



## EDITORIAL

# SARS-CoV-2 (COVID-19) and the teaching of Carlo Urbani in Vietnam: a lesson from history almost 20 years after SARS

MARIANO MARTINI<sup>1,2</sup><sup>1</sup> Department of Health Sciences, University of Genoa, Genoa, Italy; <sup>2</sup> “Stop Tb Italia”, Genoa/Milan, Italy

## Keywords

SARS • Vietnam outbreak • Infectious diseases • Carlo Urbani • Covid-19 • Early detection  
• Prevention • History of infectious diseases

## Summary

*Carlo Urbani was an infectious diseases expert for Health Organization (WHO), who in 2003, first identified Severe Acute Respiratory Syndrome (SARS) as a new and highly contagious disease. In February, 2003, an American businessman with an unknown lung disease was admitted to a hospital in Vietnam. Doctor Urbani immediately understood that it was a new virus and right after he alerted the WHO and the Vietnamese government; he involved also foreign doctors in the investigation of this case. He advised the authorities to immediately implement quarantine measures*

*and thanks to his quick and unyielding response, the spread of the virus could be stopped quickly, many patients were identified and early isolated. His early warning to the World Health Organization triggered a swift and global response credited with saving numerous lives. He shortly afterwards himself became infected and died. The shut down of Vietnam's first outbreak was really a very important step for the whole world community and the Urbani's quick actions were crucial because ensured an early detection of SARS and an effective response from international community.*

## Background

Carlo Urbani (1956-2003) was an Italian microbiologist and infectious disease expert for World Health Organization (WHO) in Hanoi (Vietnam) who first identified in 2003 Severe Acute Respiratory Syndrome (SARS) as a new and highly contagious viral disease. He was born on October 19, 1956 in Castelplanio, near Ancona (Italy); even as a young man, he volunteered for different organizations that looked after the less privileged both in Italy and in developing countries. In 1981 he completed his medical studies and specialized in infectious diseases and tropical medicine at the University of Messina; at the beginning he worked as a doctor in Castelplanio, at the Institute for Infectious Diseases in Ancona and in the Macerata Hospital. He became a consultant to the WHO and joined “Doctors Without Borders” (Médecin Sans Frontières-MSF) for whom he went to Cambodia working on control of *Schistosoma mekongi*. He became also head of the Italian section of *Doctors Without Borders* just the year the organization was awarded the famous Swedish Nobel Peace Prize. After Cambodia, he was transferred to Vietnam, where he worked at the Hanoi hospital (Fig. 1).

## A worldwide outbreak of “severe acute respiratory syndrome” (SARS)

On February 28th 2003, he first examined a Chinese-American businessman admitted, two days before, to

*Hanoi's Vietnam France Hospital* for a suspected avian flu infection. The patient suffered from pneumonia, difficulty breathing, fever, dry cough, and also many healthcare workers at the hospital had analogous symptoms few days later [1]. Doctor Urbani quickly recognised that the disease was probably new and highly contagious on between March

**Fig. 1.** Archive of the Carlo Urbani's family. (permission to reproduce the photo to Prof. Mariano Martini).



3rd and 4th he began implementing infection control procedures like high filtration-masks, double gowning and other protective clothing, which were not routine in impoverished Vietnam; then he alerted public health authorities.

All infected patients were isolated and the hospital was closed to the public with security guards outside and infection control measures were instituted at other hospitals. On March 7th Urbani alerted WHO headquarters in Geneva, and then convinced the officials at the Vietnamese Health Ministry of the need to begin isolating patients and screening travellers, despite the possible damage to its economy.

Over the following days, WHO experts, a task force from *Centers for Disease Control and Prevention* (CDC) and specialists in epidemiology from all over the world, went to Hanoi to help contain and study the outbreak.

The syndrome was designated “Severe Acute Respiratory Syndrome” (SARS) [2-6] (Fig. 2).

Clinical specimens from patients meeting the case definition of SARS were sent to the Centers for Disease Control and Prevention (CDC) by collaborators in Vietnam, Singapore, Thailand, Hong Kong, Canada, Taiwan and the United States as part of the etiological investigation [7].

On March 15th, the WHO declared the disease identified by Carlo Urbani to be a “world health threat” [8].

Carlo Urbani realized he had been infected with the SARS few days before, on 11 March during a flight from Hanoi to Bangkok (Thailand) where he went to talk at a conference on the subject of childhood parasitic infections; he started feeling feverish on the plane and a colleague who waiting for him at the airport called an ambulance so Carlo Urbani was admitted to Bangkok Hospital.

He had immediately recognized that the SARS virus had infected him and he continued to study as much as possible until the end so that science could learn more about this disease.

He contracted SARS while treating infected patients in Hanoi; he was one of about 80 people, including many healthcare workers, who were infected by the businessman. At the end of the outbreak, 774 deaths worldwide were attributed to SARS [9].

Carlo Urbani died on March 29th, after 18 days of intensive care. During some moments of consciousness he asked for his lung tissue to be donated for scientific research.

