Los Angeles County
Department of Health Services
Public Health

Acute Communicable Disease Control Program
Bioterrorism Preparedness and Response Unit

SARS
Tabletop Exercise

Wednesday, December 3, 2003
7:30 am – 5:00 pm

Table of Contents

Agenda

Time	Public Health	Media	
7:30- 8:00	Arrival		
8-8:15	Welcome and introductions		
8:15-9:00	First Interject		
9:00-10:00	Second Interject	9:15-9:30	Arrival
		9:30-9:45	Welcome and Introductions
		9:45-10:00	Media Interject 1 (equivalent info for PH interject 1 and 2)
10:00-10:30	First Mock press conference (break for other exercise participants)		
10:30-11:00	Interject 3	10:30-11:00	Discussion of press conference, media role, needs
11:00-11:30	Press conference 2 (real conference) on exercise (break for other participants)		
		11:30-12:00	(optional) wrap-up with facilitator
11:30-12:00	Interject 3 continued		
12-1	Lunch		
1-1:45	Interject 4		
1:45-2:15	Epilogue		
2:15-2:30	Break		
2:30-3:30	Further discussion of issues from interjects		
3:30-4:30	Lessons learned from drills, weak areas, Action plan		
4:15-5:00	Resume into large group, small groups present issues		

Interject 1
Day 26 10am

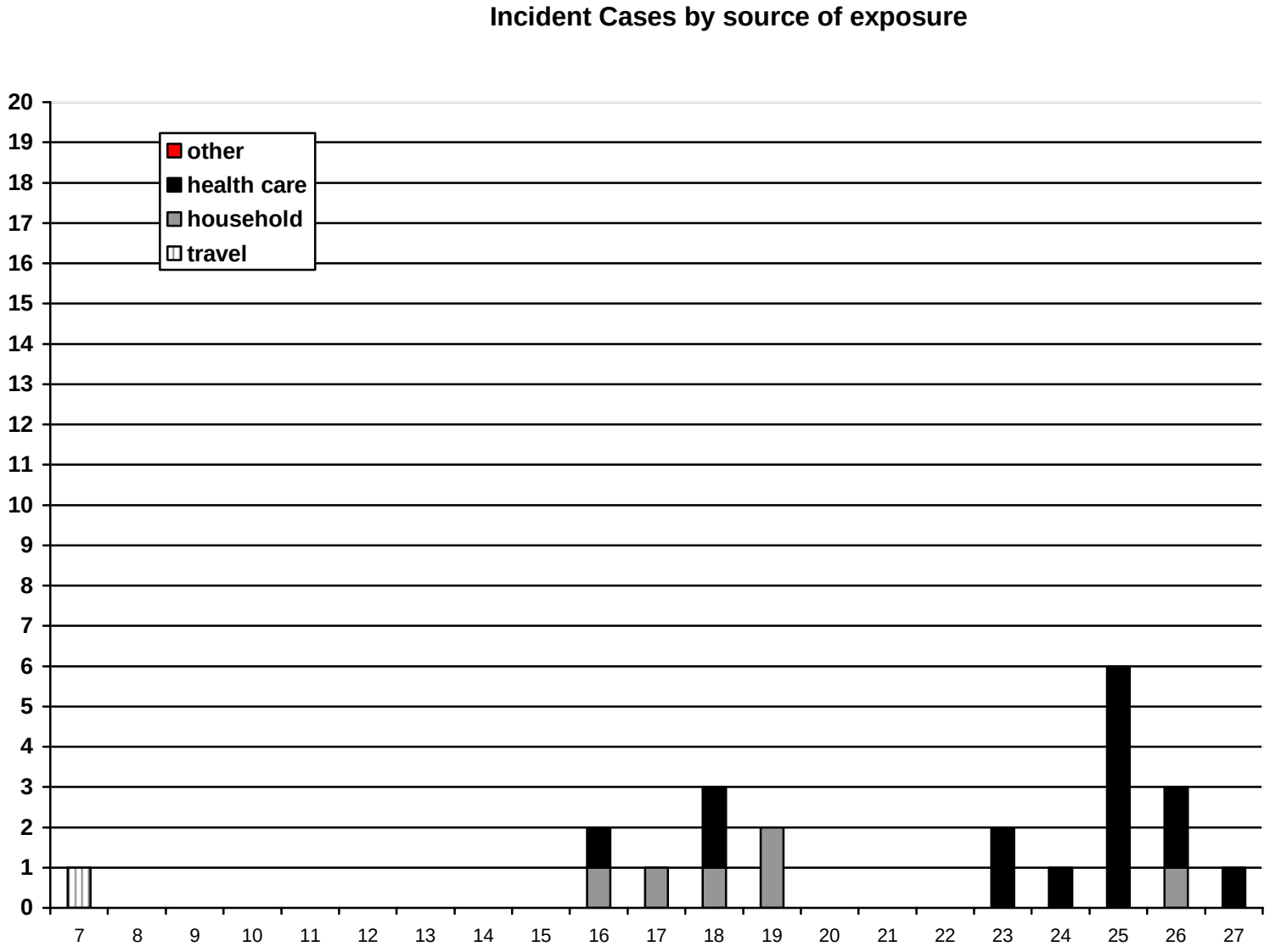
- Public Health receives a call at 10 AM from an alert ID clinician at XXXX Hospital with concerns about a possible SARS patient.
- He describes an elderly woman, Mrs K, who16 days ago developed a fever, then developed a cough 2 weeks ago. She visited the ED 5 days ago, and her cough was thought to be due to emphysema and chronic bronchitis. 3 days ago she returned to the ED via EMS, and was admitted after a long delay to the floor. Early in the AM, she decompensated on the floor and required transfer to the ICU and intubation. She was treated with nebulizers aggressively and had a difficult intubation, Post intubation she required frequent suctioning by respiratory therapists and ICU RNs. The pulmonary MD, noting the bilateral pneumonia on chest x-ray, lack of response to standard therapy, unexpectedly low WBC, and negative routine cultures, ordered an ID consult. The ID attending met with her son and daughter-in-law, (who describe also having had a fever and severe cough over the last 2 weeks) and the attending became suspicious for SARS. He put the patient in respiratory isolation.
- Mrs K has illness clinically compatible with SARS including pneumonia on chest x-ray, low WBC, high CPK and LDH, ARDS, and all other bacterial and viral cultures are negative
- Other household members ill with respiratory symptoms and fever include:
    1. Son
    2. Daughter-in-law
    3. 6 yo granddaughter
    4. 18 yo granddaughter
    5. ill relative recovering from a bad cough visiting from Russia - (who works as an LPN in a Moscow hospital)

Interject 2
Day 27

- There are brief, confidential reports from WHO, CDC about other suspect clusters in Moscow, NYC, and Chicago
- A preliminary investigation reveals further information about Mrs K
    - She was seen in Hospital XXX ED on day 19, treated with aggressive nebulizers, and discharged to home. She returned to the ED via EMS on day 24, and was admitted to the ward after nearly 24 hours in the ED (due to a bed shortage) and was treated with aggressive nebulizers during that time in both the ED and the ward.
- Of the 10 staff members that had definite direct contact with Mrs K in the ED on day 19
    - The ED was full on the 19th, Mrs K was in a room separated only by a curtain and received many nebulizer treatments there.
    - The ED log is being photocopied to determine who else was there at the time, but there were at least 100 patients that day (she was there for 6 hours), 25 staff and an unknown number of visitors.
    - A resident MD currently has fever and cough, yet has continued to work. When evaluated, he looks ill on exam, and has a lobar pneumonia on chest x-ray and a low WBC. He is sent home on isolation. He has a wife and one-year-old son at home whom have already been exposed to him while ill.
    - A PCT who cared for Mrs K called in sick on day 23. She is called at home, and reports she has fever and cough.
    - A radiology technician has called in sick with fever and headaches, on the morning of the 27th. She has developed mild shortness of breath and cough.
    - An ED RN has been working despite low grade fever and malaise, and is sent home on isolation
    - The attending ED MD and other staff feel well
- On the 24th, Mrs K came via ambulance, her daughter in law recalls talking with 2 EMTs and one paramedic. The signature is illegible on the paperwork. She was in the ED most of the day, again, there were over 100 patients seen, as well as visitors and family members, and she was given many nebulizer treatments. Again, there were at least 20 staff working in the ED, plus consulting MDs.
- Mrs K was admitted to a non-isolation bed on the 25th on the ward where there were another 20 patients on the floor. The chart shows that she had at least 2 RNs, 2 PCTs, an attending MD, resident MD, and medical student who had close contact with her, plus a chaplain, dietician, and any other staff who did not sign her chart.
- When she was on the ward a code was called due to her severe respiratory distress, early in the AM on Day 26. She was treated with nebulizers aggressively and has a difficult intubation, afterwards, she requires frequent suctioning by the respiratory therapists and ICU RNs. Based on the chart and on recollection of the

resident running the code, persons present during the intubation and during the 8 hours in the ICU before she was on respiratory isolation were at least the following; ICU resident MD 1, ICU resident MD 2, ICU med student 1, ICU med student 2, ICU RN 1, ICU RN 2, ICU RN 3, ICU PCT 1, ICU PCT 2, ICU RT 1, ICU RT 2, Pulmonary MD and the ID MD.

- The suspected index patient (the health care worker from Moscow) is now well and plans to leave the country tomorrow. He had gone to an urgent care clinic on day 10, was seen by at least an RN and MD, and waited for an extended period of time in the waiting room prior to being seen.
- PH receives a phone call from the same urgent care clinic on day 27. This clinic has 2 MDs, 3 RNs and 10 other support staff. An RN (RN2) calls to report that both MDs and all 3RNs are ill, and they have seen an unusual number of patients with fever and cough in the past few days, several of whom were recently seen for check-ups or non-respiratory illnesses. One MD is reportedly very ill and her husband ("who didn't sound so hot either") was taking her to YYYY ED. RN1 has been home sick with fever and cough for days, and her husband is apparently coming down with something too. The remaining staff, RN2 and MD2 came to work today but are both feeling bad with fever and cough
- Of the elderly woman's family members, the mother, father, 18 yo daughter, and 6 yo child have all been ill with fever and cough. The 10 yo and 13 yo children have not been ill. The family resides in a large apartment complex.
    - The mother is a stay-at-home mother, but despite being ill has taken the grandmother (Mrs K) to the ED and visited her in the hospital
    - The 6 yo had a mild fever and cough, but attended school anyway.
    - The 18 yo has continued to work shifts at a popular restaurant. (Her boss said she would be fired for calling in sick).
    - The father, despite fever, continued to work in his office day 14 and 15. He flew to Chicago on Day 16 with a fever and malaise. Day 17 he developed a cough, but continued to attend a sales meeting. He flew back on day 24 despite a hacking cough.
- One of the clinic patients who develops SARS-like symptoms is a member of the Aum Shinrikyo cult. He lives in an apartment complex alone and is disliked by his neighbors. One of his neighbors calls Public Health and the LAPD to report that he is suspicious that his neighbor deliberately started the SARS outbreak and then accidentally contracted the disease.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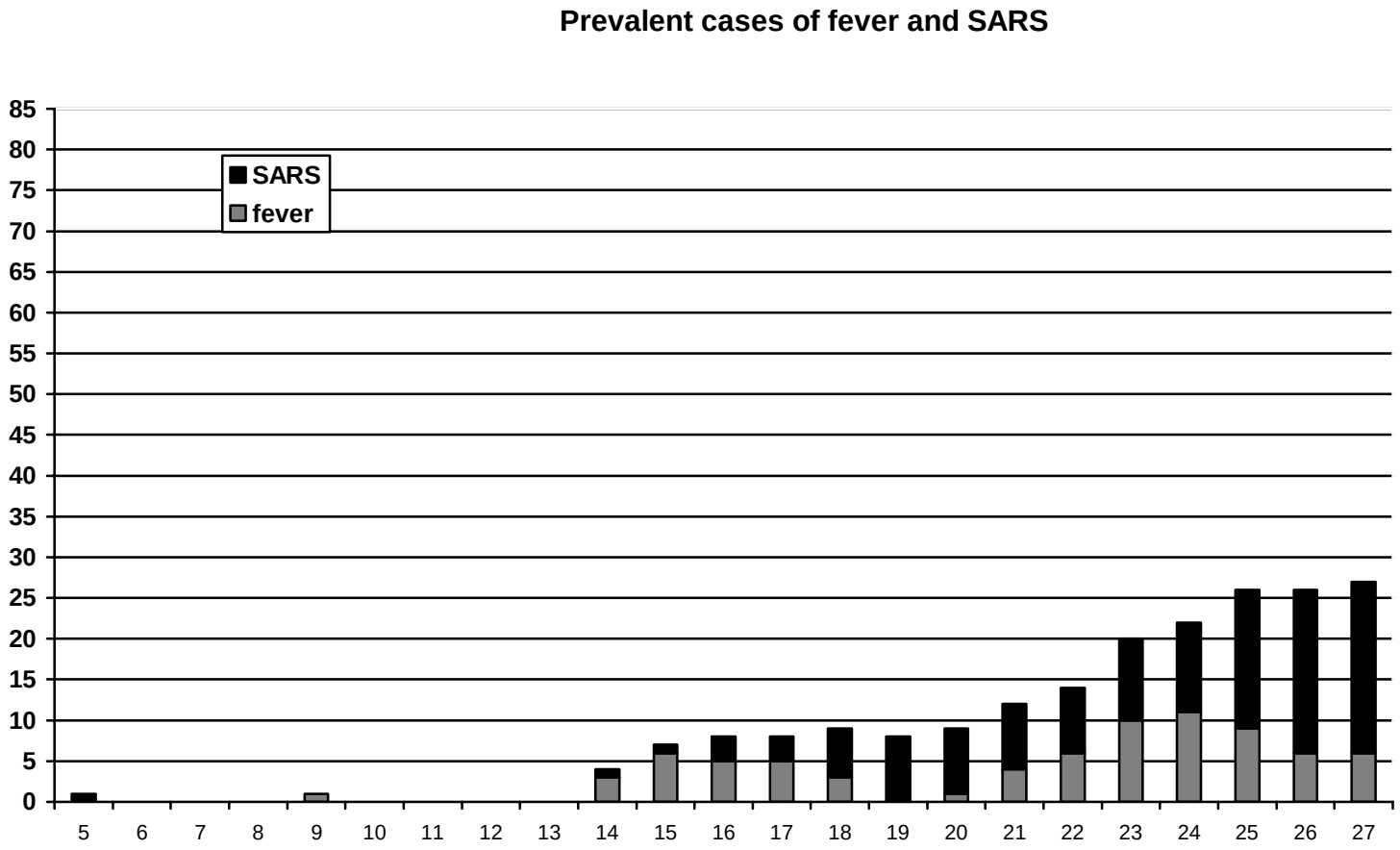
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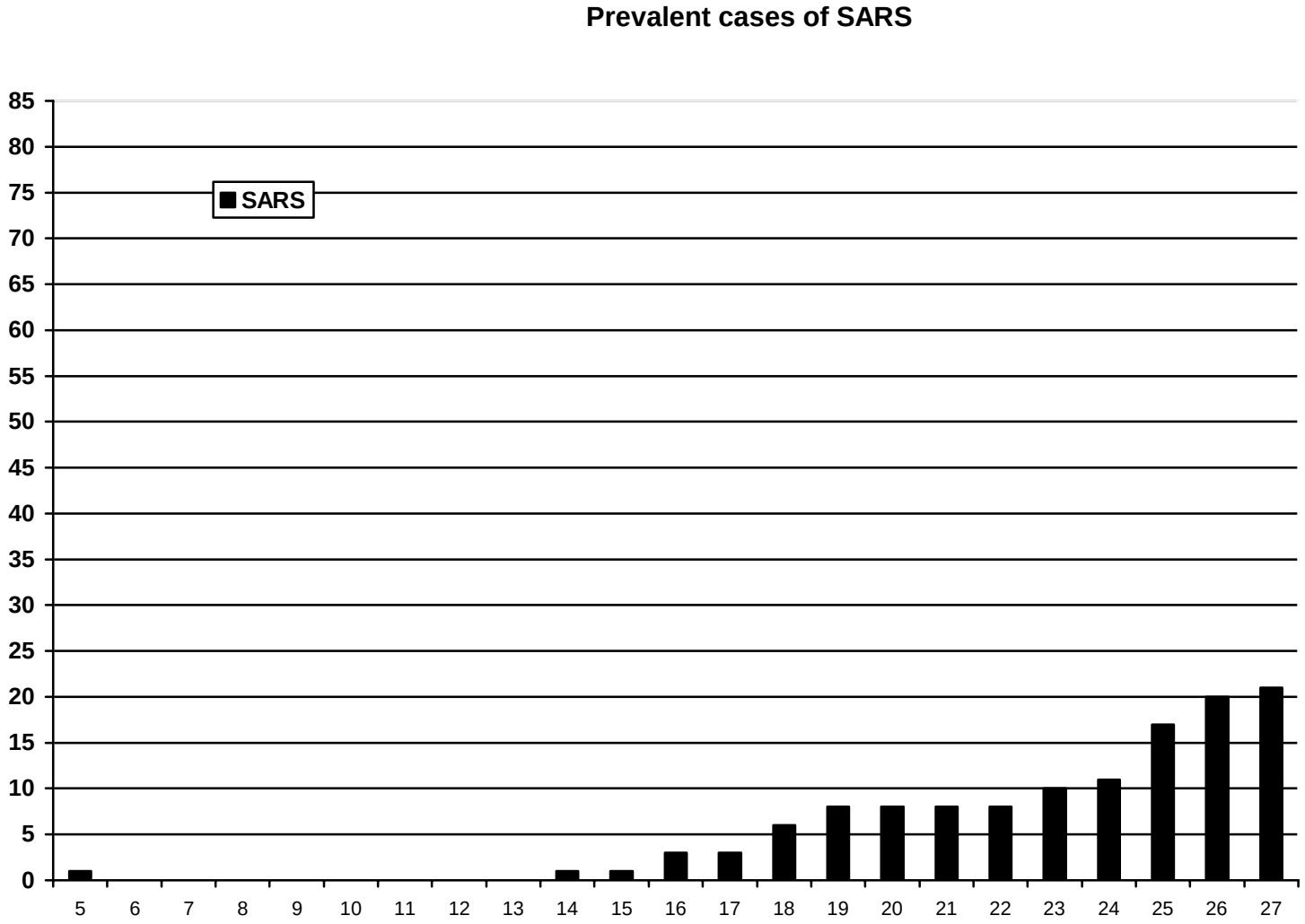
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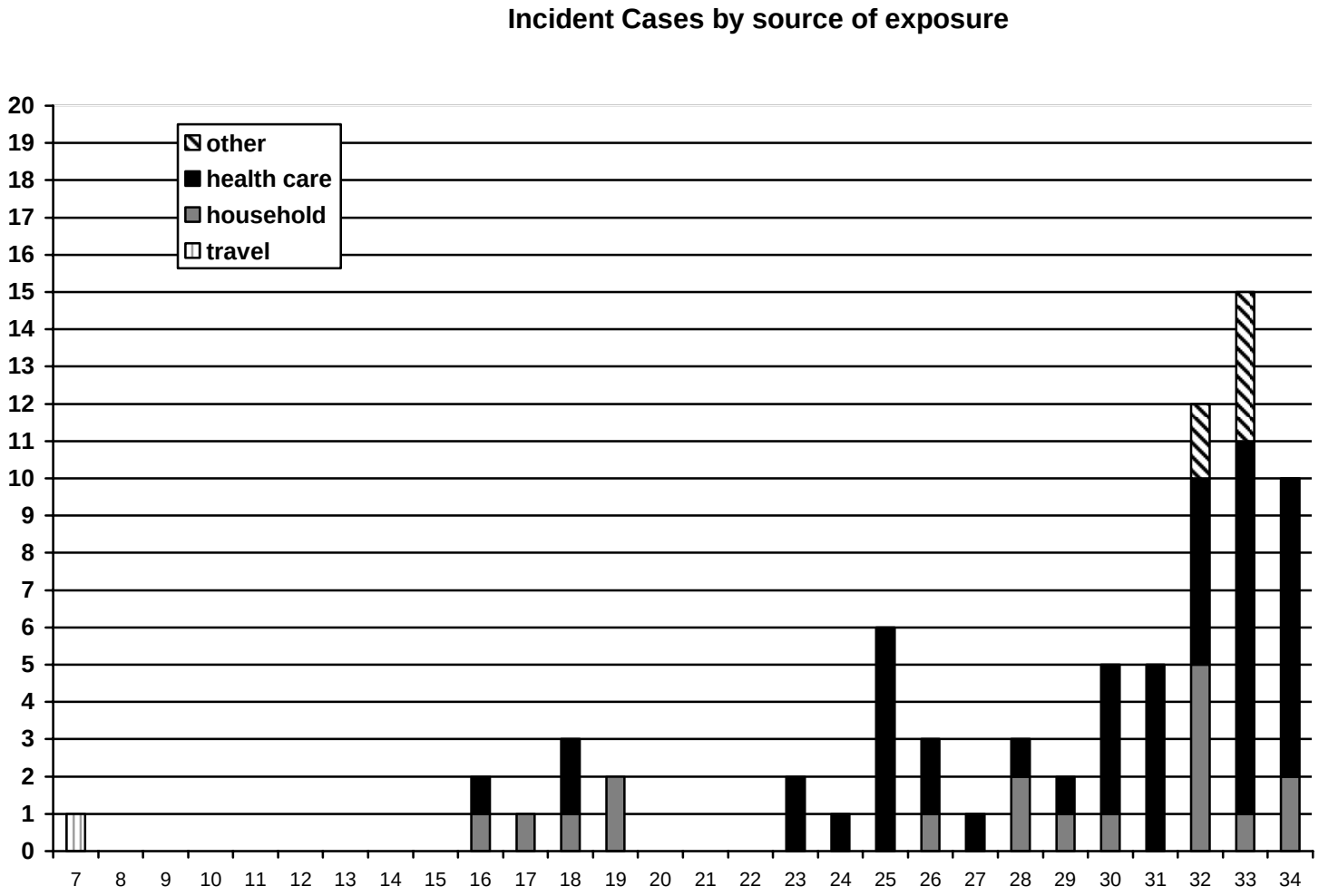
Interject 3
Day 34

