

CONNECTICUT HOSPITAL ADMISSIONS SYNDROMIC SURVEILLANCE (HASS)

Zygmunt F. Dembek¹, Myrth Myers¹, Kenneth Carley²
and James L. Hadler³

¹Epidemiology Program, Connecticut Department of Public Health, Hartford, CT

²AIDS Epidemiology Program, Connecticut Department of Public Health, Hartford, CT

³Bureau of Public Health Science, Connecticut Department of Public Health, Hartford, CT

BACKGROUND

- Daily Hospital Admissions Syndromic Surveillance (HASS) initiated with events of September 11, 2001
- Each of Connecticut's 31 acute care hospitals required to report (fax or e-mail) the proceeding day's non-scheduled admissions by disease category
- In late October, the system was modified to report 11 different syndrome categories: pneumonia, hemoptysis, respiratory, neurologic, nontraumatic paralysis, sepsis and nontraumatic shock, fever with rash, fever of unknown cause, gastrointestinal, skin infection, and clusters of illness

METHODS

- The weekly number of admissions statewide for each syndrome per million population were tallied and the mean and range were calculated from November 2001 through July 2002
- A suspected outbreak was defined as a “spike” in the occurrence of any given syndrome statewide or in a hospital in excess of the upper 95% confidence limit of the cumulative baseline experience up to that time

RESULTS

The average number of unscheduled admissions per million population per week and range per week for each syndrome was:

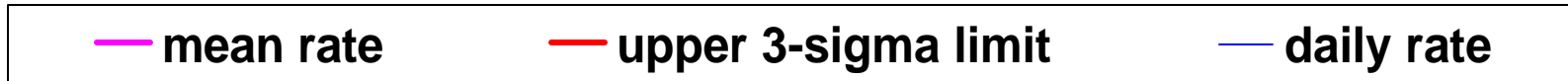
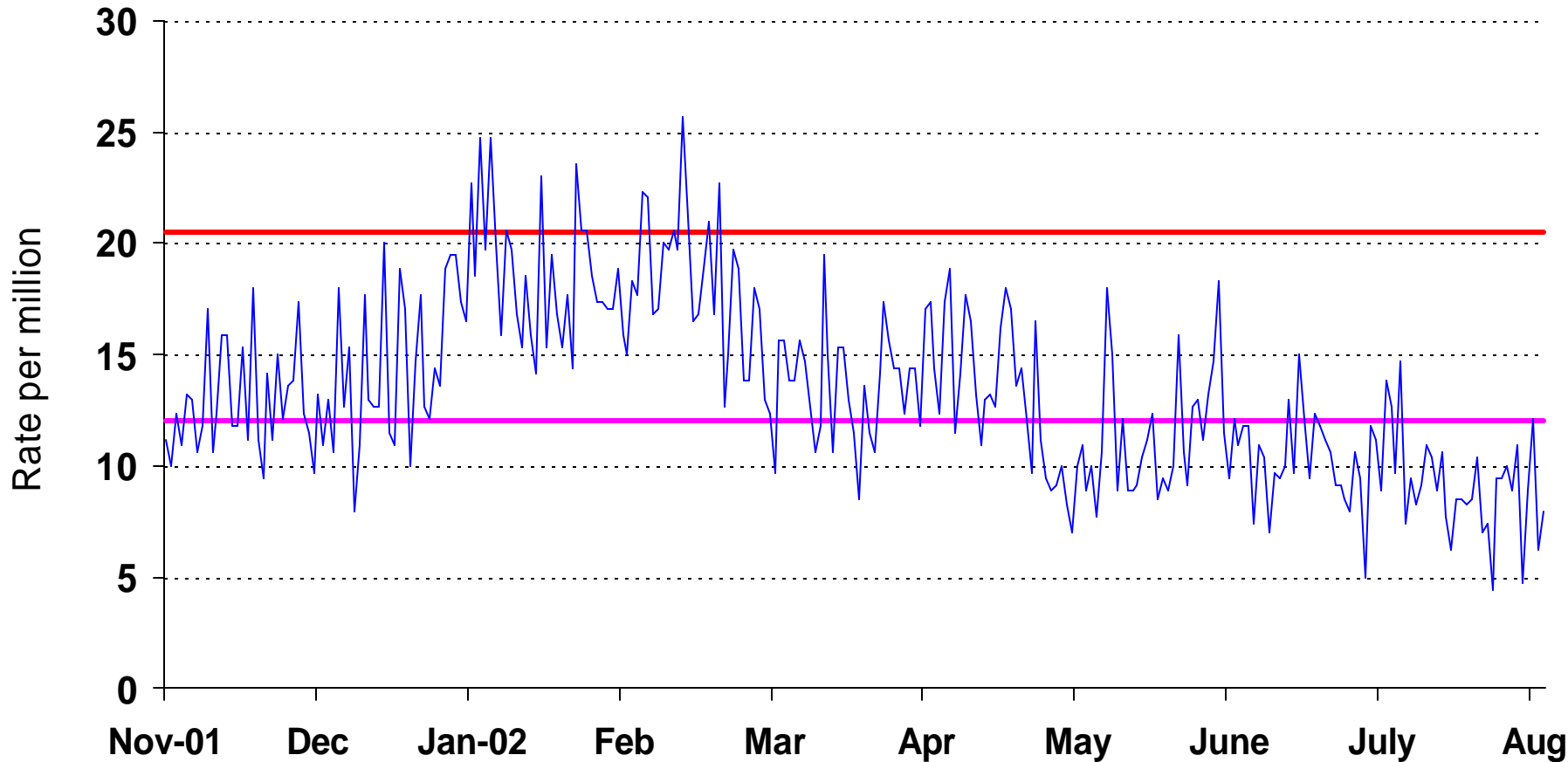
- Pneumonia 93.2 (35-147)
- Hemoptysis 1.2 (0.-3.2)
- Respiratory 12.5 (1.2-21.8)
- Neurologic 2.2 (0.3-5.3)
- Nontraumatic paralysis 1.2 (0-4.1)
- Sepsis and nontraumatic shock 17.4 (12-22)
- Fever with rash 0.9 (0.-2.1)
- Fever of unknown cause 10.3 (5.6-16.2)
- Gastrointestinal 26.8 (11-37)
- Skin infection 0.1 (0.-0.9)
- Clusters of illness 0.4 (0.-3.5)

