

SARS Epidemic in the Press

To the Editor: On March 12 2003, the World Health Organization (WHO) issued a global alert regarding severe acute respiratory syndrome (SARS) in Vietnam, Hong Kong, and China's Guangdong Province. Three days later, for the first time in its history, WHO recommended postponing nonessential travel to the affected areas and screening airline passengers (1). These initiatives, together with the awareness of the modes transmission of the coronavirus associated with SARS (SARS-CoV), led to extensive press coverage.

To describe the extent of this coverage in Italy and to identify the events that prompted peak coverage, we reviewed the five Italian daily newspapers with the highest circulation (2) from March 12 to March 30. The articles were identified by hand search (reading headlines, subheads, and titles) and were classified according to the publication date and page number. We assigned one point to full articles and to front-page articles or headlines and half a point to short articles. We also reviewed all national newspapers for articles published before the travel advisory (March 12–15)(Figure).

Before the travel advisory, no articles were published in the five newspapers, whereas on March 14, one article was published in a smaller newspaper ("Osservatore Romano," the Vatican newspaper). On March 16 (the day after the advisory), six articles appeared in the five newspapers; through May 31, a total of 750 articles were published. The proportion of articles that appeared on the front-page was 9.6%, although this percentage was higher early in the study (50%) than at the time of absolute peak coverage (12%).

After the first wave of articles in mid-March, several peaks occurred until mid-April. The events prompting

these peaks were identified by determining the most frequently covered topics, specifically: the death of Carlo Urbani, the Italian WHO officer who identified the disease in Hanoi; the first two probable cases in Italy; the death of a suspected case in Naples; and the press conference announcing the first meeting of the Italian National Task Force. The highest peak occurred on April 23, after the announcement that the number of cases had reached 4,000 and that a vaccine would not be available anytime soon. In the days after the peak, coverage remained quite high, in association with the definition of SARS as a "global threat" by WHO and the twofold increase in the number of probable cases in Italy. The high press coverage was followed by an overall decrease, although small peaks occurred in association with the conflicts among European Ministries

on airport measures, increased quarantine measures in China, and the identification of the civet cat as a probable source of SARS-CoV. Coverage tended to be greater on weekends, probably because political stories constitute less competition for space on these days.

Evidently, the daily newspaper coverage of SARS has been quite extensive in Italy, especially in the aftermath of WHO alerts and statements by the Ministry of Health regarding new cases and more stringent control measures. During outbreaks of infections, both the media and the public are often criticized for overreacting, yet public concern over serious health hazards is essential in guiding prevention activities (3–5) and in deciding whether to adopt measures that could place restrictions on civil rights, such as quarantine (6). Although we did not evaluate the

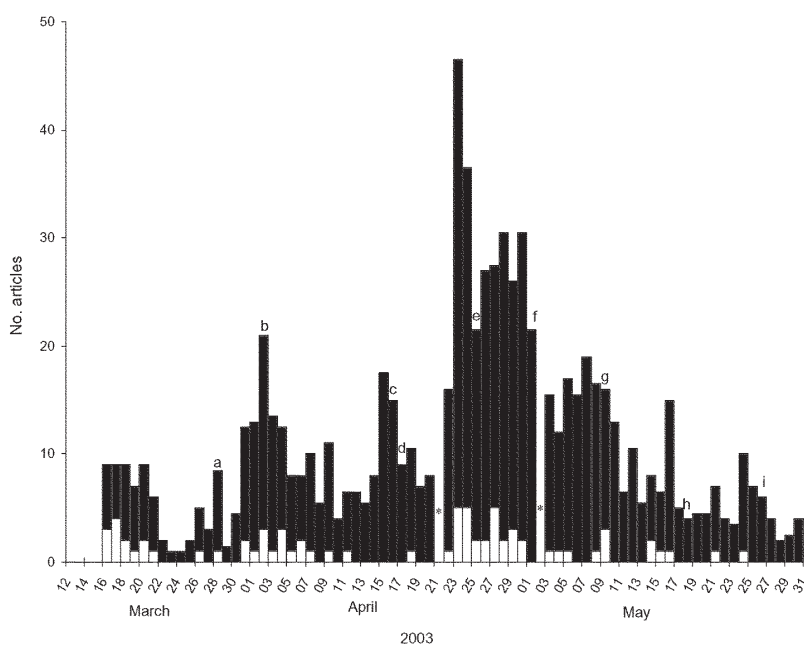


Figure. Number of articles on SARS published in the five newspapers with the highest nationwide circulation in Italy, by date of publication; March 15 to May 31, 2003. The white area of the bars represents the number of articles or headlines appearing on the front page. An asterisk indicates days on which newspapers were not published (Easter and May 1). The World Health Organization (WHO) global alert was March 12 and the WHO travel advisory was March 15. a, death of Carlo Urbani; b, first 2 probable cases in Italy; c, task force press conference; d, death of suspected case in Naples; e, WHO warning of "global threat"; f, two-fold increase of probable cases in Italy; g, European conflict on airport measures; h, increased quarantine measures in China; i, Civet cat identified as probable source.

quality of risk-communication of the journalists or of the experts quoted in the articles, wide press coverage of the WHO global alert may have contributed to public-health bodies' taking action towards containing the epidemic.