- (See charts). Assume appropriate PH interventions have been in place County-wide since at least day 29 (earlier for Hospital XXX)
- By the end of day 34 there are 59 patients with probable or confirmed SARS, 19 of whom are hospitalized. 58 patients are on home isolation either with active SARS, fever, or recovering. There are 10 patients with exposure who have developed fevers, and 6 deaths thought due to SARS.
    - Mrs K died on day 28 in the ICU
    - The clinic MD who saw the HCW from Moscow died in an ICU at Hospital YYY on day 28, and became a Coroners' case. Before she was isolated in the ICU, a number of staff were exposed and 3 have subsequently become ill with SARS like symptoms. Her ill husband spent the night in the ICU waiting room, and 3 others from the waiting room have become ill.
    - A clinic patient seen by the ill clinic MD died on day 29 at home, the Coroners' investigator was called.
    - Another clinic patient died in Hospital XXX day 31
    - A patient seen in the ED on day 24 (Mrs K's second visit) died on day 32
    - A clinic patient's elderly mother died on day 33.
- From Hospital XXX a total of 25 staff, 2 patients, 2 patient family members, and 3 staff family members have developed SARS, with two additional exposed family members of patients and staff developing fevers. The hospital is having difficulty staffing the ED and ICU.
- From the urgent care clinic, 6 staff, 2 staff family members, 11 patients, and 10 secondary contacts of patients have developed SARS-like symptoms.
- An EMT and paramedic who cared for Mrs K on day 24 have developed probable SARS. The paramedic, before being isolated, spent the night in a fire station while ill with a fever, but prior to developing a cough.
- A lawyer, the son-in-law of one of the ill clinic patients, and his wife have developed SARS and are reluctant to be isolated at home. He feels he should be able to continue working as long as he takes "reasonable precautions."
- On day 29, a group of worried students contacts campus health from ZZZ University. A female college student recently became ill (*she had been seen at the urgent care clinic, but does not mention this unless she is asked*) Subsequently, her roommate and boyfriend developed SARS-like symptoms and his two roommates developed fever on days 33 and 34. They saw the reports on the news about SARS and are convinced they have it.
- No children or staff from the 6 year old's school have become ill
- The husband of one of the ill clinic RNs, a schoolteacher, prior to being isolated, taught school with a fever (but not a cough).
- Of contacts of the 18 yo waitress at the restaurant, another waitress and a cook have become ill. No restaurant customers have been reported ill. The cook is

medically stable at home in isolation, but his wife calls PH since she cannot locate any surgical masks to purchase.

- The wife of the ill medical resident becomes ill with SARS. Their one-year-old son remains healthy despite high- level exposure. The medical resident is hospitalized, and the wife is stable at home, but cannot care for her child. No family members or friends are willing to take care of the child out of fear that they will be exposed to SARS.
- Three airline passengers on the same flight from Chicago as the ill father have become ill.
    - One, a local resident, continued to work in retail sales while ill with fever, and probably exposed his spouse prior to being isolated.
    - Another passenger, a tourist from Illinois, went sightseeing while ill with fever on day 28 then developed cough. He was staying in a hotel, and demands to be allowed to return home. The hotel refuses to allow him to stay or be isolated in his room.
    - Another passenger, now in Sacramento, developed fever on day 29 and probable SARS on day 33.
- Several SARS patients live alone, and are medically stable in home isolation but need assistance including delivery of meals.
- Several ill health care workers call their respective unions, worried about pay while on administrative leave, and the financial impact of having an ill family member also miss work, due to exposure from the health care worker.
- The PH SARS hotline has received up to 20,000 calls a day
- The MH SARS hotline has also received up to 20,000 calls a day