RESULTS

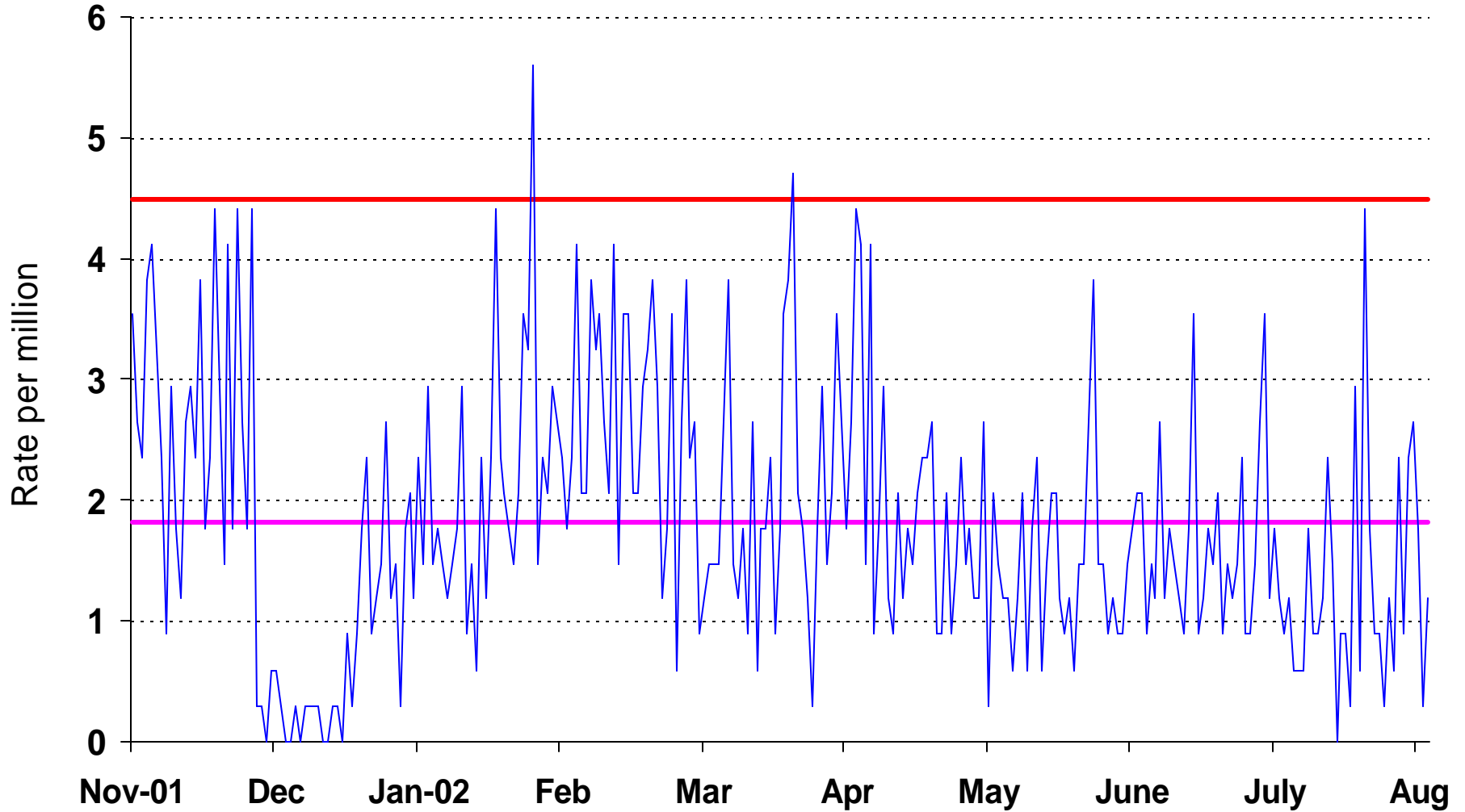
A total of 18 possible peaks were detected, including:

- Pneumonia - 9 (January - February)
- Respiratory - 2 (February - March)
- Gastrointestinal - 2 (January and March)
- Hemoptysis - 1 (January)
- Paralysis - 1 (January)
- Skin Infection - 3 (April - June)