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References

1. World Health Organization. WHO recommended measures for persons undertaking international travel from areas affected by severe acute respiratory syndrome (SARS) *Wkly Epidemiol Rec* 2003;78:97-9.
2. Prima Comunicazione; May 2003. n. 329. p. 176.
3. Sandman PM, Lanard J. Fear is spreading faster than SARS and so it should! [cited April 28, 2003]. Available from: URL: www.psandman.com/col/SARS-1/htm
4. Covello V, Peters RG, Wojtecki JG, Hyde RC. Risk communication, the West Nile virus epidemic, and bioterrorism: responding to the communication challenge posed by the intentional or unintentional release of a pathogen in an urban setting. *J Urban Health* 2001;78:382-91.
5. CDCynergy emergency risk communication: your guide to effective emergency risk communication planning. Atlanta, GA: U.S. Centers for Disease Control and Prevention, 2003. [cited September 25, 2003]. Available from: URL: <http://www.cdc.gov/communication/emergency/erc.htm>
6. Rezza G. Severe acute respiratory syndrome. *J Epidemiol Community Health* 2003;57:643.

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SARS-associated Coronavirus Infection in Teenagers

To the Editor: A global outbreak of severe acute respiratory syndrome (SARS) was reported in March 2003 (1). Most reported cases were in adults. Hong Kong, however, reported 10 pediatric cases (2) with less aggressive clinical courses.

The disease became endemic in Taiwan by the end of April 2003 (3). Hualien City, a geographically secluded city in eastern Taiwan, had nine pediatric cases, all mild. The cases occurred in Tzu-Chi High School, a private boarding school for 830 students 12 to 18 years of age, all of whom live in the same building and eat daily meals together in the school cafeteria. On April 28, when a student (case-patient 1) visited the school nurse on the first day that he had a fever, an infection specialist from affiliated Tzu-Chi Medical Center immediately responded. The specialist discovered that this student's close friend in the same class (case-patient 2) was already febrile. Case-patient 2, a Hong Kong resident who leaves Taiwan for Hong Kong every 3 months, had visited Hong Kong twice in March and April 2003. Both students were isolated in the hospital on April 28.

Tzu-Chi Medical Center began a search for other febrile students. On April 29, seven more schoolmates were found to have fever >38°C. All were identified on their first day of becoming febrile and were immediately isolated in the hospital. All nine schoolmates underwent chest x-ray examinations and were tested for SARS-associated coronavirus (SARS-CoV) by reverse transcription-polymerase chain reaction (RT-PCR) (4) and DNA sequencing. The tested length for SARS-CoV was 340 bp in the RNA-dependent polymerase

region. Those teenagers with diarrhea were tested for Norovirus in their stool by RT-PCR. For those teenagers with cough, throat swabs were cultured for influenza and parainfluenza virus.

To reduce the risk for false-positive PCR results, we followed measures to avoid contamination during specimen handling and processing. Two primer sets were used for RT-PCR according to Ksiazek (4) and Drosten (5). The targets are located in the RNA-dependent RNA polymerase gene at different regions, which are separated by approximately 3,000 bp. The laboratory used in RT-PCR analysis is not involved in viral culture or extraction preparation and is located far away from the laboratory for RNA extraction to avoid contamination.

Negative-control cDNA was included in each analysis and confirmed that no contamination had occurred. Two operators manipulated RT-PCR analysis for two specimens from the same sample. The specimens were analyzed in different rooms with independent reagents for assurance. Real-time RT-PCR instead of nested RT-PCR was used.

Six schoolmates were positive for SARS-CoV by RT-PCR, confirmed later by DNA sequencing for replicase. The tested DNA sequence was >99% identical with a published SARS-CoV sequence. Norovirus was identified in one teenager's stool by RT-PCR; this virus belonged to genogroup I by testing partial cDNA sequence for capsid protein. The tested length was 555 bp, and the virus was 96% identical to strain KU4aGI. Culture of a throat swab for influenza and parainfluenza virus did not grow any virus.

The initial signs and symptoms of the nine teenagers were self-reported fever (9/9, range 37.8°C-39.4°C), cough (4/9), general malaise (4/9), diarrhea (4/9), rhinorrhea (3/9), headache (2/9), chills (2/9), sore throat (2/9), and myalgia (1/9). Cough