Incident Cases by source of exposure
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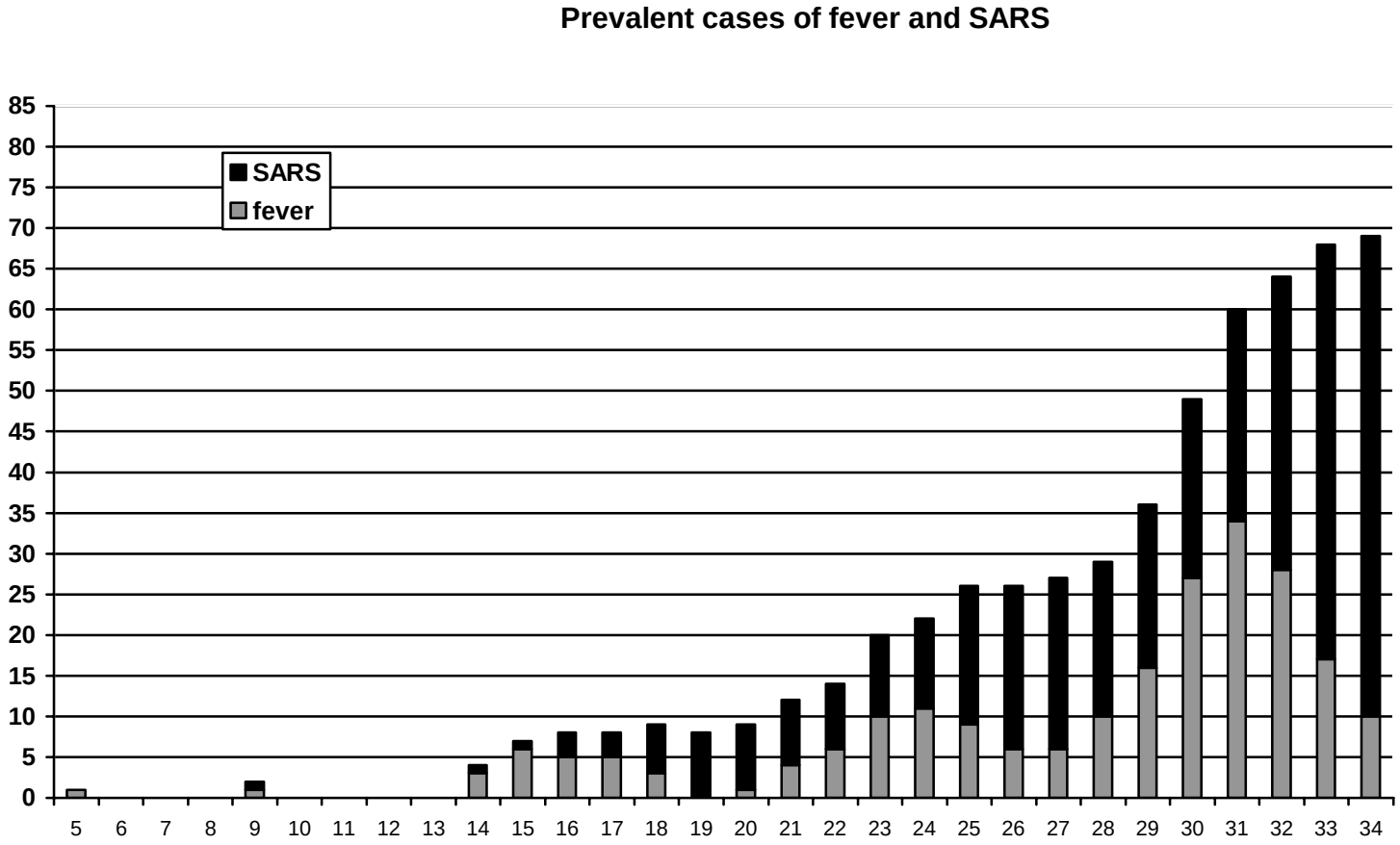
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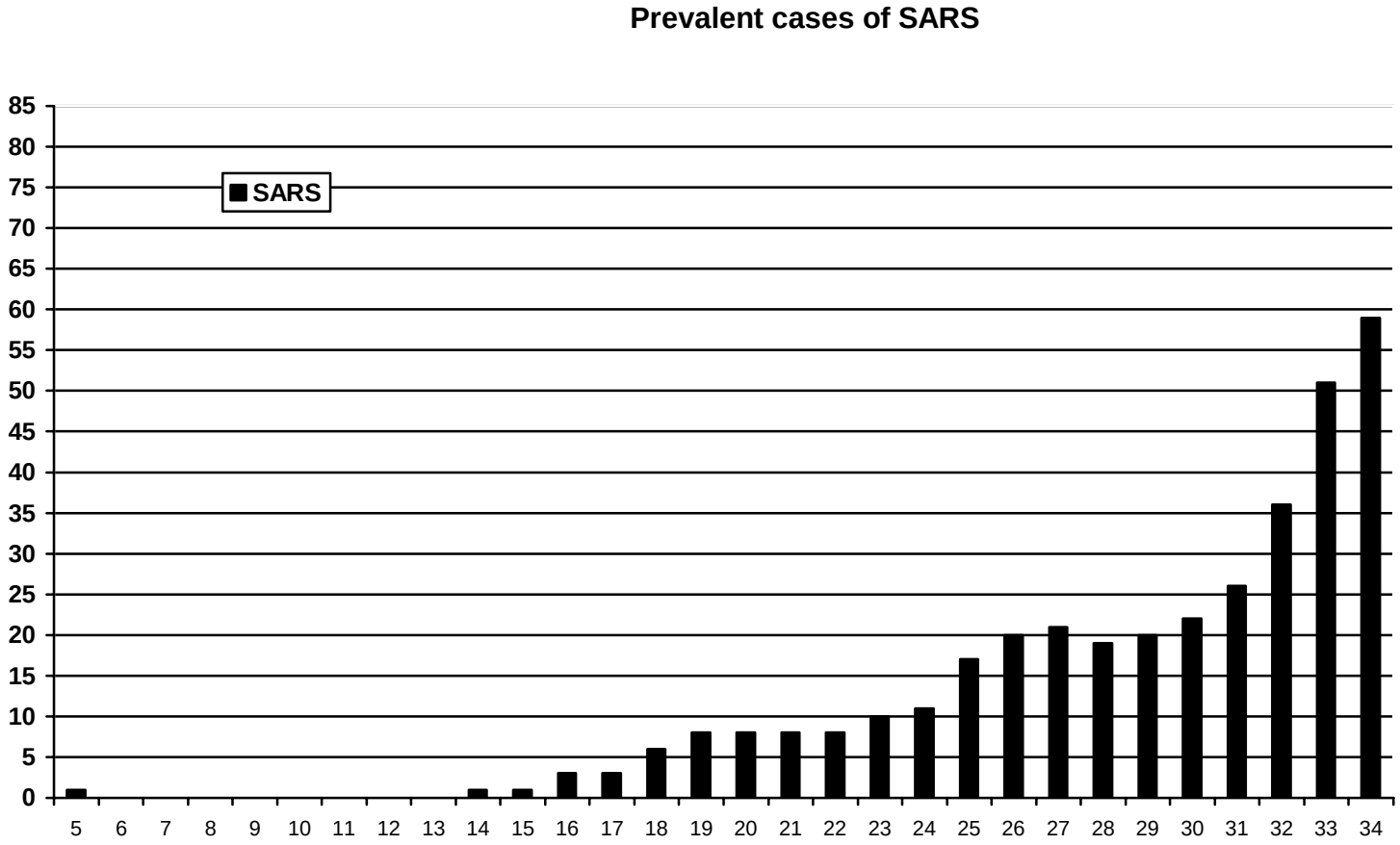
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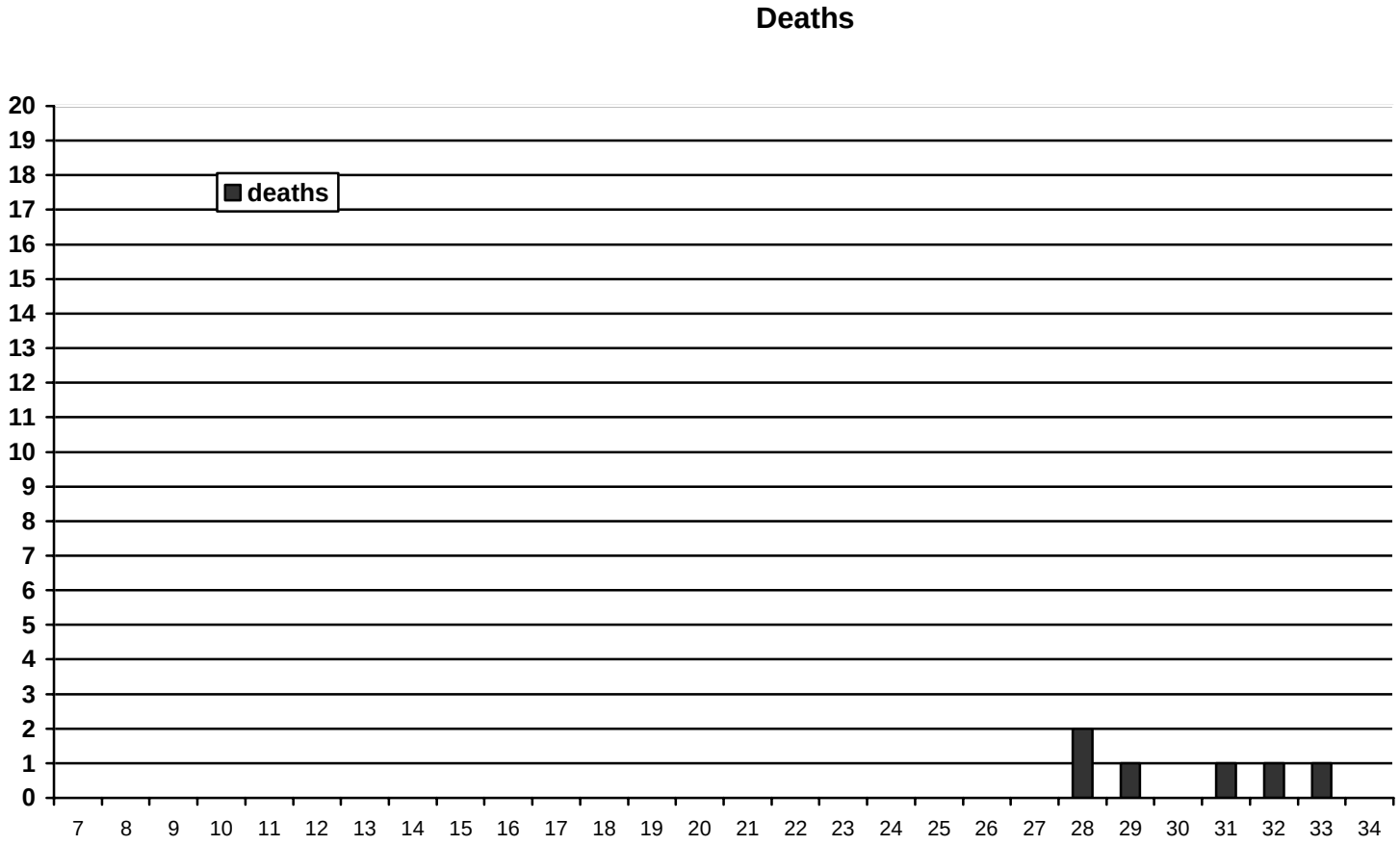
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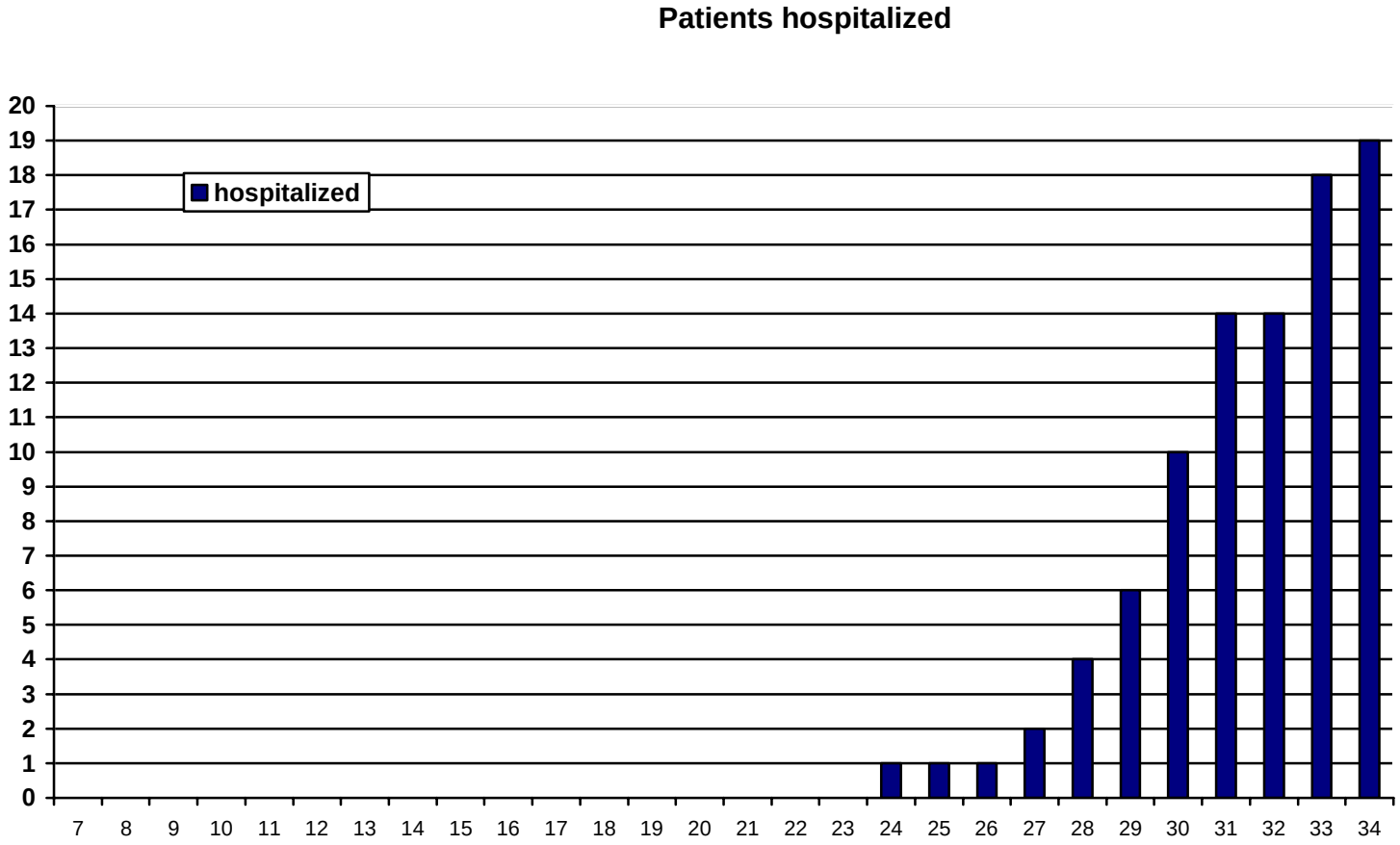
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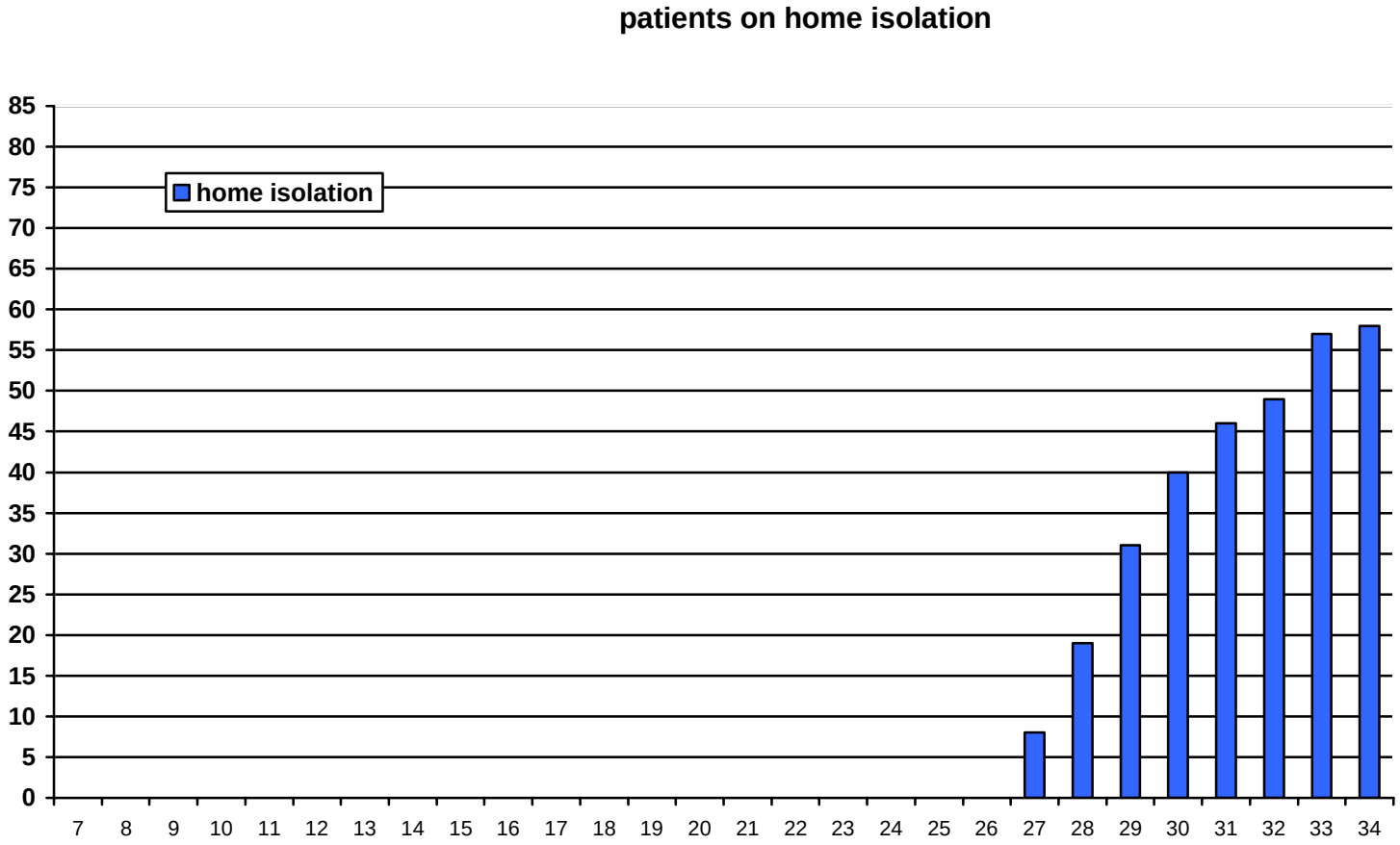
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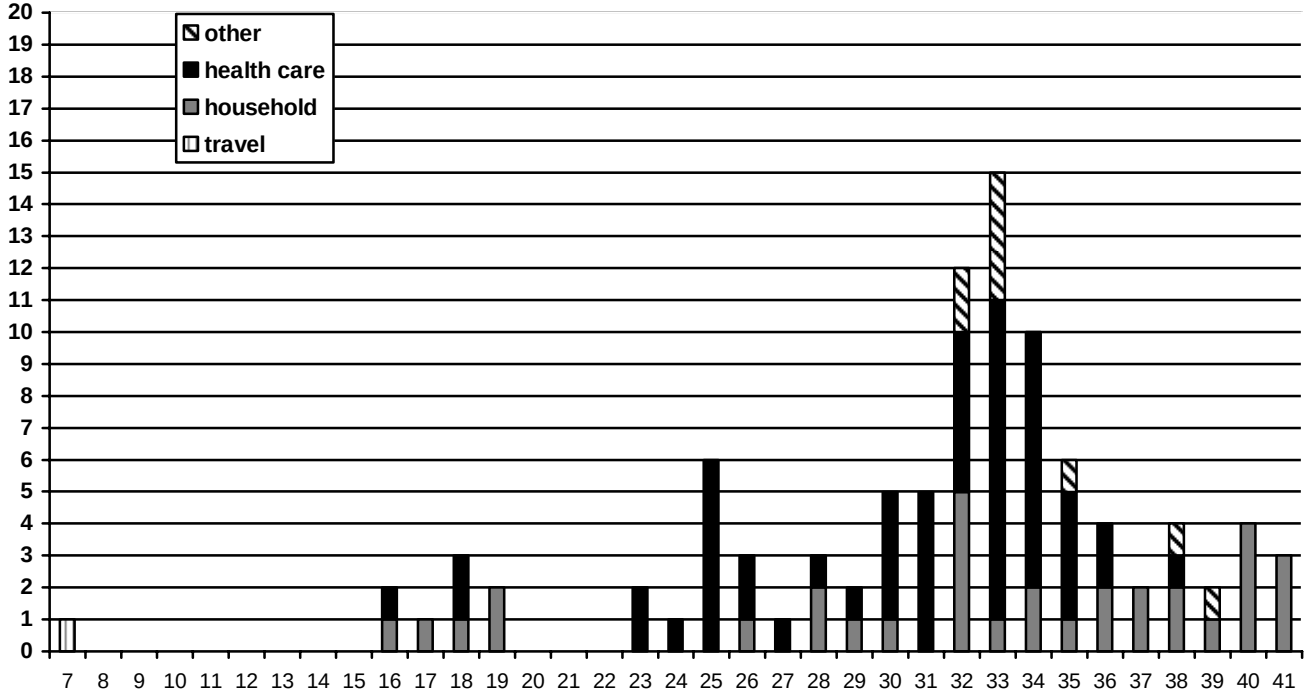
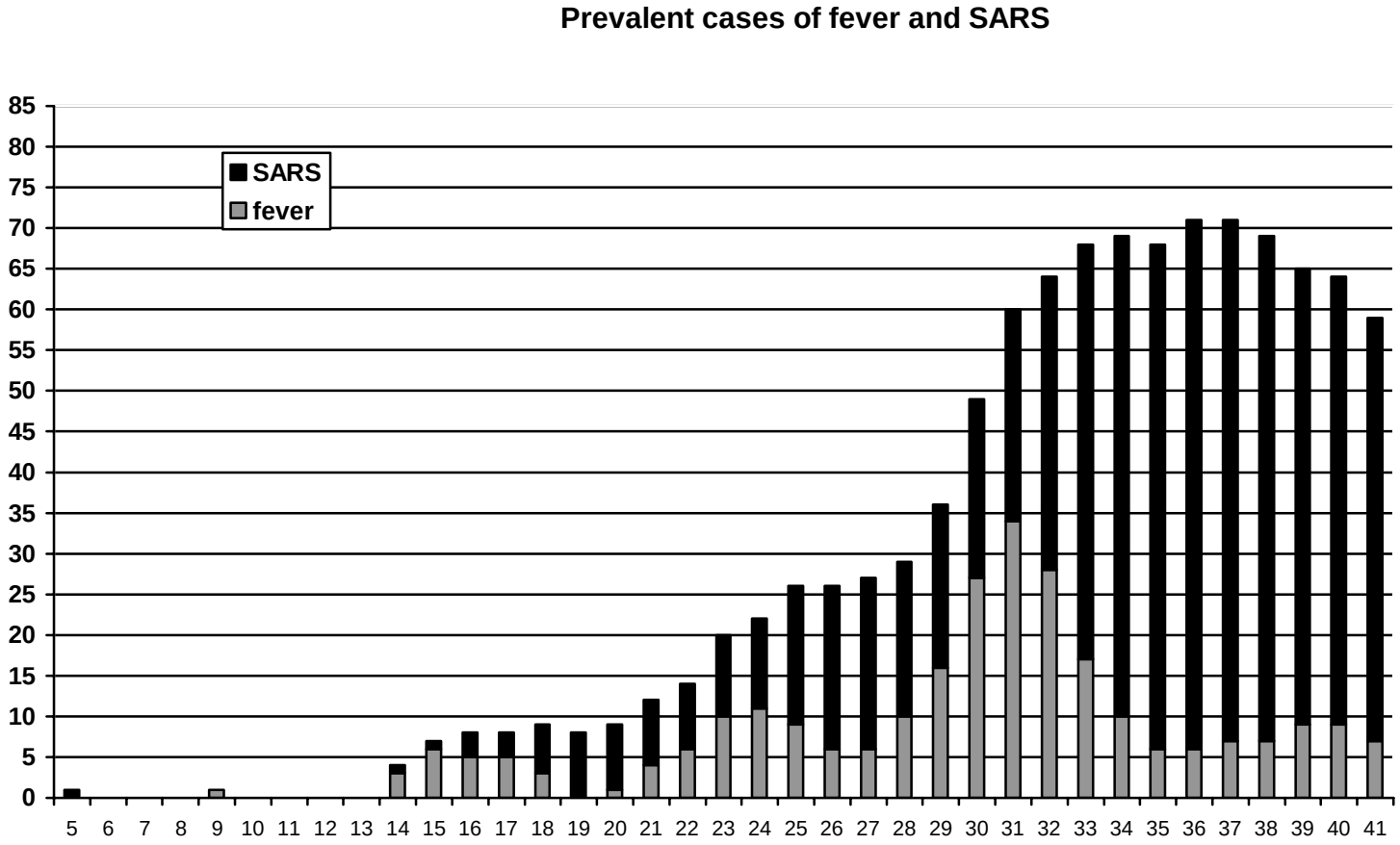
Interject 4
Day 41

- (see charts) By the end of day 41 there have been a total of 98 cases of probable and confirmed SARS, and 11 patients have died. On day 41, there are 52 active cases of SARS, 10 fevers in exposed individuals, 9 patients are hospitalized, and 79 are on home isolation. PH interventions appear to be working well, as the number of new cases, especially health care related, has decreased dramatically over the last few days.
- Additional cases are primarily in family members of health care workers, or clinic patients. All cases can be traced to the index traveler. No additional cases have been imported. So far, all other cases in the US are all traced to contacts from Moscow. The outbreak in Moscow remains difficult to control, with apparent widespread community transmission.
- A PHN working on the SARS outbreak developed a fever on day 36, respiratory symptoms on day 38, and required hospitalization on day 40.
- Despite any confirmed cases of SARS in schools, other than the initial ill 6 yo and the ill schoolteacher, there continues to be widespread concern about the safety of children in schools. Absenteeism is rampant. PH receives hundreds of calls reporting children with cough or other symptoms who have no known epidemiological link.
- There is widespread discrimination against residents of Russian origin or descent, and Russian-owned businesses are suffering.
- Several ill health care workers call their respective unions, worried about pay while on administrative leave, and the financial impact of having an ill family member also miss work due to exposure from the health care worker.
- There is a nationwide shortage of N-95 masks, and many hospitals are asking PH to provide them.
- The PH SARS hotline has received up to 20,000 calls a day.
- The MH SARS hotline has received up to 20,000 calls a day.