Pneumonia Cases



Respiratory Cases

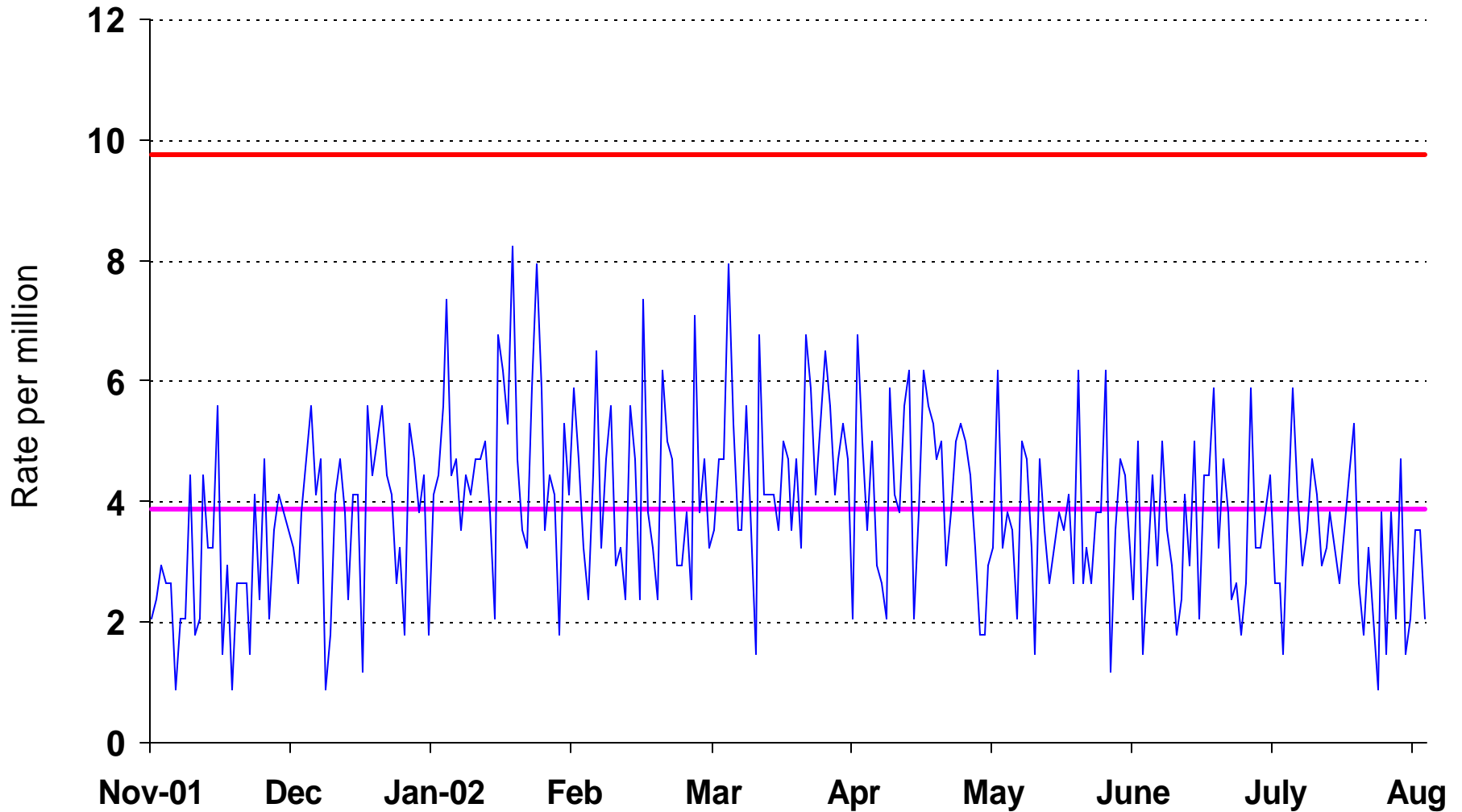


— mean rate

— upper 3-sigma limit

— daily rate

Gastrointestinal Cases

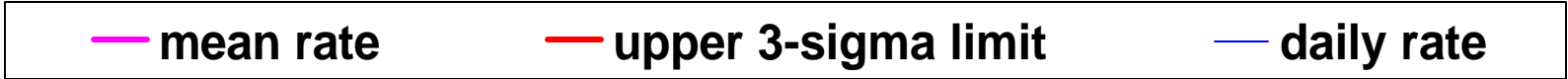
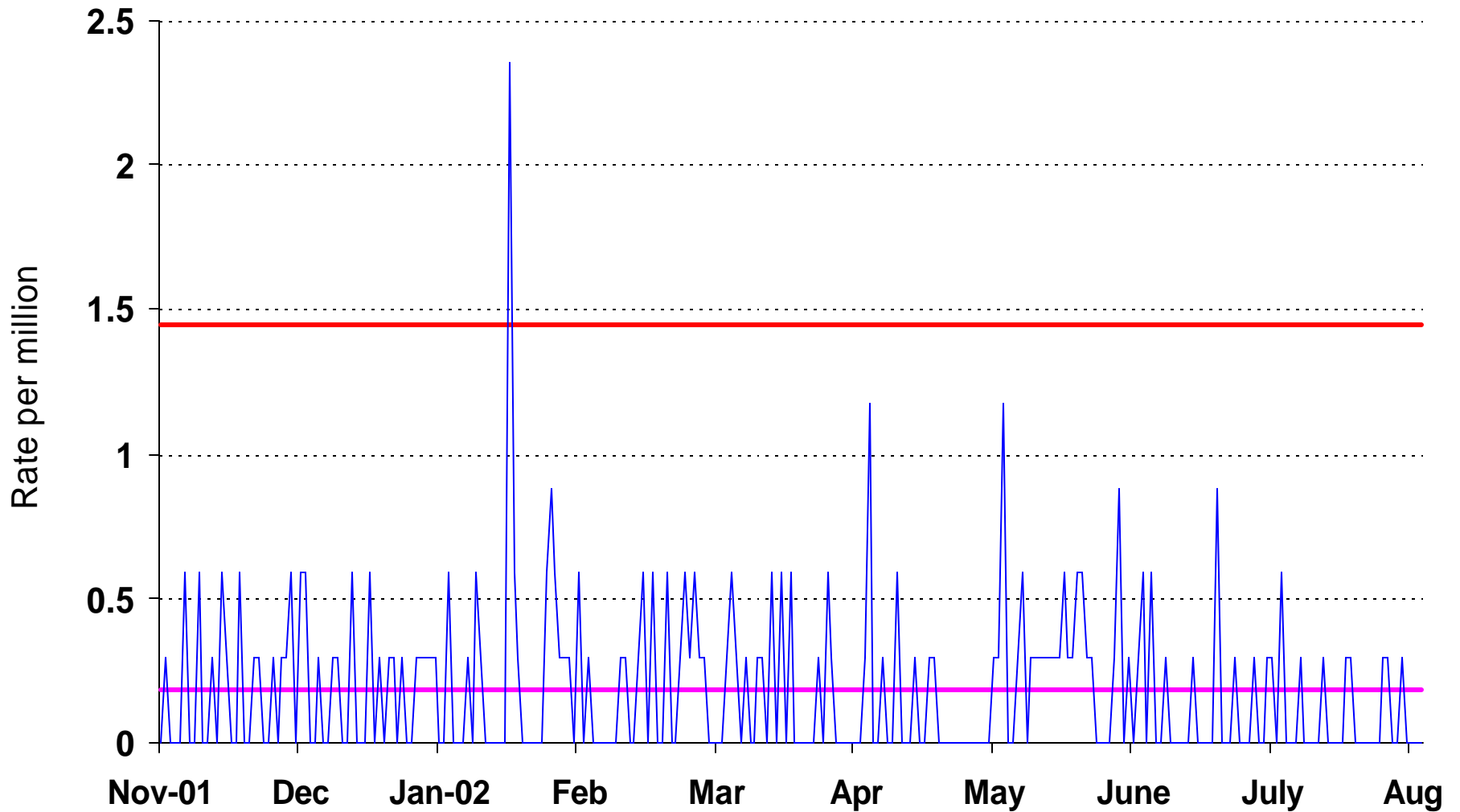