The shut down of Vietnam’s first outbreak was really a very important step for the whole world community and the Urbani’s quick actions were crucial because ensured an early detection of SARS and an effective response from international community. WHO never had reacted so quickly to an outbreak.

The syndrome was intitled “severe acute respiratory syndrome” (SARS) in March 2003, and worldwide efforts to recognize the cause of this illness and prevent its spread were introduced immediately. Many cases could be linked through chains of transmission to health care workers from Guangdong Province, China, who visited Hong Kong, where he was hospitalized with SARS and died [7].

### The pivotal role of Carlo Urbani

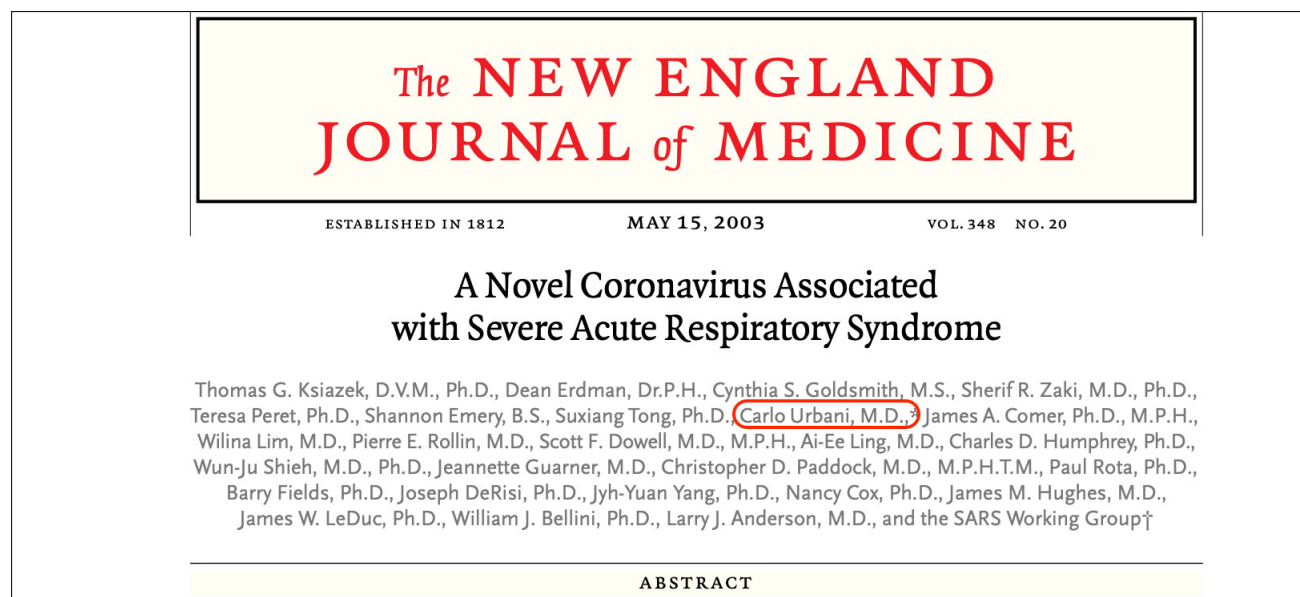
Surveillance is a very important tool for identifying infectious diseases causing serious public health problems [10] and preventive measures to reduce the risk of infections have a fundamental role [11].

Quarantine works when introduced early alongside other prevention measures are the fundamental pillars for reduce the number of people infected and the number of death [12].

The quarantine is most effective, and cost less, when it was started earlier [13].

Carlo Urbani really played a key role in containing the spread of SARS infection: he was the one who very

Fig. 2. N Engl J Med. 2003 May 15;348(20):1953-66. doi: 10.1056/NEJMoa030781. Epub 2003 Apr 10.



quickly saw that the disease was something very strange; because of his early detection of the disease, global surveillance was intensified and many new cases have been identified and isolated before further infections.

As said the UN Secretary-General Kofi Annan (April 8th 2003) “Dr. Carlo Urbani dedicated his life to helping protect and save the lives of others.

*It was characteristic of his vigilance, professionalism and expertise that he was instrumental in ensuring an early response by the international community to Severe Acute Respiratory Syndrome. Had it not been for his recognition that the outbreak of the virus was something out of the ordinary, many more would have fallen victim to SARS”.*

*It was the cruellest of ironies that he lost his own life to SARS while seeking to safeguard others from the disease. Dr. Urbani leaves an inspiring legacy in the United Nations family and the global public health community. For his contribution on the front lines of the fight against disease, he will be remembered as a hero -in the best and truest sense of the world” [14].*

Today, with SARS-CoV-2 (Covid-19), after about twenty years, what did we learn from Urbani’s teaching?

## Acknowledgements

Funding sources: this research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

## Conflict of interest statement

The author declare no conflict of interest.

## Authors' contributions

MM conceived the study, drafted the manuscript, revised the manuscript and performed a search of the literature. MM read and approved the latest version of the manuscript.