Incident Cases by source of exposure

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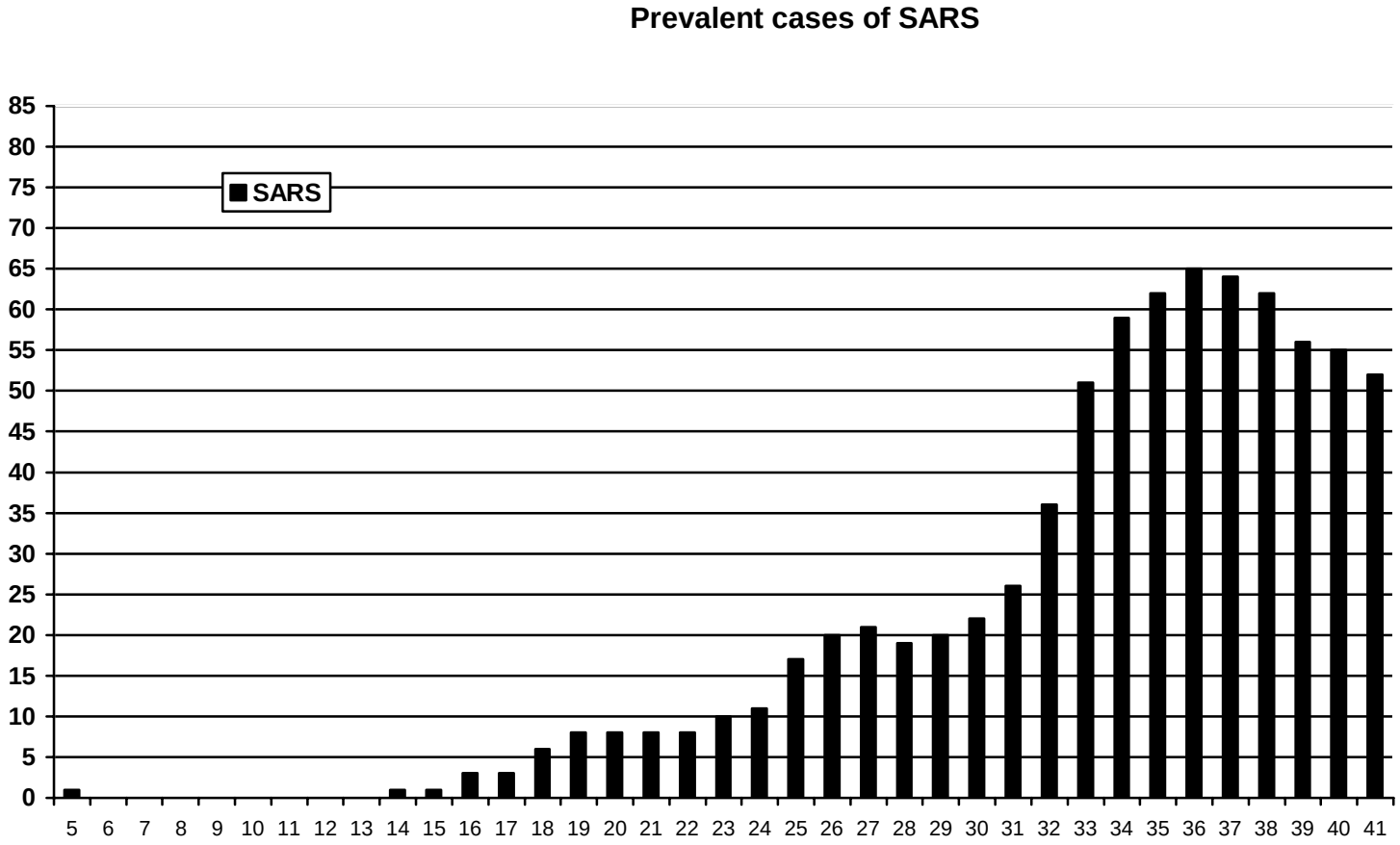
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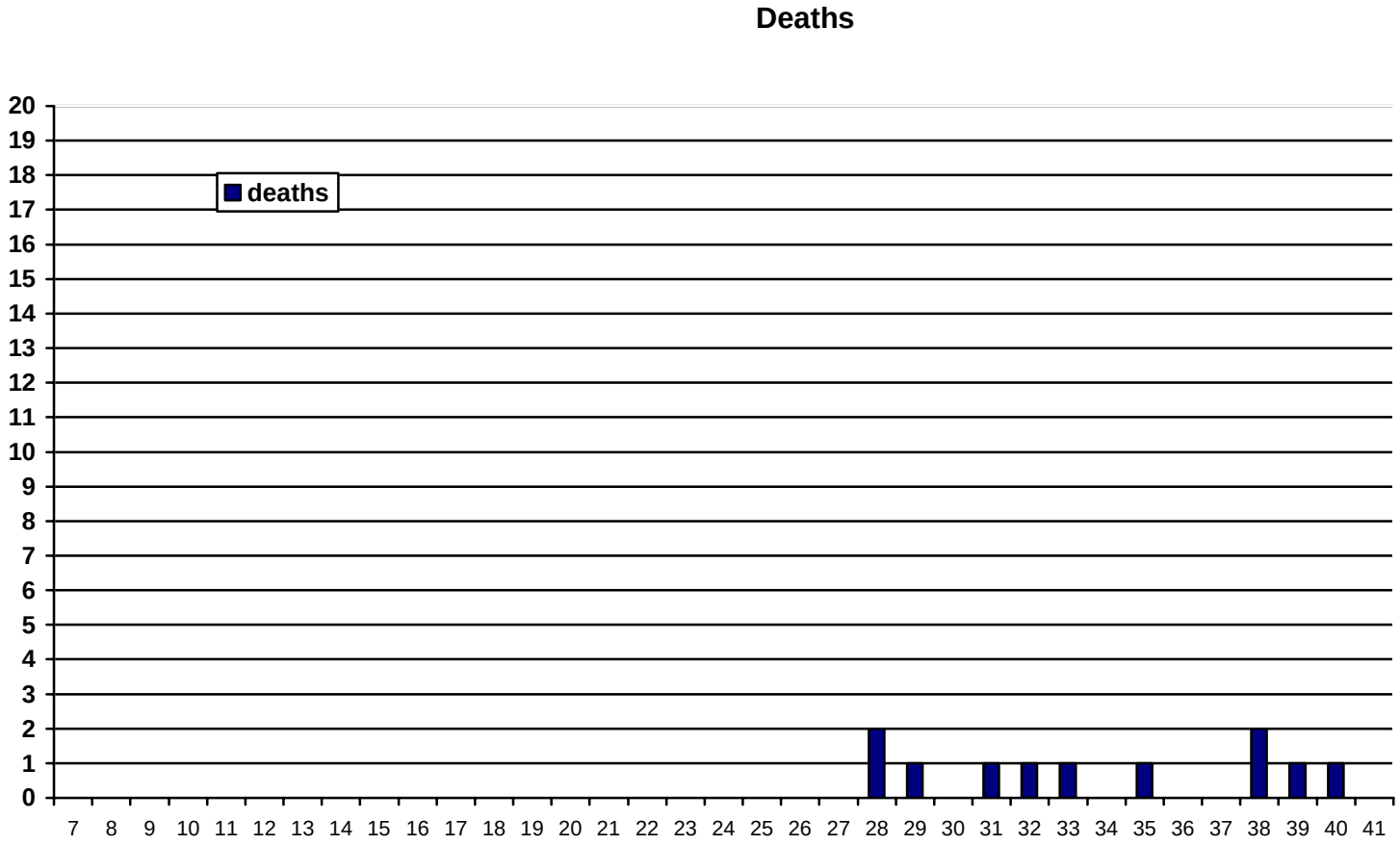
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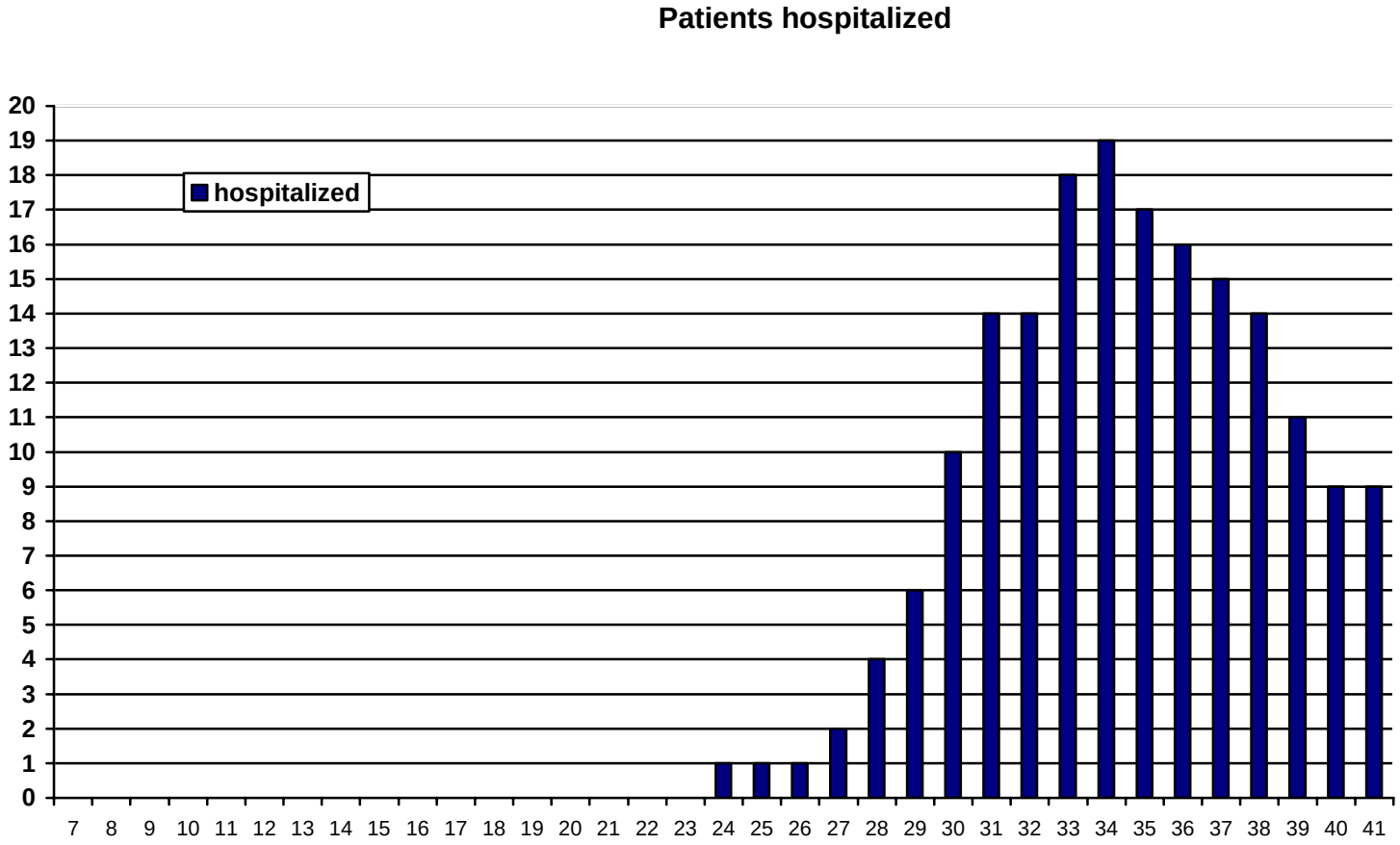
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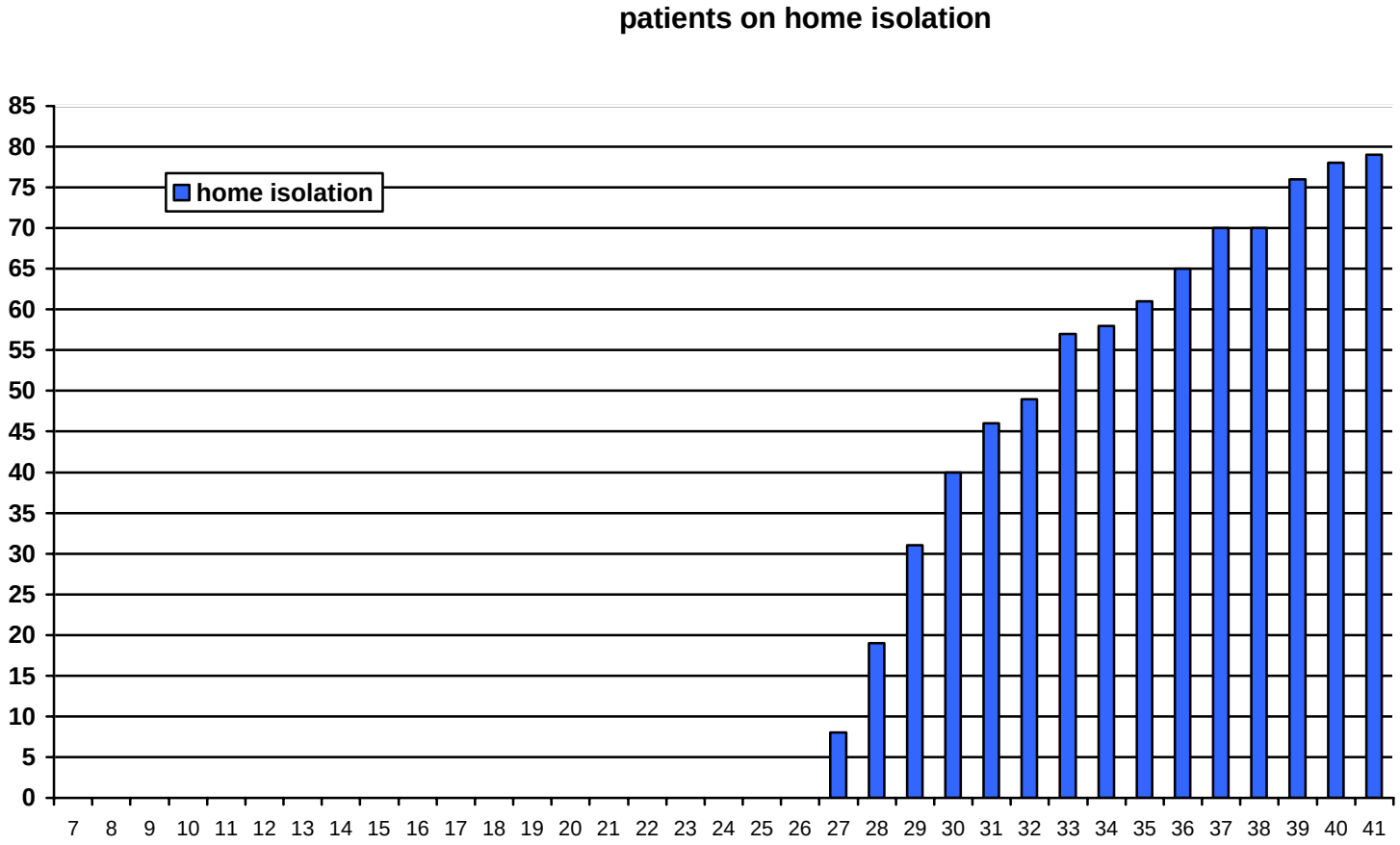
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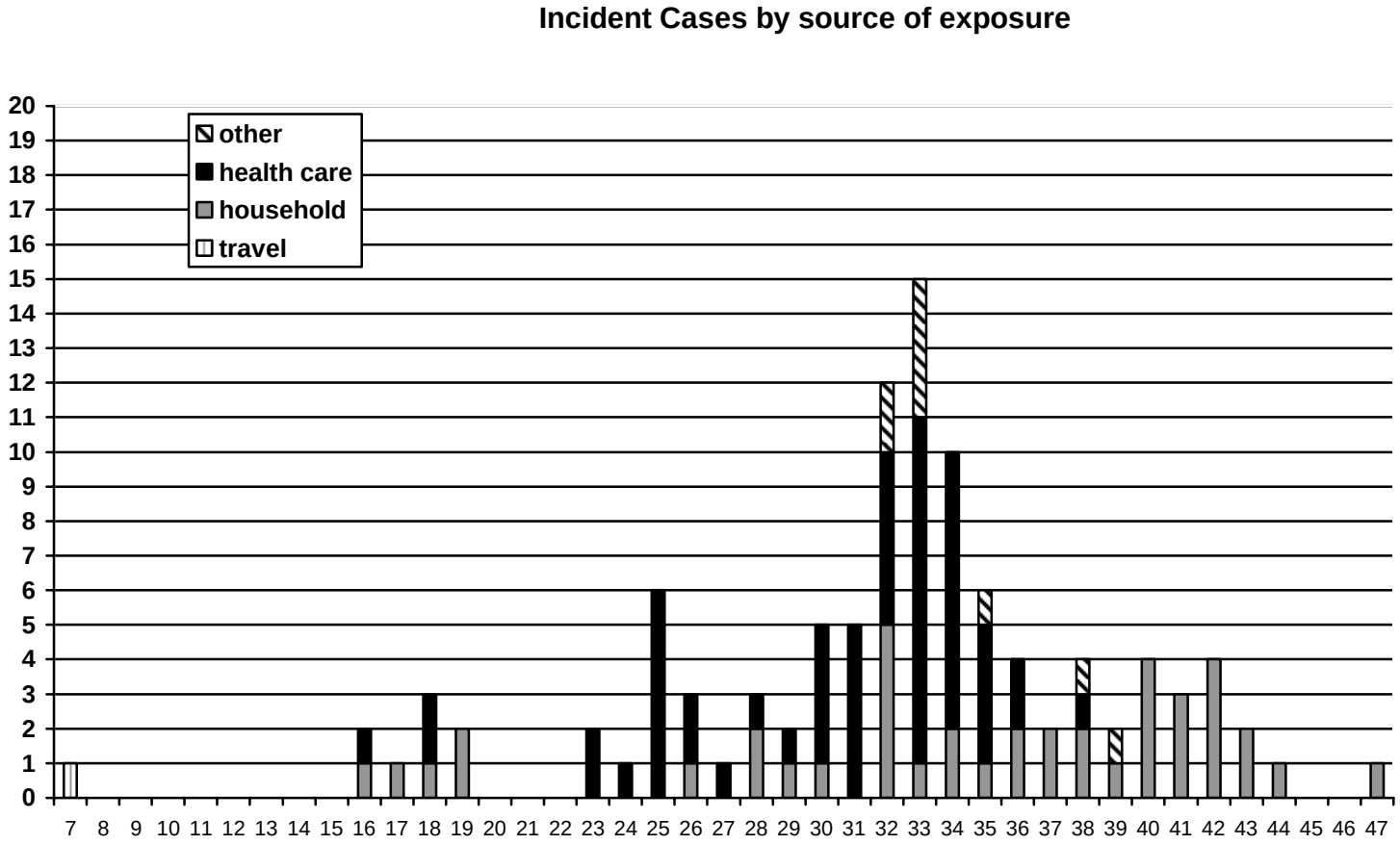
Epilogue