— mean rate

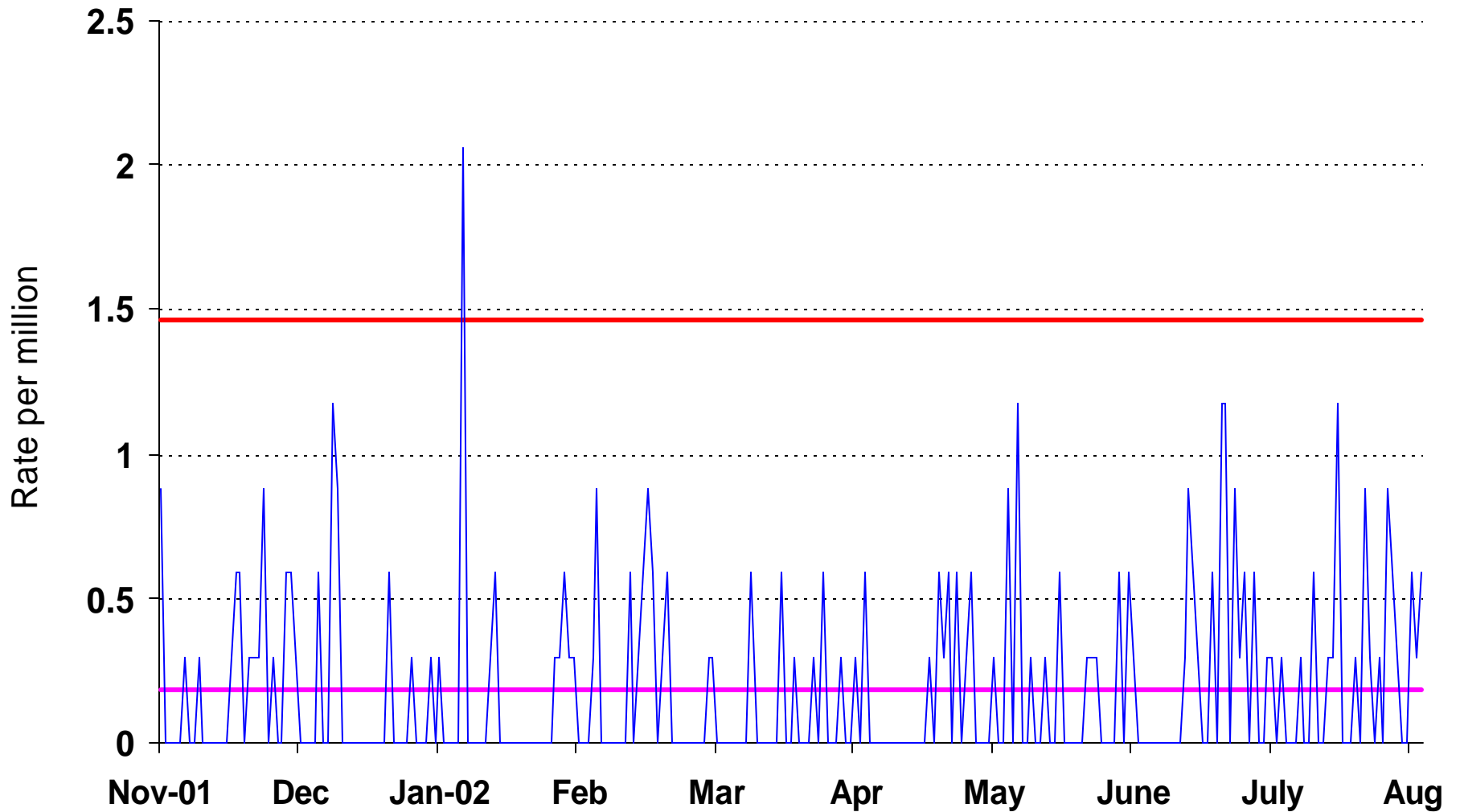
— upper 3-sigma limit

— daily rate

Hemoptysis Cases

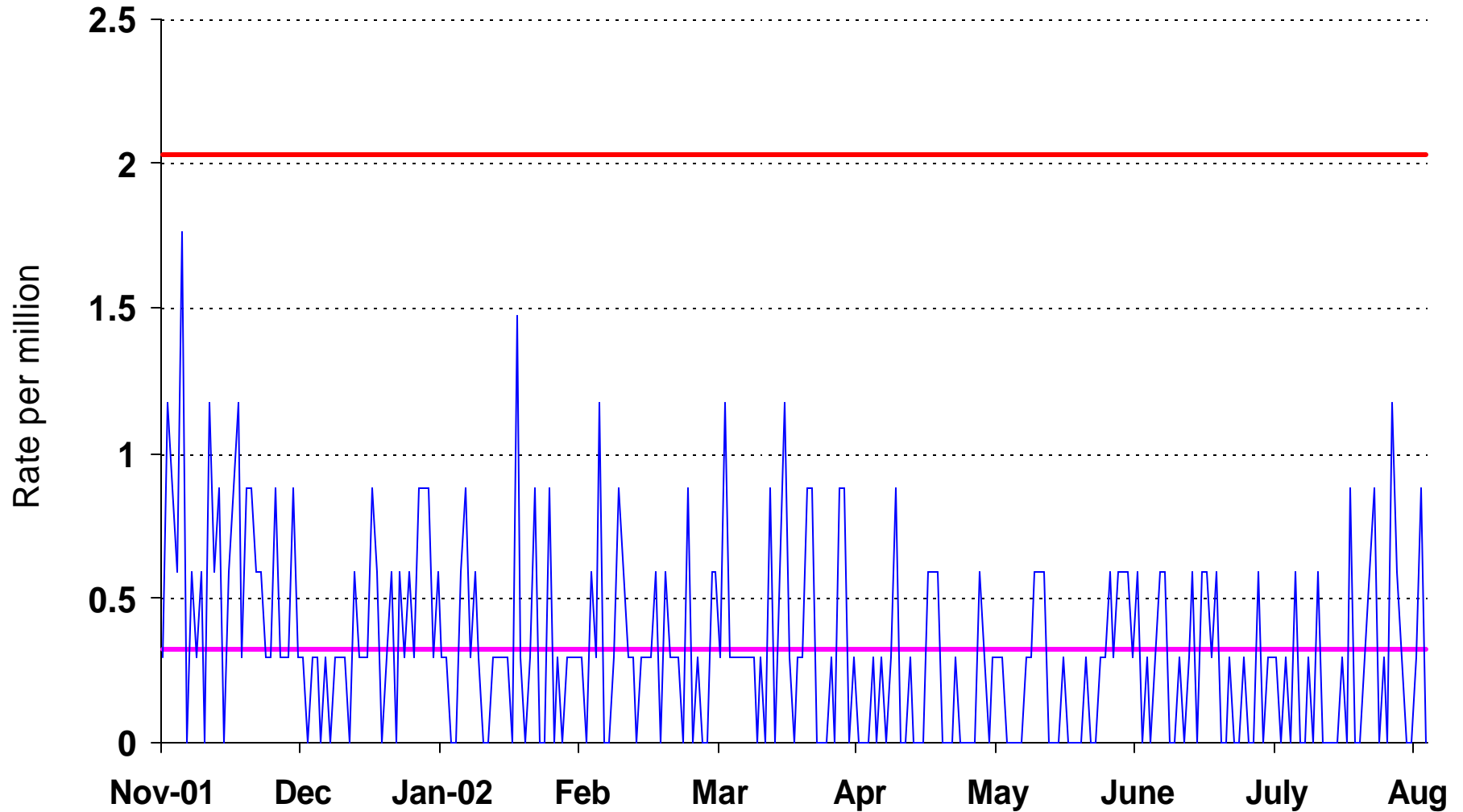


Nontraumatic Paralysis Cases



— mean rate — upper 3-sigma limit — daily rate

Neurologic Cases

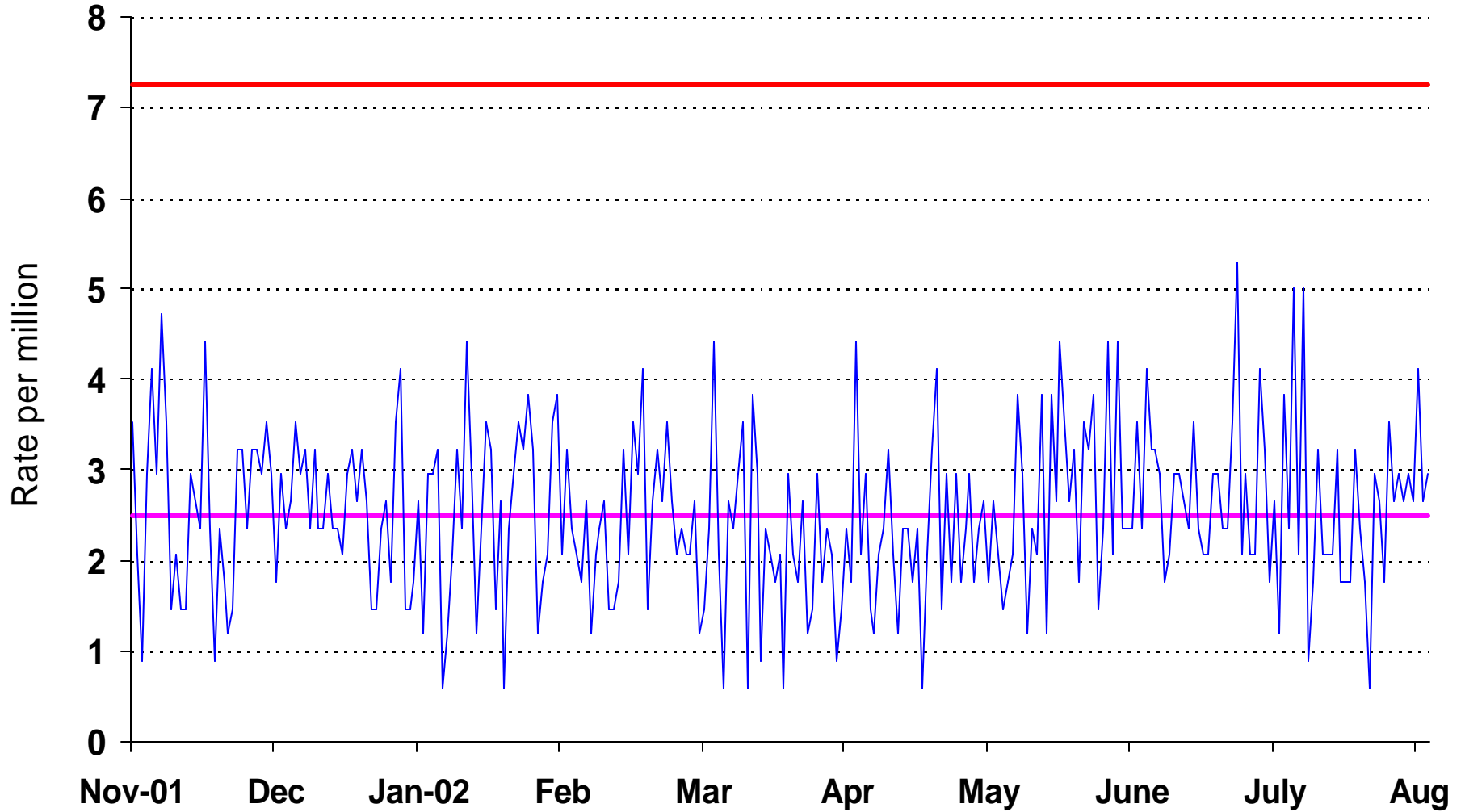


— mean rate