## References

- [1] Oransky I. “Carlo Urbani” (Obituary). *Lancet* 2003; 361:1481.
- [2] Acute respiratory syndrome in China - update 3: disease outbreak reported. Geneva: World Health Organization 2003.
- [3] Centers for Disease Control and Prevention. Update: outbreak of severe acute respiratory syndrome - worldwide, 2003. *MMWR Morb Mortal Wkly Rep* 2003;52:241-8.
- [4] Tsang KW, Ho PL, Ooi GC, Yee WK, Wang T, Chan-Yeung M, Lam WK, Seto WH, Yam LY, Cheung TM, Wong PC, Lam B, Ip MS, Chan J, Yuen KY, Lai KN. A cluster of cases of severe acute respiratory syndrome in Hong Kong. *N Engl J Med* 2003;348:1975-83. <https://doi.org/10.1056/NEJMoa030666>
- [5] Lee N, Hui D, Wu A, Chan P, Cameron P, Gavin M. Joynt, Ahuja A, Yung MY, Leung CB, Lui SF, Szeto CC, Sydney Chung S, Sung JY. A major out-break of severe acute respiratory syndrome in Hong Kong. *N Engl J Med* 2003;348:1986-94. <https://doi.org/10.1056/NEJMoa030685>
- [6] Poutanen SM, Low DE, Henry B, Finkelstein S, Rose D, Green K, Tellier R, Draker R, Adachi D, Ayers M, Chan AK, Skowronski DM, Salit I, Simor AE, Slutsky AS, Doyle PW, Kraiden M, Petric M, Brunham RC, McGeer AJ; National Microbiology Laboratory, Canada; Canadian Severe Acute Respiratory Syndrome Study Team. Identification of severe acute respiratory syndrome in Canada. *N Engl J Med* 2003;348:1995-2005. <https://doi.org/10.1056/NEJMoa030634>
- [7] Ksiazek TG, Erdman D, Goldsmith CS, Zaki SR, Peret T, Emery S, Tong S, Urbani C, Comer JA, Lim W, Rollin PE, Dowell SF, Ling AE, Humphrey CD, Shieh WJ, Guarner J, Paddock CD, Rota P, Fields B, DeRisi J, Yang JY, Cox N, Hughes JM, LeDuc JW, Bellini WJ, Anderson LJ; SARS Working Group. A novel coronavirus associated with severe acute respiratory syndrome. *N Engl J Med* 2003;348:1953-66. <https://doi.org/10.1056/NEJMoa030781>
- [8] Flack F. “Carlo Urbani” (Obituary). *BMJ* 2003;326:825.
- [9] WHO. Summary of probable SARS cases with onset of illness from 1 November 2002 to 31 July 2003 Available at: [https://www.who.int/csr/sars/country/table2004\\_04\\_21/en](https://www.who.int/csr/sars/country/table2004_04_21/en) (accessed on May 2021).
- [10] Jelineka T, Myrvangb B. Surveillance of imported infectious diseases in Europe: report from the 4th TropNetEurop workshop. *Acta Tropica* 2004;91:47-51. Available at: <https://doi.org/10.1016/j.actatropica.2004.02.007> (accessed on May 2021).
- [11] Bonilla-Aldana DK, Quintero-Rada K, Montoya-Posada JP, Ramírez-Ocampo S, Paniz-Mondolfi A, Rabaan AA, Sah R, Rodríguez-Morales AJ. SARS-CoV, MERS-CoV and now the 2019-novel CoV: have we investigated enough about coronaviruses? - A bibliometric analysis. *Trav Med Infect Dis* 2020;33:101566. <https://doi.org/10.1016/j.tmaid.2020.101566>
- [12] Mahase E. Covid-19: quarantine works when introduced early alongside other measures, finds review. *BMJ* 2020;369:m1450. <https://doi.org/10.1136/bmj.m1450>
- [13] Nussbaumer-Streit B, Mayr V, Dobrescu AI, Chapman A, Persad E, Klerings I, Wagner G, Siebert U, Christof C, Zachariah C, Gartlehner G. Quarantine alone or in combination with other public health measures to control COVID-19: a rapid review. *Cochrane Database Syst Rev* 2020;4:CD013574. <https://doi.org/10.1002/14651858.CD013574.32267544>
- [14] Kofi AA. United Nations -Nations Unies, The Secretary General, 2003.

Received on May 2, 2021. Accepted on May 18, 2021.

**Correspondence:** Mariano Martini, Department of Health Sciences, largo R. Benzi 10, 16132 Genoa, Italy - Tel./Fax: 010.353.85.02 - E-mail: mariano.yy@gmail.com; mr.martini@unige.it

**How to cite this article:** Martini M. SARS-CoV-2 (COVID-19) and the teaching of Carlo Urbani in Vietnam: a lesson from history almost 20 years after SARS. *J Prev Med Hyg* 2021;62(Suppl. 1):E3-E5. <https://doi.org/10.15167/2421-4248/jpmh2021.62.1S3.2134>

© Copyright by Pacini Editore Srl, Pisa, Italy

*This is an open access article distributed in accordance with the CC-BY-NC-ND (Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International) license. The article can be used by giving appropriate credit and mentioning the license, but only for non-commercial purposes and only in the original version. For further information: <https://creativecommons.org/licenses/by-nc-nd/4.0/deed.en>*