- **See charts**
- **2 incubations periods have passed with no new cases in LA or CA**
- **Outbreak in LA with a total of 106 cases, all linked to index traveler, 15 deaths, primarily in elderly patients with other comorbities**
- **Outbreak controlled in US**
- **Outbreak now under control in Moscow, no evidence of community transmission anywhere in world**
- **Schools, businesses still having difficulty returning to normal**
- **Many health care workers with depression, anxiety, other symptoms**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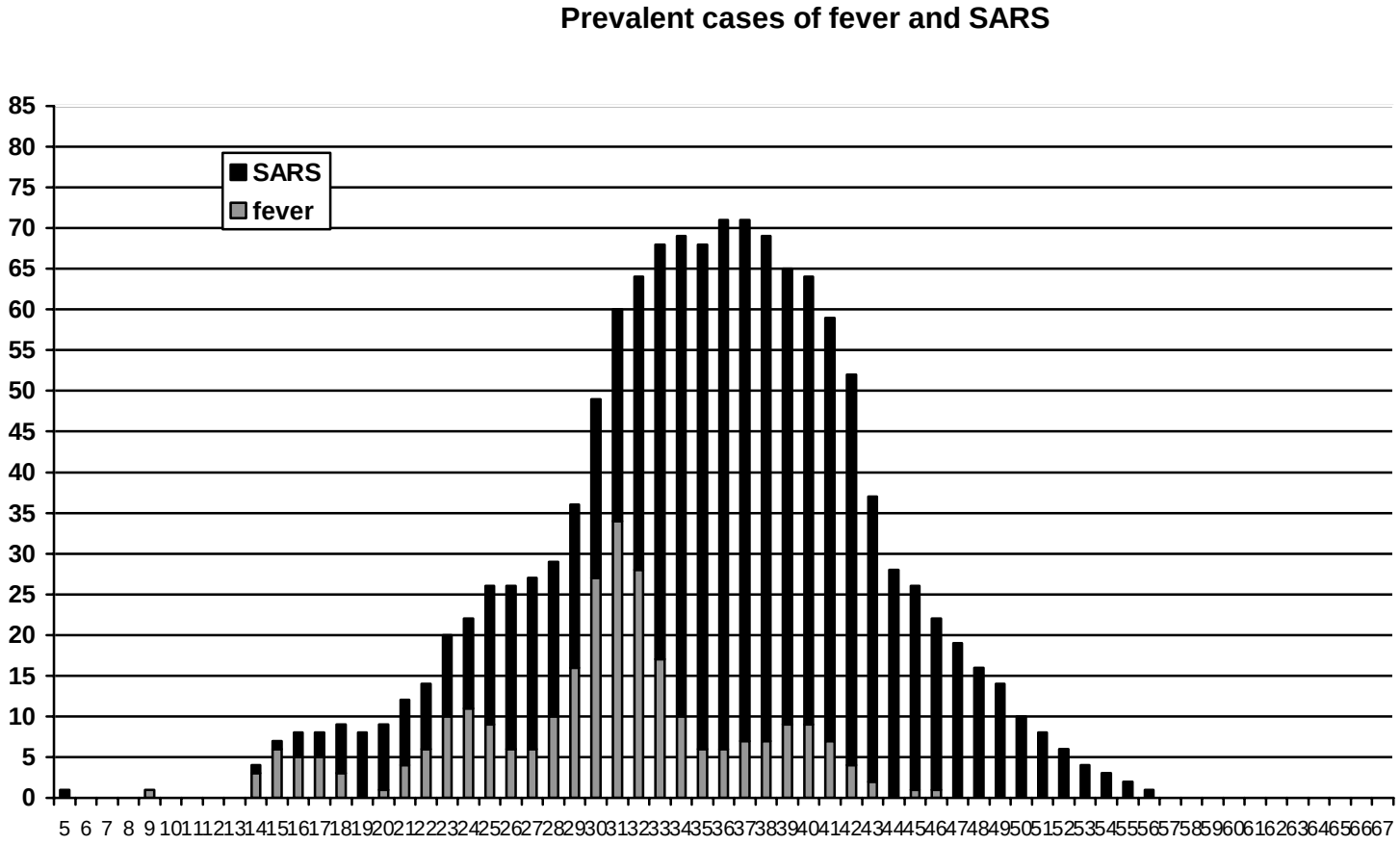
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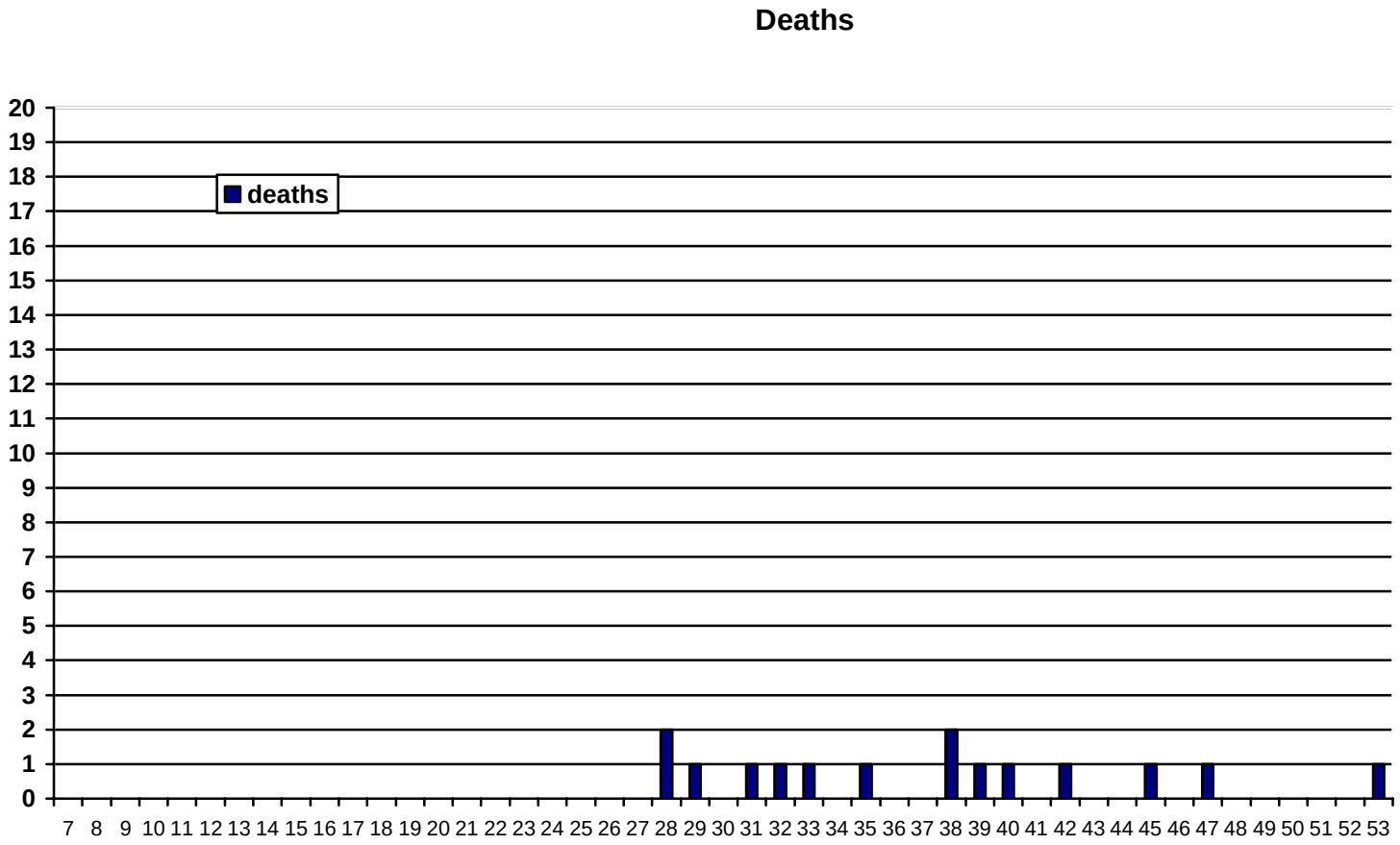
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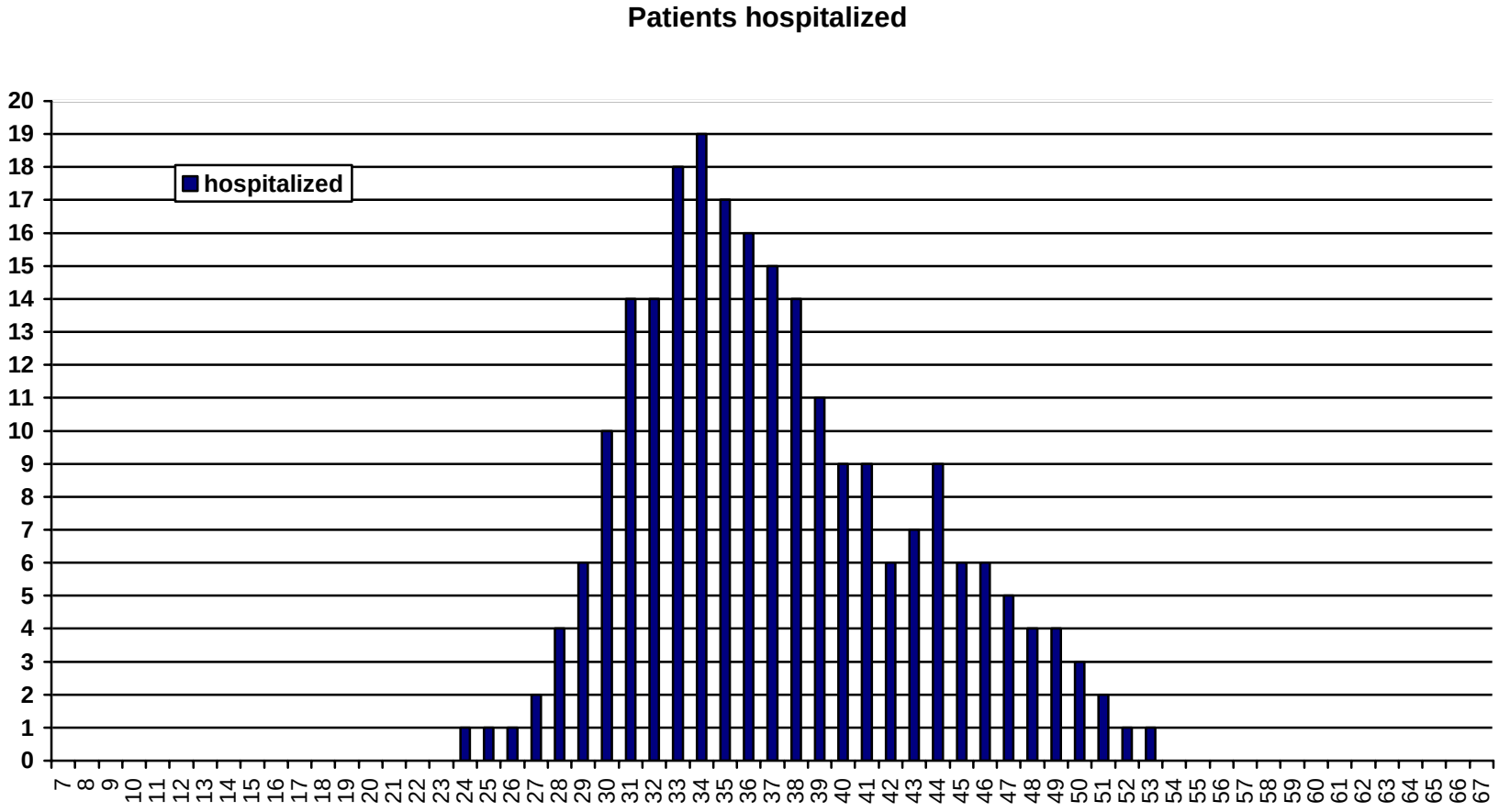
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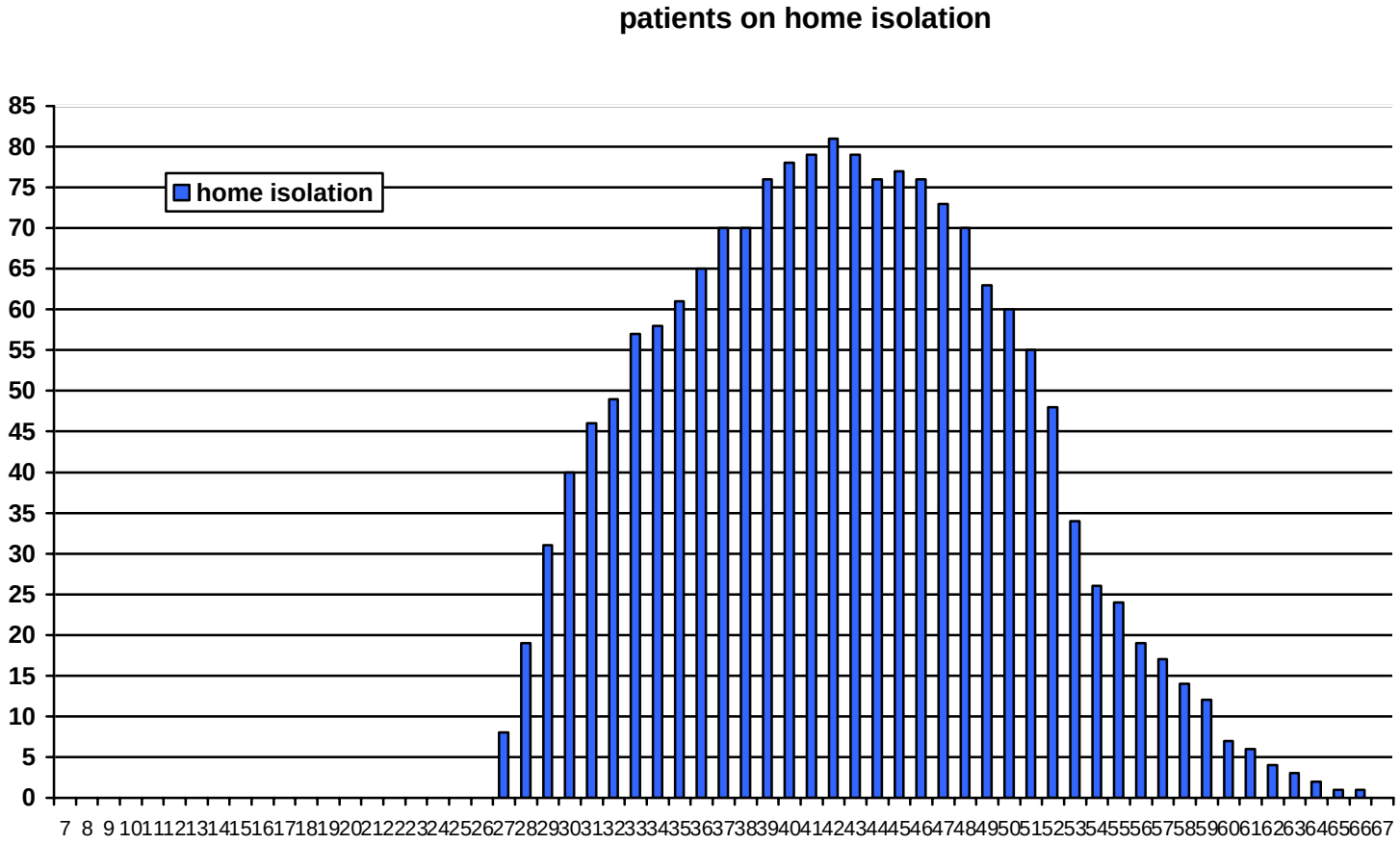
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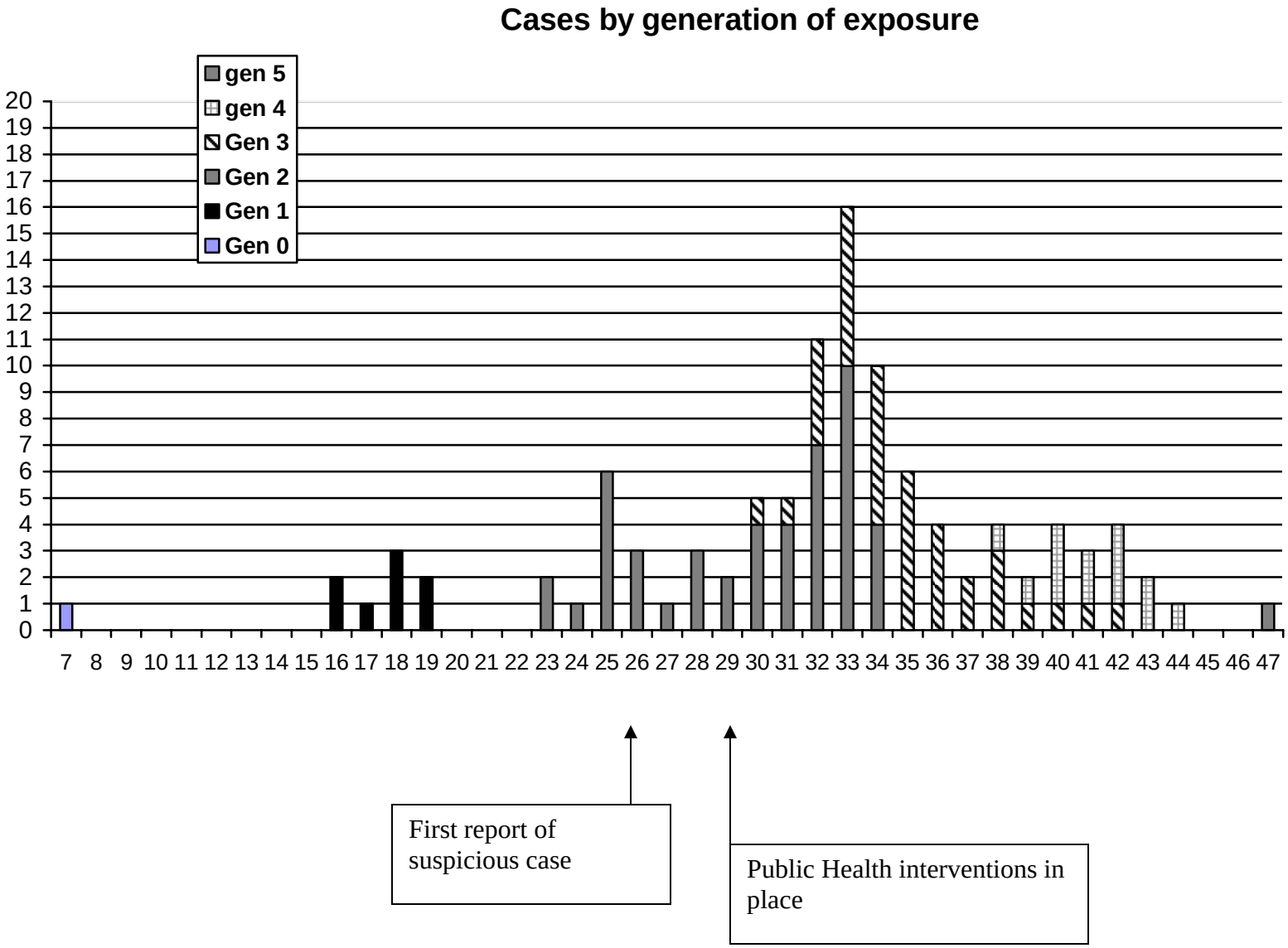
Cases by generation of exposure
gen 5
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Gen 3
Gen 2
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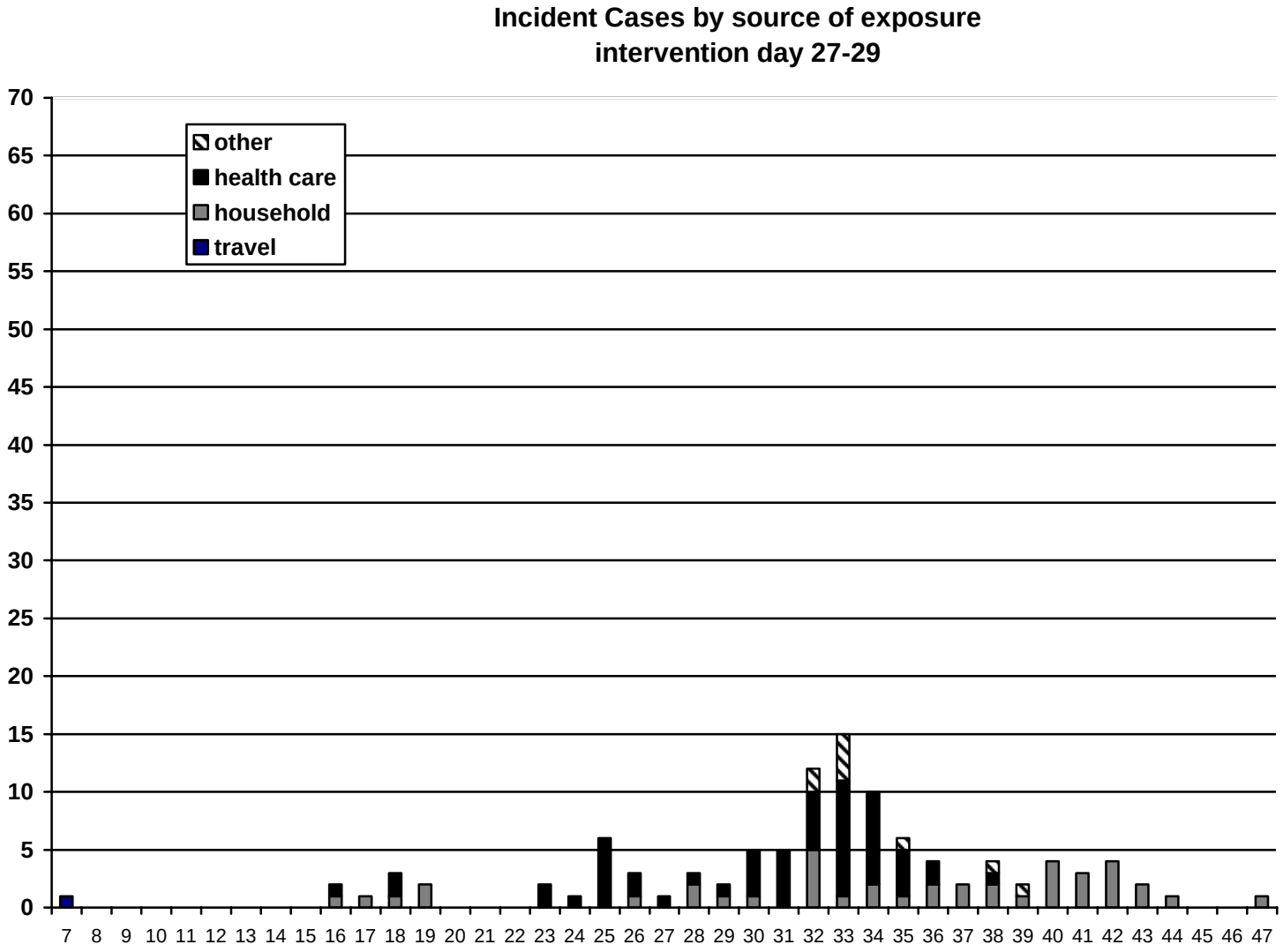
First report of suspicious case
Public Health interventions in place