— upper 3-sigma limit

— daily rate

Sepsis Cases

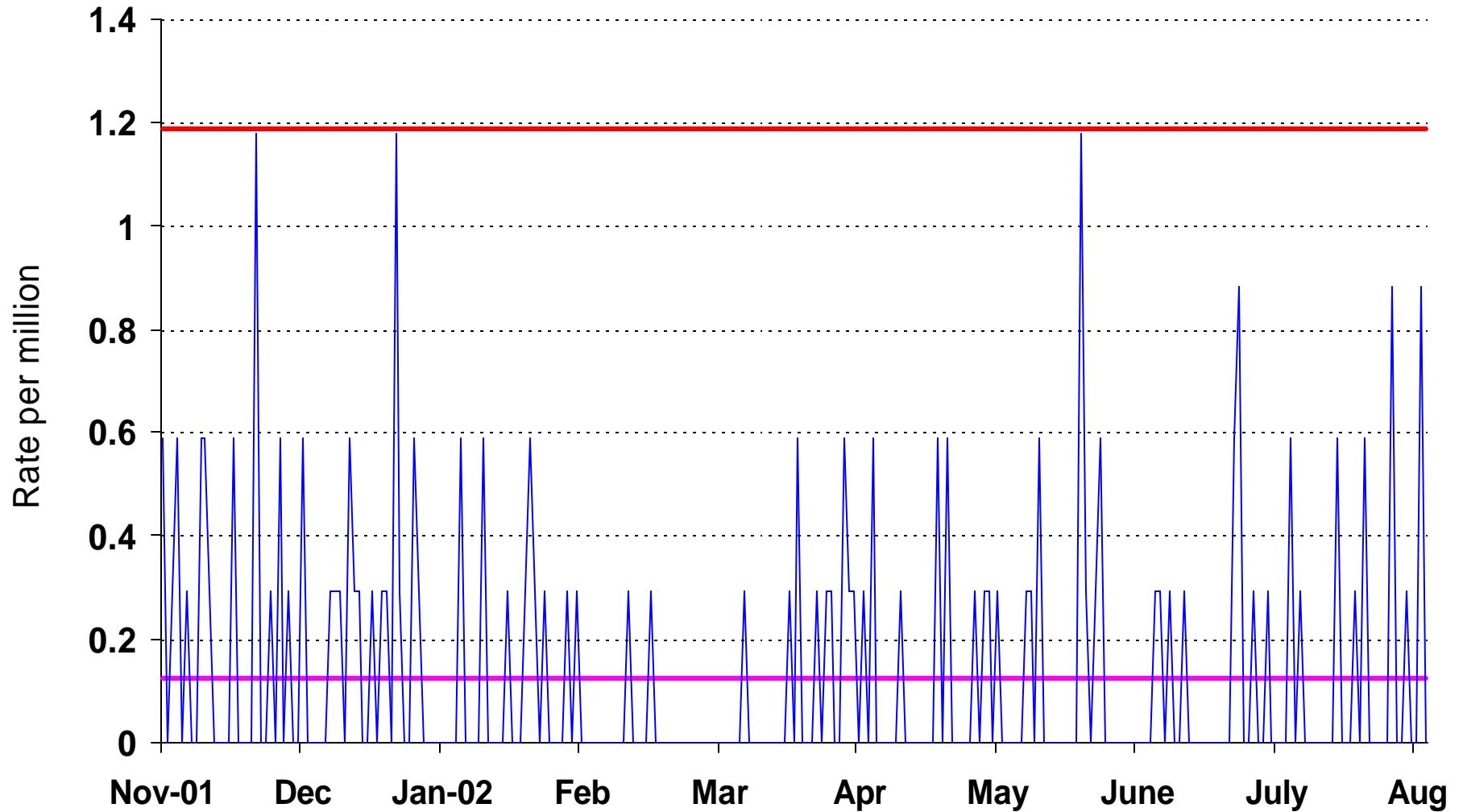


— mean rate

— upper 3-sigma limit

— daily rate

Fever and Rash Cases

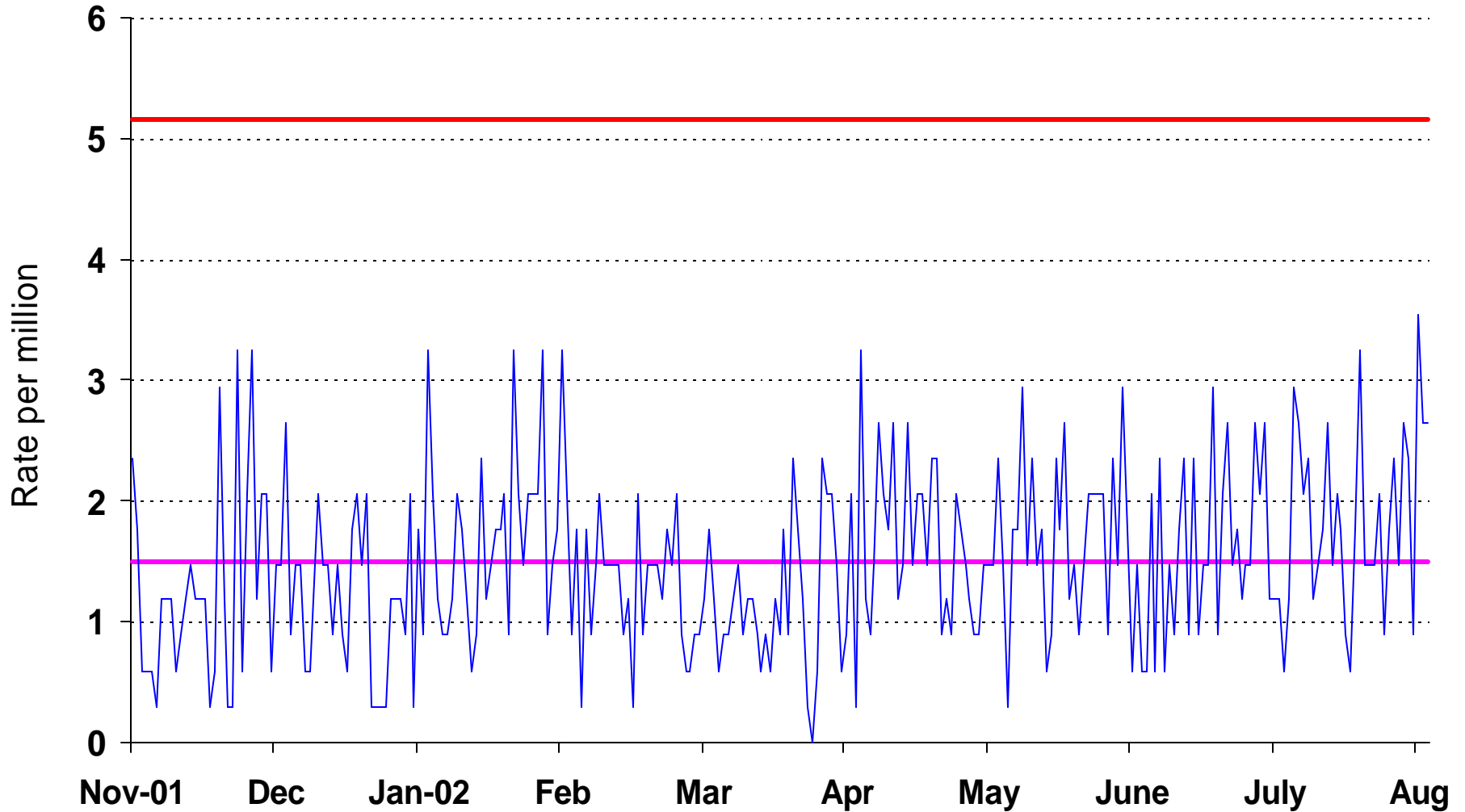


— mean rate

— upper 3-sigma limit

— daily rate

Fever of Unknown Origin Cases

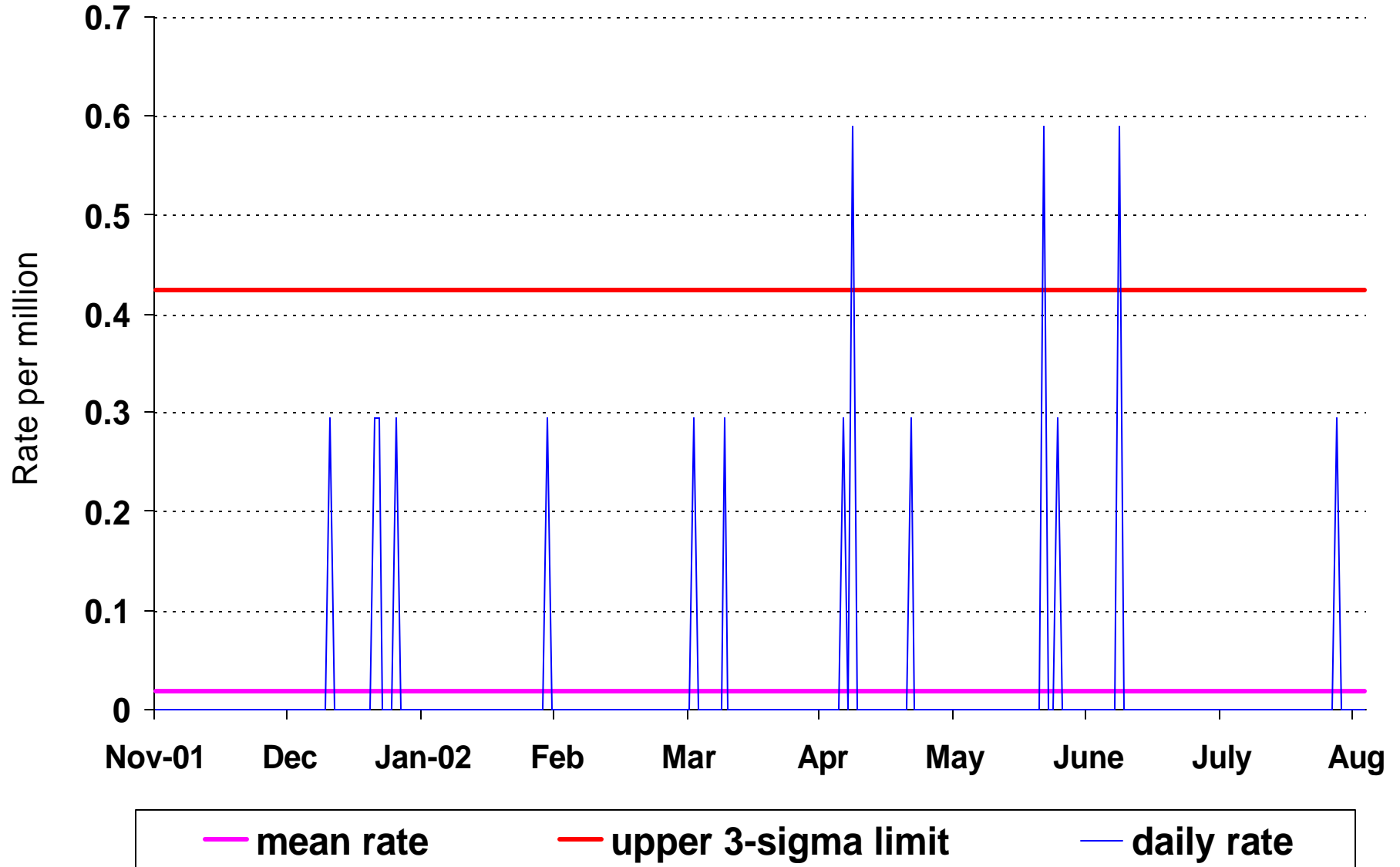


