 days of protected exposure

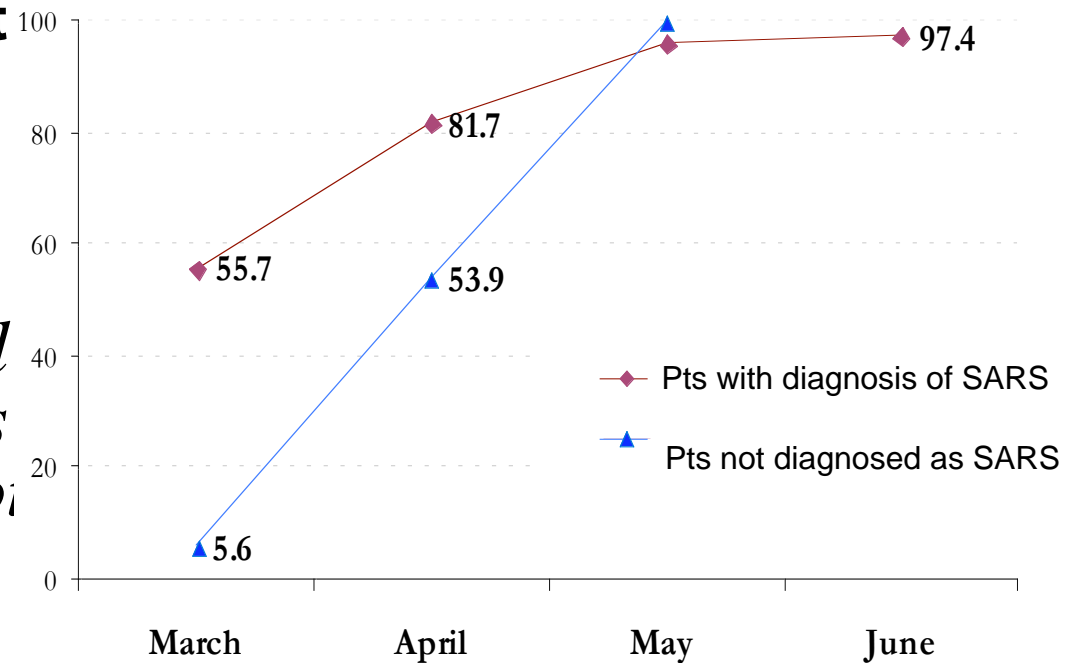


Communication

- Communication is everything
- Communication in settings of uncertainty is an even greater challenge

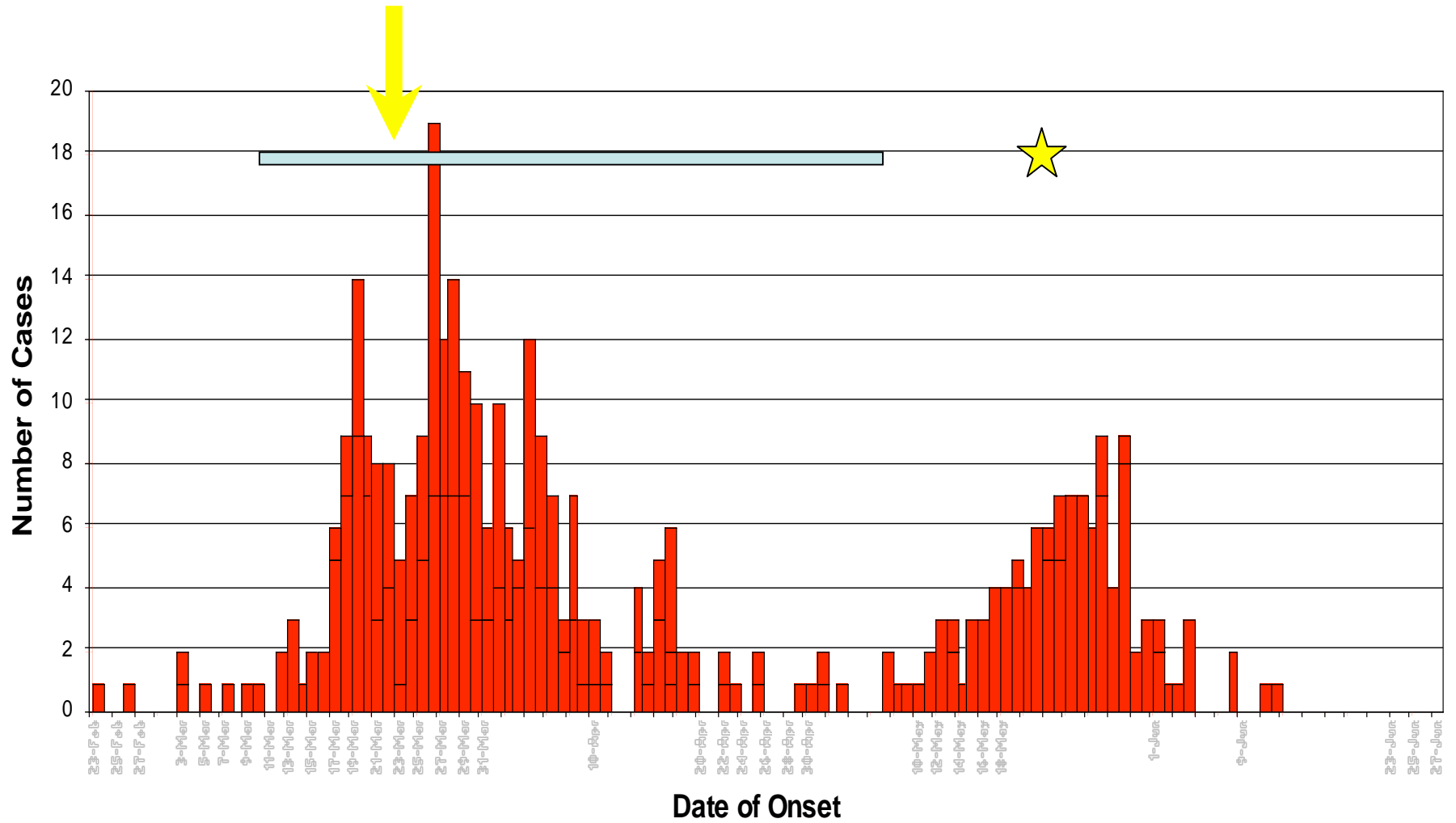
Adherence to PPE over time

- 6 weeks into the SARS outbreak, HCWs were still not making sufficiently conservative decisions about using PPE
- *60% of quarantined health care workers in Toronto could not accurately identify why they were quarantined*



Learning in Outbreaks

SARS in Ontario



Why no information in SARS?

- Questions not clear
- Case definition non-specific, and changed over time
- Laboratory capacity inadequate
- Staff otherwise occupied
- Agency/individual in-fighting persisted
- Limited time to achieve consensus
- Ethics review capacity
- Safety issues for clinical trials staff
- No funding mechanism

Solutions

- Setting questions/establishing design
 - broad-based discussion about priority study questions
 - Defined process for decisions (and for start/stop of trials)
- Diagnostic availability (including serology)

Solutions - Logistics

- Open discussion about prioritization
- Systematization (where possible) data recording for patients
- Plans for back-up, and safety
- Pandemic ethics review process
- Emergency funding process