Effect of Public Health Interventions by Date Implemented


Incident Cases by source of exposure
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health care
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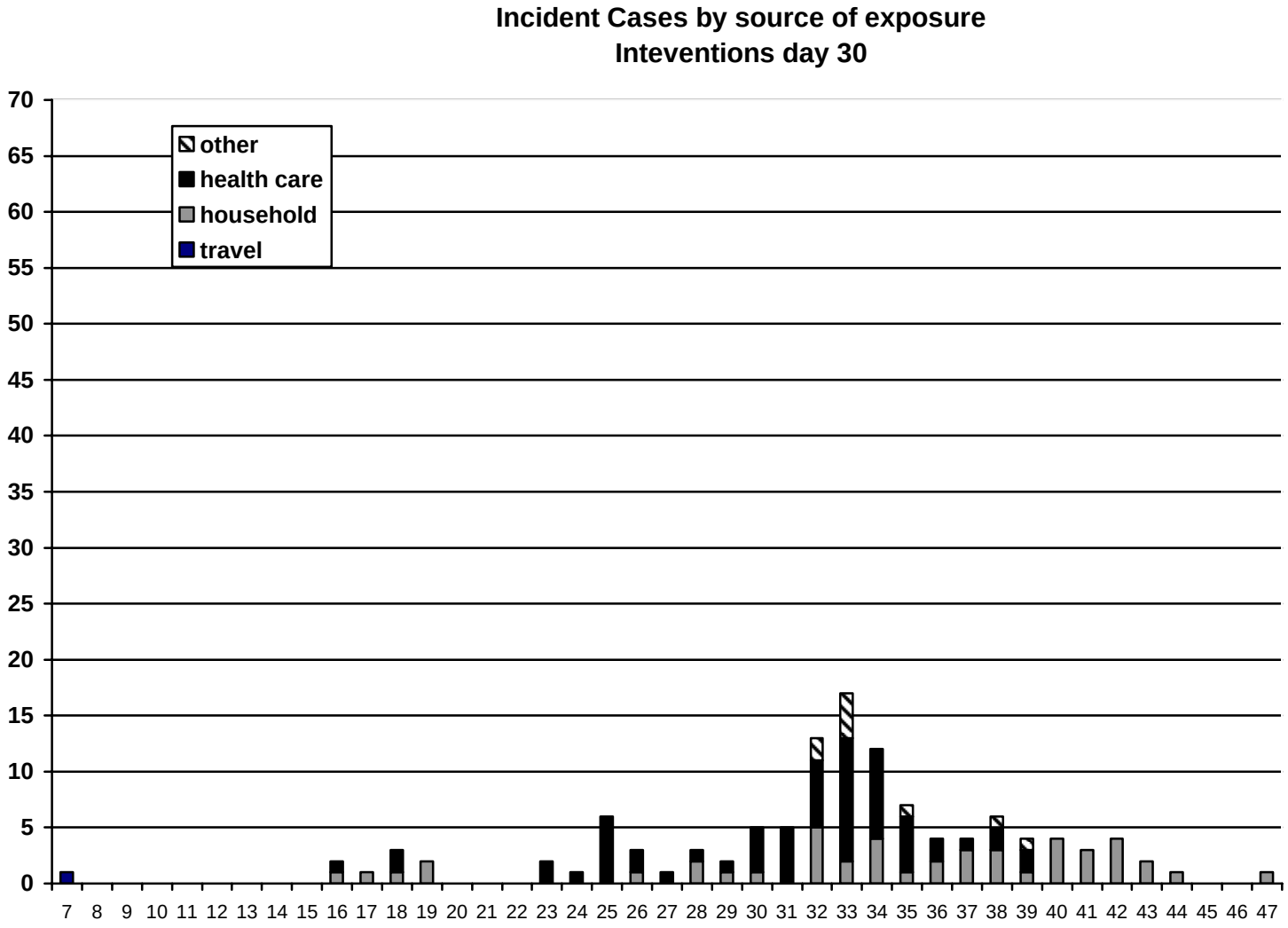
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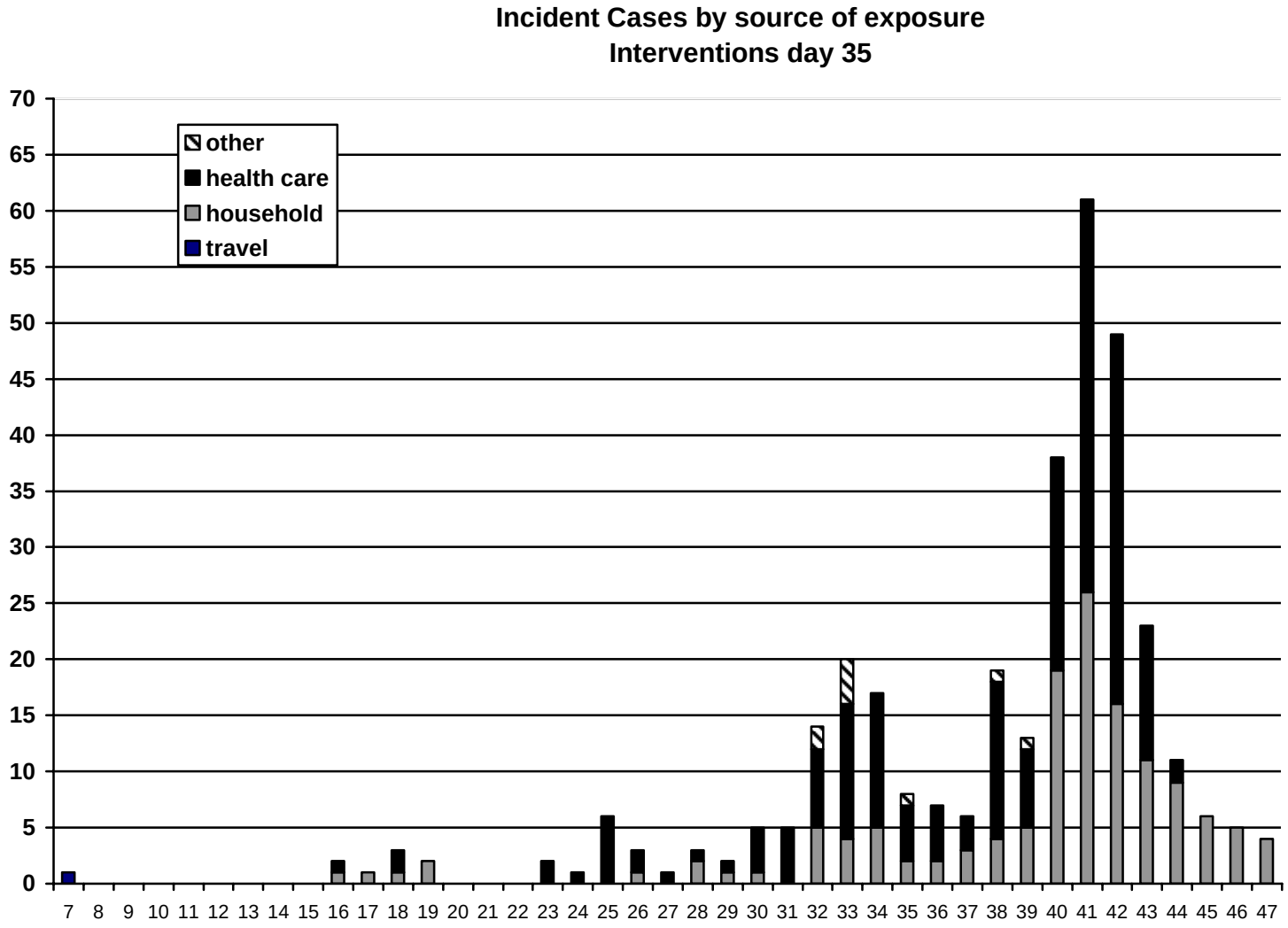
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Interventions day 35
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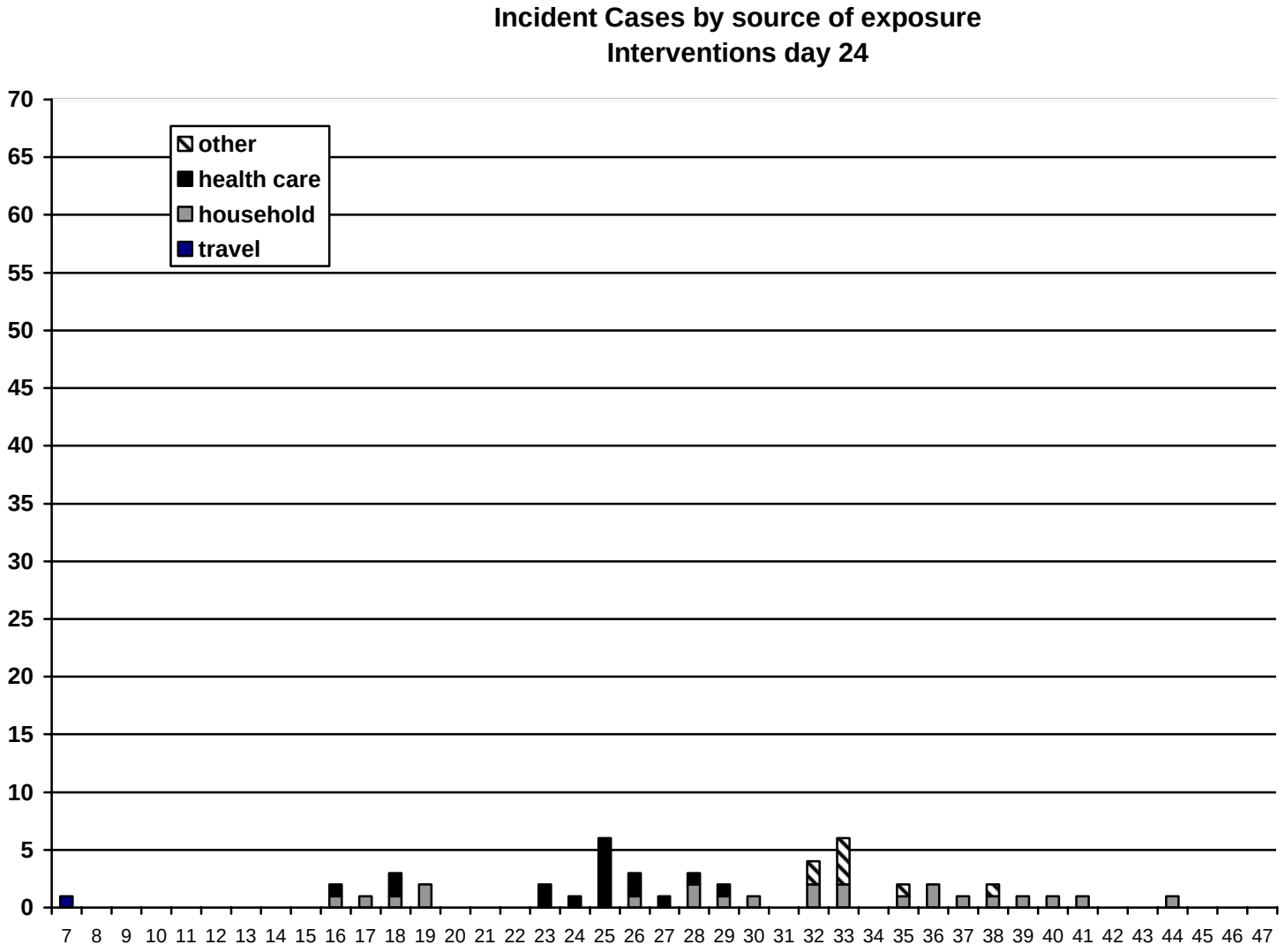
Incident Cases by source of exposure
Interventions day 24
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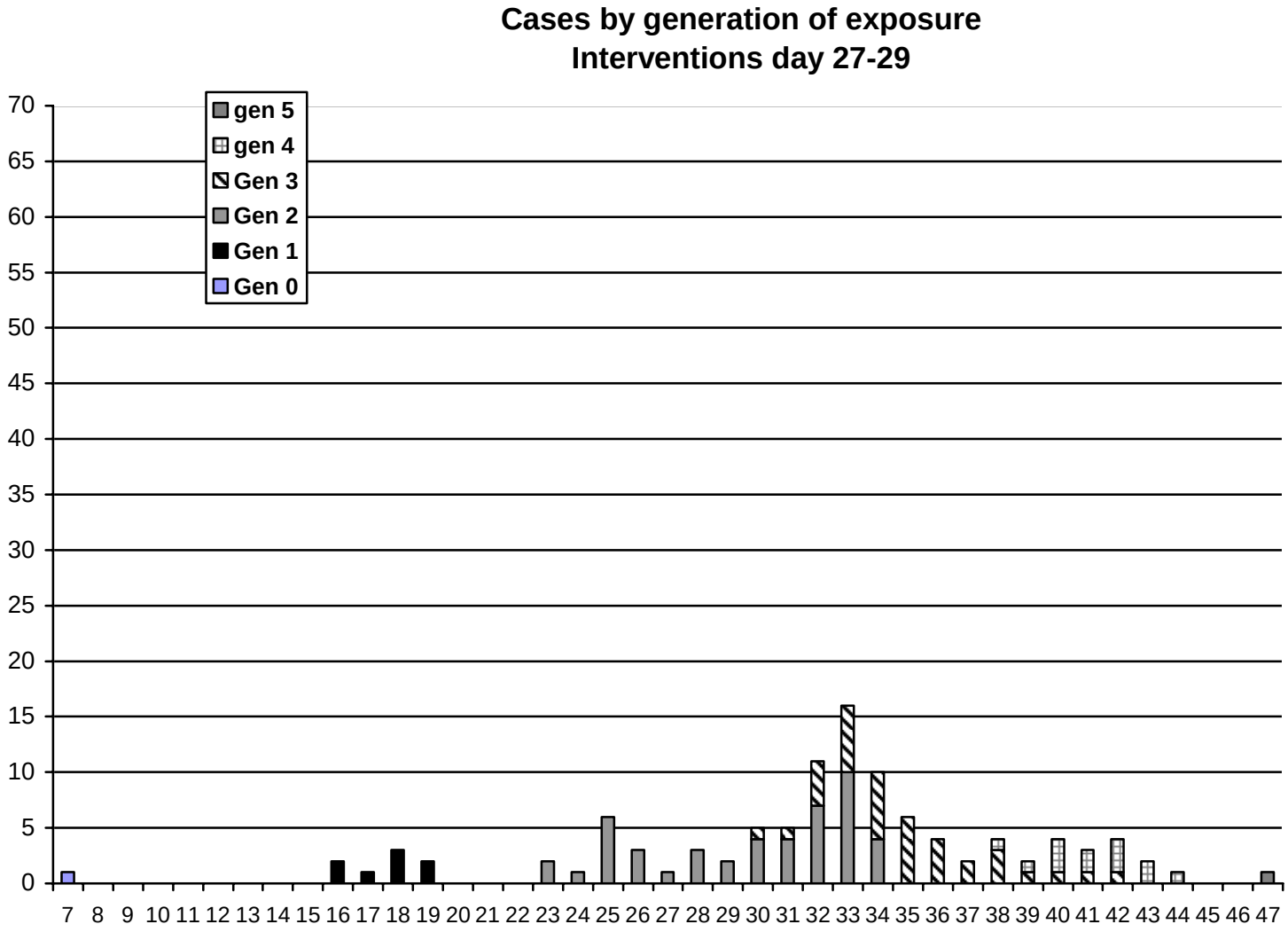
Cases by generation of exposure
Interventions day 27-29
gen 5
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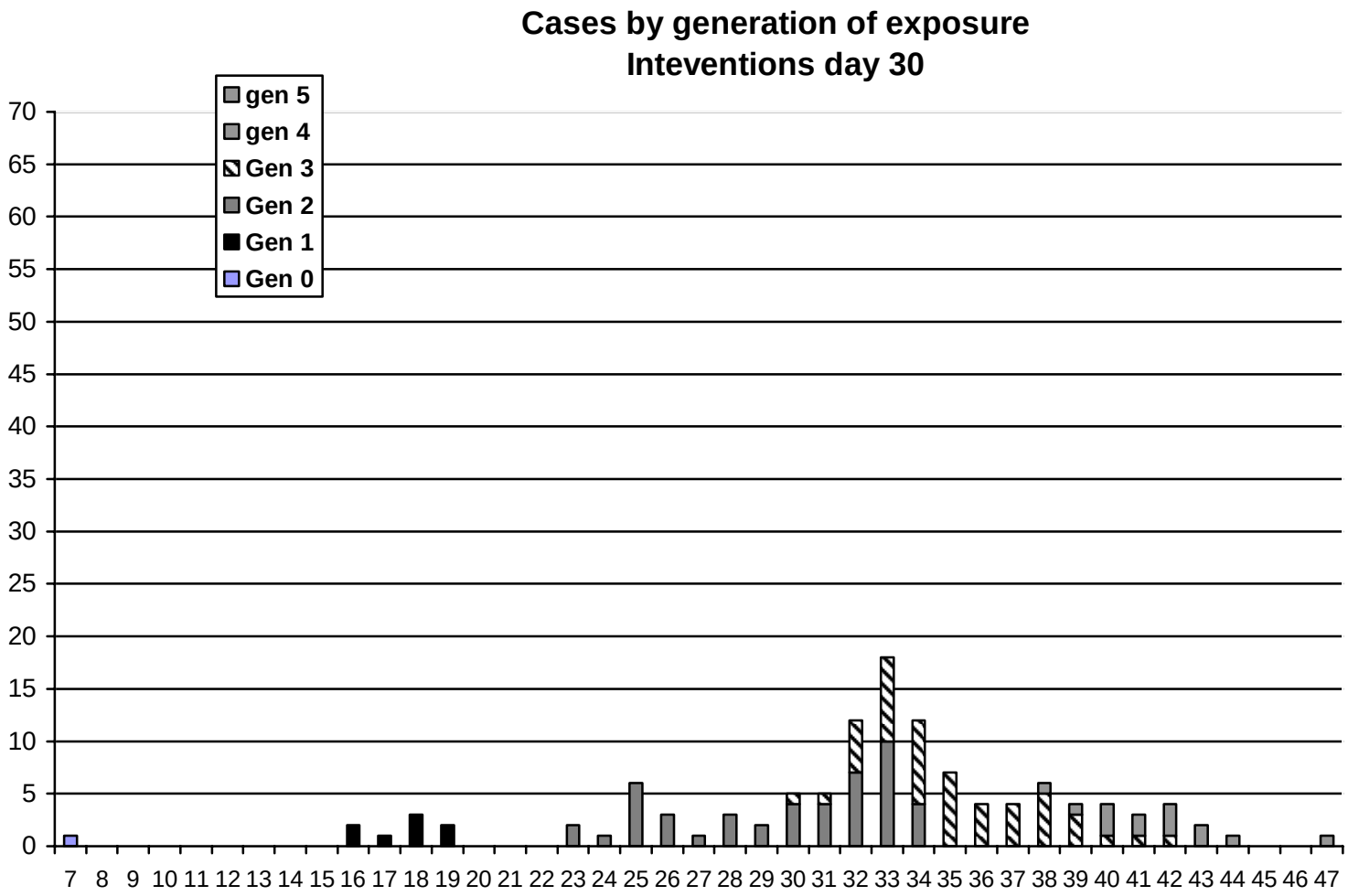
Cases by generation of exposure
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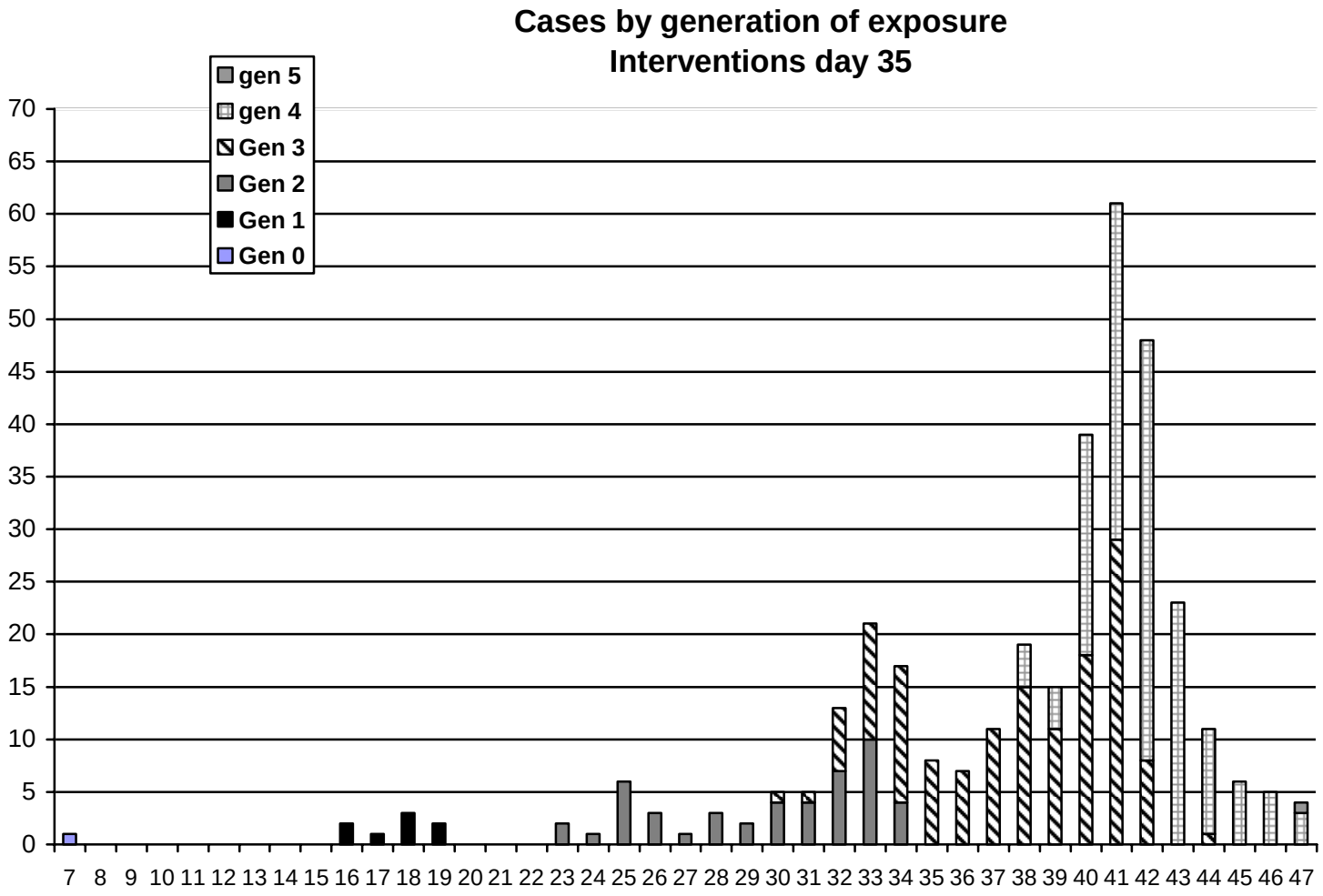
Cases by generation of exposure
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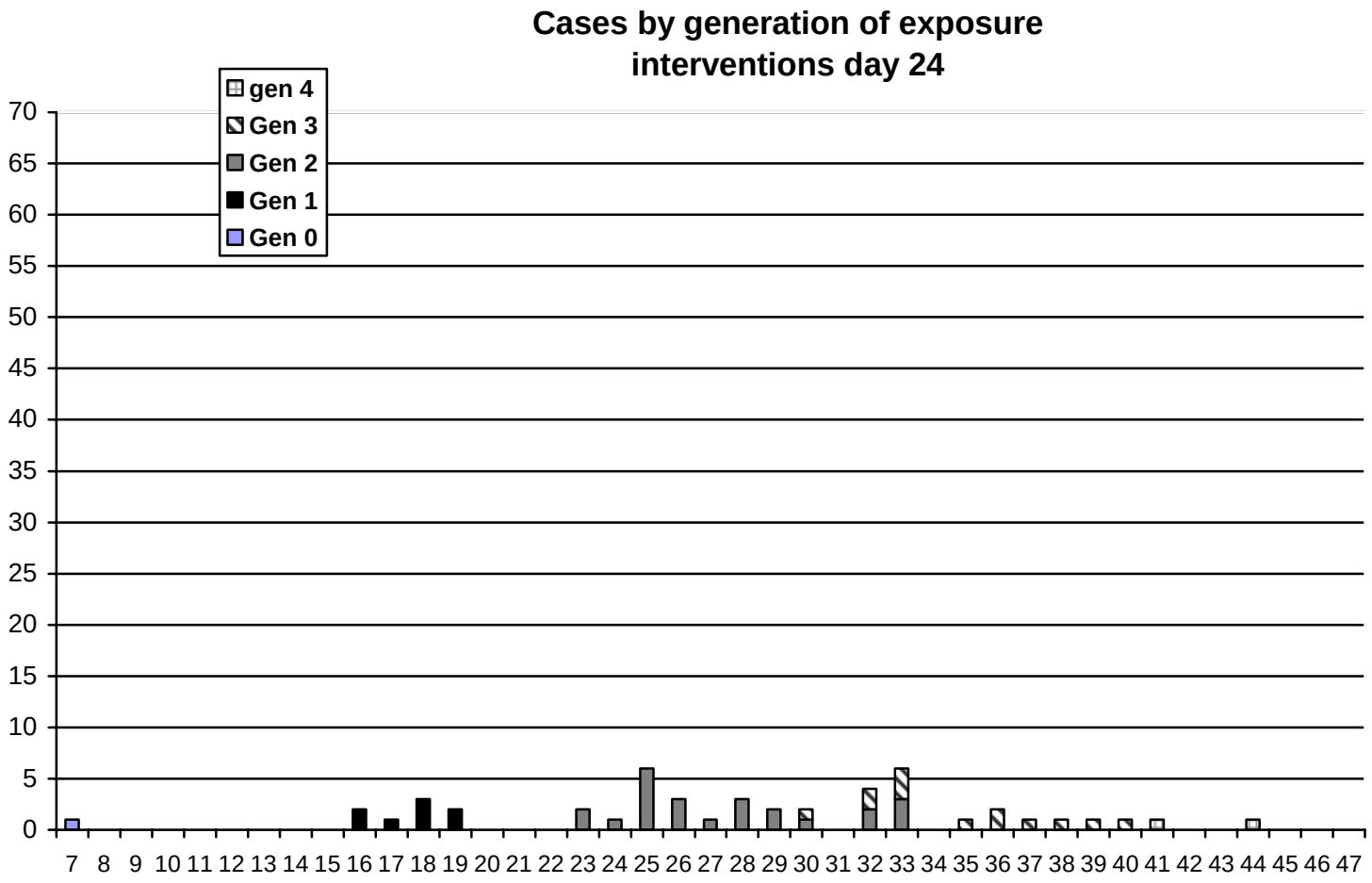