— mean rate

— upper 3-sigma limit

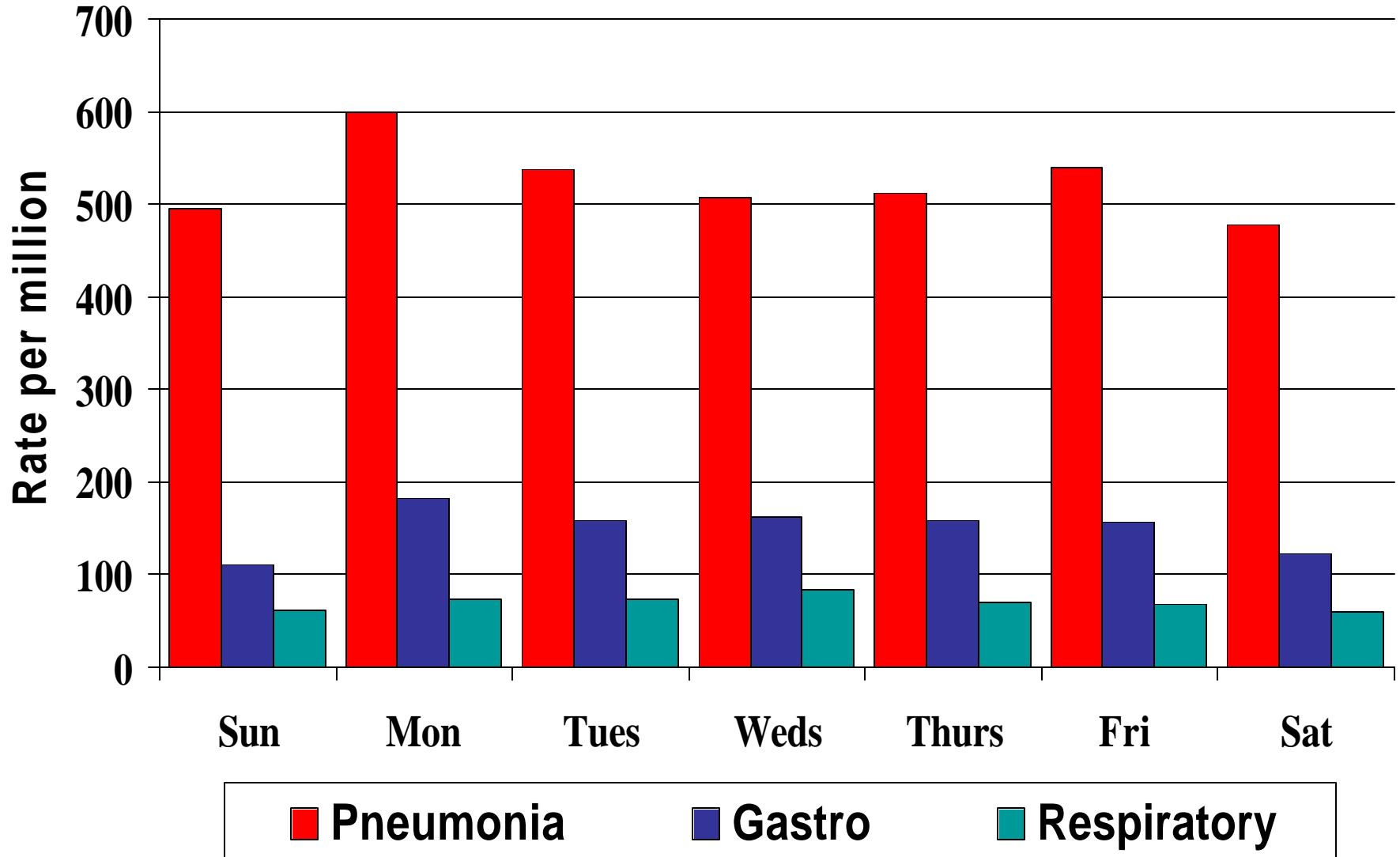
— daily rate

Skin Infection Cases



Admission Rates by day of week

(data from November 1, 2001- July 31, 2002)



CONCLUSIONS

- A hospital based admissions system was able to be rapidly established and maintained for Connecticut's 31 acute care hospitals
- Baseline weekly hospital admission rates were established and are low enough to be sensitive to moderate increases in the rate of admission
- Admissions for pneumonia, gastrointestinal illness and sepsis were the most common, and admissions for fever with rash, skin infection and meningitis were rare
- No outbreaks of illness were detected, although increases in rates of admission were seen for pneumonia and respiratory illness during January through March
- Comparison with similar data from other systems and data validation is needed to better determine the ongoing utility of this system