Cases by generation of exposure interventions day 24
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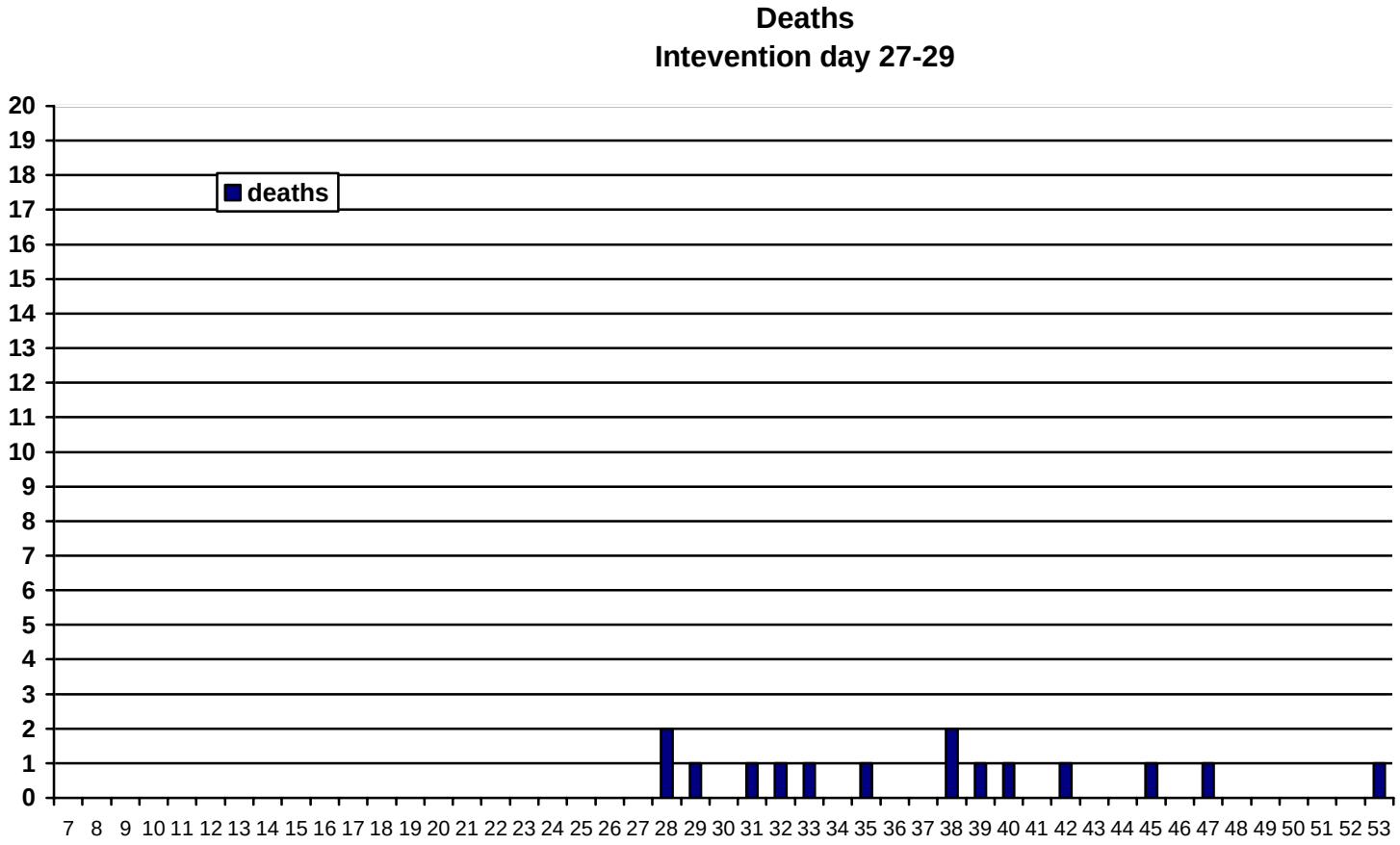
Deaths
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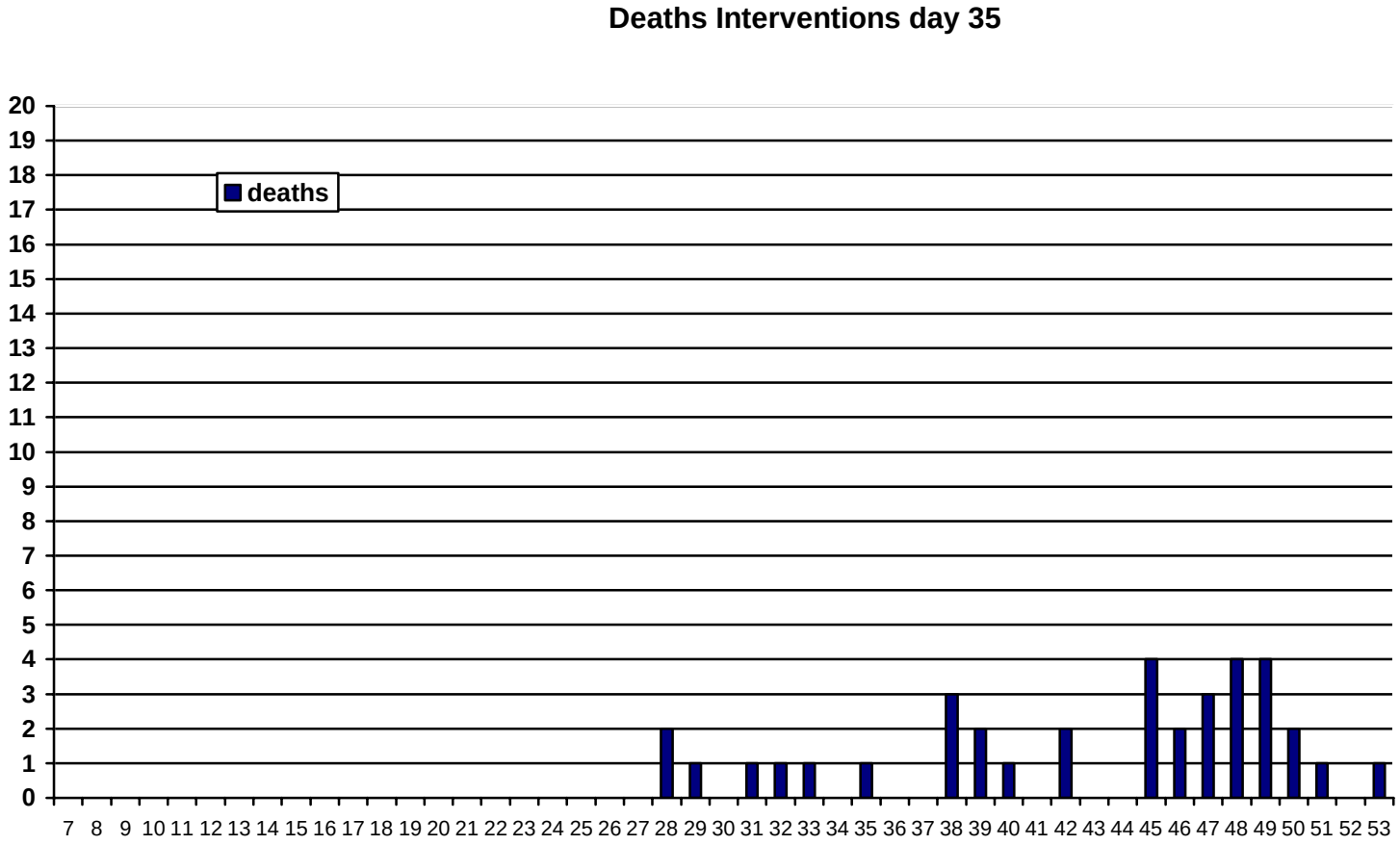
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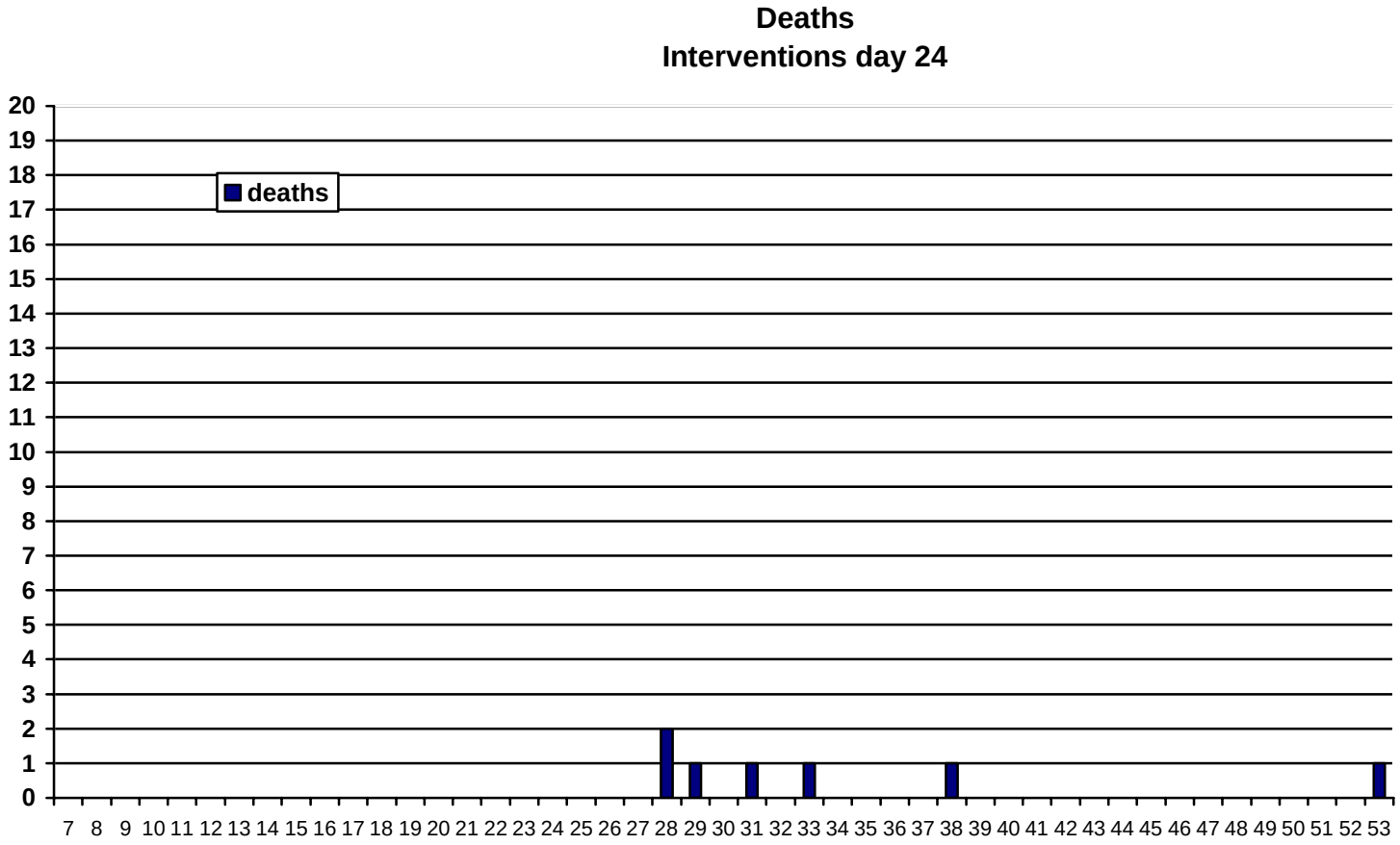
Deaths
Interventions day 24
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SARS Background Information

(from Dr David Kim, CDC)

Disease Overview

Severe Acute Respiratory Syndrome (SARS) is a viral respiratory illness caused by a coronavirus, called SARS-related coronavirus (SARS-CoV). In general, SARS begins with a high fever (temperature greater than 100.4°F [>38.0°C]). Other symptoms may include headache, an overall feeling of discomfort, and body aches. Some people also have mild respiratory symptoms at the outset. About 10 percent to 20 percent of patients have diarrhea. After 2 to 7 days, SARS patients may develop a dry cough. Most patients develop pneumonia. The overall case-fatality rate of approximately 10% can increase to >50% in persons older than age 60.

Transmission

The main way that SARS seems to spread is by close person-to-person contact. In the context of SARS, close contact means having cared for or lived someone with SARS or having direct contact with respiratory secretions or body fluids of a patient with SARS. Examples of close contact include kissing or hugging, sharing eating or drinking utensils, talking to someone within 3 feet, and touching someone directly. Close contact does not include activities like walking by a person or sitting across a waiting room or office for a brief time.

The virus that causes SARS is thought to be transmitted most readily by respiratory droplets (droplet spread) produced when an infected person coughs or sneezes. Droplet spread can happen when droplets from the cough or sneeze of an infected person are propelled a short distance (generally up to 3 feet) through the air and deposited on the mucous membranes of the mouth, nose, or eyes of persons who are nearby. The virus also can spread when a person touches a surface or object contaminated with infectious droplets and then touches his or her mouth, nose, or eye(s). In addition, it is possible that the SARS virus might spread more broadly through the air (airborne spread) or by other ways that are not now known.

Epidemiologic data suggest that infected persons do not transmit SARS-CoV before the onset of symptoms and that most transmission occurs late in the course of illness when patients are likely to be hospitalized. The lack of transmission before symptom onset and during early illness explains the infrequency of community transmission and the preponderance of hospital-associated transmission. [In areas characterized by extensive outbreaks, early SARS-CoV transmission occurred predominantly among healthcare workers,

patients, and visitors (these groups accounted for 18% to 58% of all SARS cases in the five countries with the largest outbreaks).]

Although evidence indicates that most patients do not transmit SARS-CoV efficiently, documentation of “super-spreaders” and “super-spreading events” shows that, in certain situations, the virus can be transmitted very efficiently.

Prevention and Treatment

No vaccines have yet been developed for SARS and no anti-viral treatment has been shown to be effective. CDC, the National Institutes of Health (NIH), the Food and Drug Administration (FDA) and academicians are developing protocols to assess antiviral drugs that show activity in vitro against SARS-CoV.

It is not yet clear whether persons who recover from SARS-CoV infection develop long-lasting protective immunity or whether they are susceptible to re-infection and disease, as is the case with other human coronaviruses.

Infection Control

Recommended infection control strategies for suspect patients (in flight, on ground, and/or during evaluation) and healthcare workers:

Suspect Patient

- Provide and place a surgical mask over the patient's nose and mouth. If masking the patient is not feasible, the patient should be asked to cover his/her mouth with a disposable tissue when coughing, talking or sneezing.

- Separate the patient from others as soon as possible (ideally by at least three feet).

Healthcare Workers

The optimal combination of personal protective equipment (PPE) for preventing transmission of SARS during aerosol-generating procedures has not been determined. PPE must cover the arms and torso, and fully protect the eyes, nose and mouth; additional PPE to protect all exposed areas of skin should be considered.

The following personal protective equipment is recommended for those present during aerosol-generating procedures on patients with SARS:

<u>Standard Precautions</u>

- For all contact with suspect SARS patients, careful hand hygiene is urged, including hand washing with soap and water; if hands are not visibly soiled, alcohol-based handrubs may be used as an alternative to hand washing.

- Eye protection consisting of goggles should be worn to protect the eyes from respiratory splash or spray. Goggles should fit snugly

around the eyes. A face shield may be worn over goggles to protect exposed areas of the face but should not be used as a primary form of eye protection for these procedures.

Contact Precautions

- A single isolation gown to protect the body and exposed areas of the arms should be worn. A disposable full-body isolation suit may be considered in this setting as it provides greater protection for the neck area; some suits also have an attached hood to cover the hair. Another alternative for providing full head, neck, face and respiratory protection is a disposable surgical hood with an attached face shield in combination with a disposable respirator. It is unknown whether covering exposed areas of skin or hair of the head and neck will further reduce the risk of transmission.

- A single pair of disposable gloves that provide a snug fit over the wrist should be worn. Gloves should be changed when evaluating another suspect patient.

Airborne Precautions

- Disposable particulate respirators (e.g. N-95, N-99, or N-100) should be used. These are sufficient for routine respiratory protection for airborne precautions and are the minimum level of respiratory protection for first responders/healthcare workers who are performing aerosol-generating procedures. Respiratory protection for aerosol-generating procedures must ensure that these responders are protected from exposure to aerosolized infectious droplets through breaches in respirator seal integrity.

Containment Strategies

A response to an outbreak of SARS may require coordination of federal, state, and local legal authorities to impose a variety of emergency public health and containment measures, at both the individual and community levels. These measures might include:

- Active surveillance of potential cases and their contacts.

- Isolation (separation and restriction of movement of persons with an infectious disease to stop the spread of infection).

- Quarantine (separation and restriction of movement of well persons who have been exposed to an infectious disease and are therefore potentially infectious).

Legal Authority

With regard to isolation and quarantine, legal preparedness is a key component of SARS preparedness and response. Experience from the 2003 SARS outbreak demonstrates how closely legal issues are intertwined with public health responses.
In the United States, the President signed an executive order on April 4, 2003, adding SARS to the list of quarantinable communicable diseases. This executive order provides CDC with the legal authority to implement isolation and quarantine measures for SARS, as part of its transmissible disease-control measures. As a result, U.S. public health officials need to be knowledgeable about the legal authorities and statutes that exist at the local, state, and federal levels for enforcing these measures. In general:

- The *federal government* has primary responsibility for preventing the introduction of communicable diseases from foreign countries into the United States, and

- *States and local jurisdictions* have primary responsibility for isolation and quarantine within their borders.

The authority to compel isolation and quarantine is derived from each state's inherent "police power," the authority of all state governments to enact laws and promote regulations to safeguard the health, safety, and welfare of its citizens. By statute, the Department of Health and Human Services (HHS) Secretary may accept state and local assistance in the enforcement of federal quarantine and other health regulations and may assist state and local officials in the control of communicable diseases. Because isolation and quarantine are "police power" functions, public health officials at the federal, state, and local levels may occasionally seek the assistance of their respective law enforcement counterparts to enforce a public health order.

Three issues related to legal authorities that might be required to contain SARS are essential to ensuring preparedness for a rapid response:

1. Prior identification of relevant legal authorities, persons, and organizations empowered to invoke and enforce such authorities.

2. Public trust and compliance with government directives, which includes due process protections to treat individuals with dignity and fairness.

3. Protection of personnel required to implement and enforce the measures.

The Re-emergence of SARS

No one knows if SARS-CoV will re-emerge. Since most other respiratory viruses are seasonal with outbreaks in fall, winter, or spring that spontaneously resolve, it is possible that SARS may also be seasonal and spread more efficiently if it recurs during the respiratory virus season. Recurrence of SARS, or concern about SARS, during respiratory virus season will likely challenge the healthcare and public health communities with large numbers of SARS-like illnesses.

History of SARS

November 16, 2002 - The first case of SARS involved a man, in southern China's Guangdong province on the Pearl River Delta. This man was a "super-infector" who subsequently infected four others, but strangely not his four adult children who lived with him. By the end of November, the deadly outbreak of pneumonia carried on in China, probably linked to SARS (WHO). By this time, the disease had killed at least 34 people in China in the south and three in Beijing. Hundreds had been infected. By the end of December, Guangdong province had reported at least 300 cases.

January, 2003 - A shrimp salesman carried the disease to Guangzhou. It spread through three hospitals in the city, including the Sun Yatsen Memorial Hospital where Dr. Liu Jianlun, 64, a specialist in respiratory diseases, helped to treat the victims.

February 11, 2003 - SARS first came to global attention when Chinese officials informed WHO of the occurrence of 305 cases of atypical pneumonia and 5 deaths in Guangdong Province since November 2002.

February 21, 2003 – Dr. Liu travels from Guangdong to Hong Kong and spent the night in a hotel there. During the next two days, he developed increasingly severe respiratory symptoms and was hospitalized in a Hong Kong hospital, where he died from his illness. His one-night stay in a Hong Kong hotel led to infection by yet unexplained mechanisms in several other guests, who subsequently traveled to and seeded SARS outbreaks in Vietnam, Singapore, Hong Kong, and Canada.

In these areas, local spread was initiated and maintained in hospitals, where healthcare personnel, patients, and visitors – unaware of the emergence of a new disease – acquired SARS-CoV from persons with unrecognized infection.

During March-May, the spread of the virus from Guangdong to other parts of China established additional foci of infection, such as Beijing and Taiwan.

Once SARS was recognized in these locations and widespread community transmission was noted in several outbreak sites, the spread of SARS-CoV was controlled by aggressive community infection control measures including active case finding, contact tracing and monitoring, travel restrictions, and quarantine and other containment strategies. These measures were implemented in many geopolitical jurisdictions and involved intense, sustained collaboration among institutions and persons beyond the traditional public health infrastructure.

Areas with high transmission rates experienced severe economic consequences and social disruption rivaling that seen in other global epidemics (e.g., plague) of centuries past.

March 14, 2003 - CDC launched an emergency public health response and established national surveillance for SARS to identify case-patients in the United States and discover if domestic transmission was occurring.

April 4, 2003 - President Bush signed an executive order listing SARS as a quarantinable disease, thus granting the authority to isolate and quarantine suspect individuals or groups.

April 11, 2003 - One month after declaring SARS a global threat to health, Dr David L. Heymann, Executive Director of WHO's communicable disease programs has said, "This appears to be the first severe and easily transmissible new disease to emerge in the 21st century. Though much about the disease remains poorly understood, including the exact identity of the causative virus, we do know that it has features that allow it to spread rapidly along international air travel routes."

April 20, 2003 - The World Health Organization (WHO) accused China of under-reporting the amount of SARS cases in that country. The Minister of Health in China and the Mayor of Beijing were dismissed from their positions due to the sharp increase of SARS cases.

July 2003 - At this point, a total of 159 suspect and 33 probable cases had been reported in the United States. Of the 33 probable cases, only 8 had laboratory evidence of SARS-CoV infection. All of the 8 cases with documented SARS-CoV infection occurred in persons who
had traveled to SARS-affected areas. One of these case-patients might have acquired infection either abroad or from her spouse, who was one of the other 7 SARS-CoV positive cases. Except for this one person with possible transmission from a household contact, no evidence of SARS-CoV infection was detected by

serologic testing of household contacts of SARS cases or of healthcare workers who cared for SARS patients.

September 8, 2003 – A draft *Memorandum of Understanding between the Department of Health and Human Services (HHS) and the Department of Homeland Security (DHS)* is introduced "to establish a framework for cooperation to enhance the Nation's preparedness against the introduction, transmission, and spread of communicable disease from foreign countries into the States and possessions of the United States."

October 6, 2003 - CDC published *Guidelines for Responding to Arriving Ill Travelers at U.S. Ports of Entry* (Draft) "to delineate and standardize illness response procedures applicable to arriving international travelers who are suspected to be infected with or to have been exposed to communicable disease of public health significance."

October 16, 2003 – *Public Health Guidance for Community-Level Preparedness and Response to Severe Acute Respiratory Syndrome (SARS)* is published by the CDC on its SARS web site "to assist local and state public health and healthcare officials in their preparations for a possible reemergence of SARS during the approaching respiratory disease season."

November, 2003 – CDC Division of Global Migration and Quarantine and Oak Ridge Institute for Science and Education (ORISE) conduct facilitated discussions with emergency responders at select CDC Quarantine Station sites.

SARS Case Definition

NOTE: The case definition for SARS is subject to change, particularly with regard to travel history, as illness is reported in new geographic areas. The most current definition can be found at

http://www.cdc.gov/ncidod/sars/casedefinition.htm

The version provided here was excerpted from this web site on 4 November, 2003.

SARS Glossary of Terms

(from Dr David Kim, CDC)

A ***case*** of SARS-CoV disease is a person with an illness that is clinically compatible with the features of SARS described previously and with laboratory evidence of SARS-CoV infection.

A ***contact*** is a person who has been exposed to a SARS case during the infectious period.

A ***close contact*** is a person who has cared for or lived with someone with SARS or had direct contact with respiratory secretions of body fluids of a patient with SARS. Examples of close contact include kissing or hugging, sharing eating or drinking utensils, talking to someone within 3 feet, and touching someone directly. Close contact does not include activities such as walking by a person or sitting across a waiting room or office for a brief time.

Contact tracing involves the identification, evaluation, counseling, and monitoring of persons who may have been exposed to a patient with SARS-CoV infection. Contact tracing may result in strict or modified quarantine and regular monitoring for evidence of illness.

Community containment measures refer to the separation of infected or exposed persons from non-infected persons by use of isolation, quarantine, or other restrictions on movement and activities. Isolation and quarantine are common practices in public health, and both aim to control exposure to infected or potentially infected persons. Both, may be used voluntarily or compelled by public health authorities and can be applied on an individual or population level.

Isolation refers to the separation of persons with a specific contagious illness from contact with susceptible persons and the restriction of their movement to contain the spread of that illness. Isolation usually occurs in a hospital but can be in a home or dedicated isolation facility. Isolation is used routinely in hospital and healthcare settings to reduce the transmission of infections to uninfected patients.

Quarantine refers to the separation and restriction of movement of well persons who may have been exposed to an infectious agent and may be infected but are not yet ill. Quarantine usually occurs in the home but can be in a dedicated facility or hospital. The term “quarantine” can also be applied to restrictions of movement into or out of buildings, other structures, and public conveyances. States generally have authority to invoke and enforce quarantine within their jurisdictions, although quarantine laws vary among states. CDC is also empowered to detain, medically examine, or conditionally release persons

suspected of carrying certain communicable diseases at points of arrival in and departure from the United States or across state lines.

Infection control measures practiced by healthcare personnel in healthcare facilities decrease the risk for transmission and acquisition of infectious agents through proper hand hygiene, scrupulous work practices, and use of personal protective equipment, such as masks, gloves, gowns, and eye protection. The types of infection control measures are based on how an infectious agent is transmitted and include standard, contact, droplet, and airborne precautions (http://www.cdc.gov/ncidod/hip/ISOLAT/Isolat.htm).

Standard precautions are work practices required for the basic level of infection control. They center on proper hand hygiene and also include use of protective barriers and appropriate handling of clinical waste.

Contact precautions are work practices designed to reduce the risk of transmitting infectious agents by direct or indirect contact with an infectious person. Direct contact transmission involves a direct body surface-to body surface contact and physical transfer of infectious agents between an infected person and a susceptible host. Indirect-contact transmission involves contact of a susceptible host with a contaminated intermediate object, such as contaminated instruments or dressings or contaminated hands that are not washed or gloves that are not changed between patients.

Droplet precautions are designed to reduce the risk of droplet transmission of infectious agents. Droplet transmission occurs when droplets containing infectious agents generated by an infectious person are propelled a short distance through the air (e.g., by coughing, sneezing, or talking) and deposited on the conjunctivae or mucous membranes of the mouth or nose of a susceptible person.

Airborne precautions are designed to reduce the risk of airborne transmission of infectious agents. Airborne transmission occurs by dissemination of nuclei of evaporated droplets that may remain suspected in the air for long periods of time. Microorganisms carried in this way can be dispersed by air currents and may be inhaled by a susceptible host in the same room or over a longer distance from the source patient, depending on environmental factors. An airborne infection isolation room (AIIR) that has negative pressure relative to the surrounding area is required for implementation of airborne precautions.

In this document, ***healthcare worker*** and ***healthcare personnel*** refer to any employees who have close contact (i.e., within 3 feet) of 1) patients, 2) patient-care areas (e.g., patient rooms, procedure areas), or 3) patient-care items (e.g., linens and other waste).

Resources

1) http://lapublichealth.org/acd/SARS.htm
Los Angeles County SARS information

2) http://www.cdc.gov/ncidod/sars/

CDC SARS web site. Includes basic clinical and epidemiological information on SARS, as well as a draft Public Health response plan. (http://www.cdc.gov/ncidod/sars/sarsprepplan.htm)

3) http://www.who.int/csr/sars/en/

WHO SARS web site

4) http://www.hc-sc.gc.ca/pphb-dgspsp/sars-sras/index.html

Health Canada SARS website

Los Angeles County Public Health
SARS Tabletop Exercise
12/3/2003
Participant Evaluation Form

Facilities

	Low		Avg.		High
	1	2	3	4	5
1. Classroom the right size for number of participants?					
2. Classroom comfort—heat, air, lights, seating . . .					
3. Hear facilitator(s)?					

Tabletop Material

	Low		Avg.		High
	1	2	3	4	5
1. Tabletop material user friendly?					
2. Quality and quantity of materials adequate?					
3. Tabletop well structured?					
4. Material delivered at appropriate level?					

Facilitator(s)

	Low		Avg.		High
	1	2	3	4	5
1. Knowledgeable?					
2. Understandable?					
3. Motivated and interesting?					
4. Concerned that you understood the material?					

What was the most useful thing you learned today?

Would you be willing to participate in a similar exercise in the future?

Comments: