August 28-30, 2025

IS3R 16th International Symposium Dublin/IE

How can the imaging community respond to global and regional crisis?

Fast and effective deployment

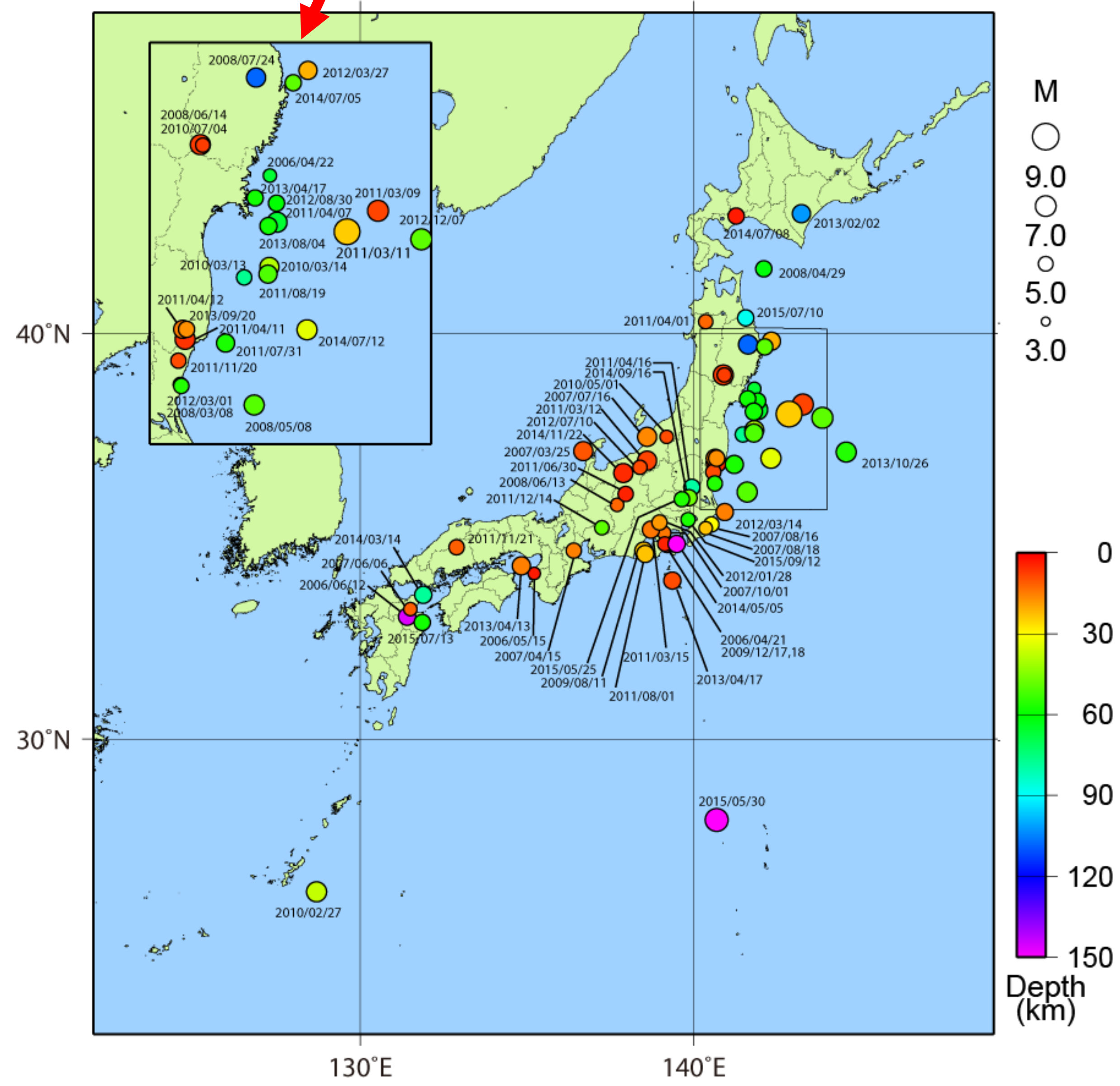
Japan Radiological Society (JRS) President

The University of Osaka Graduate School of Medicine

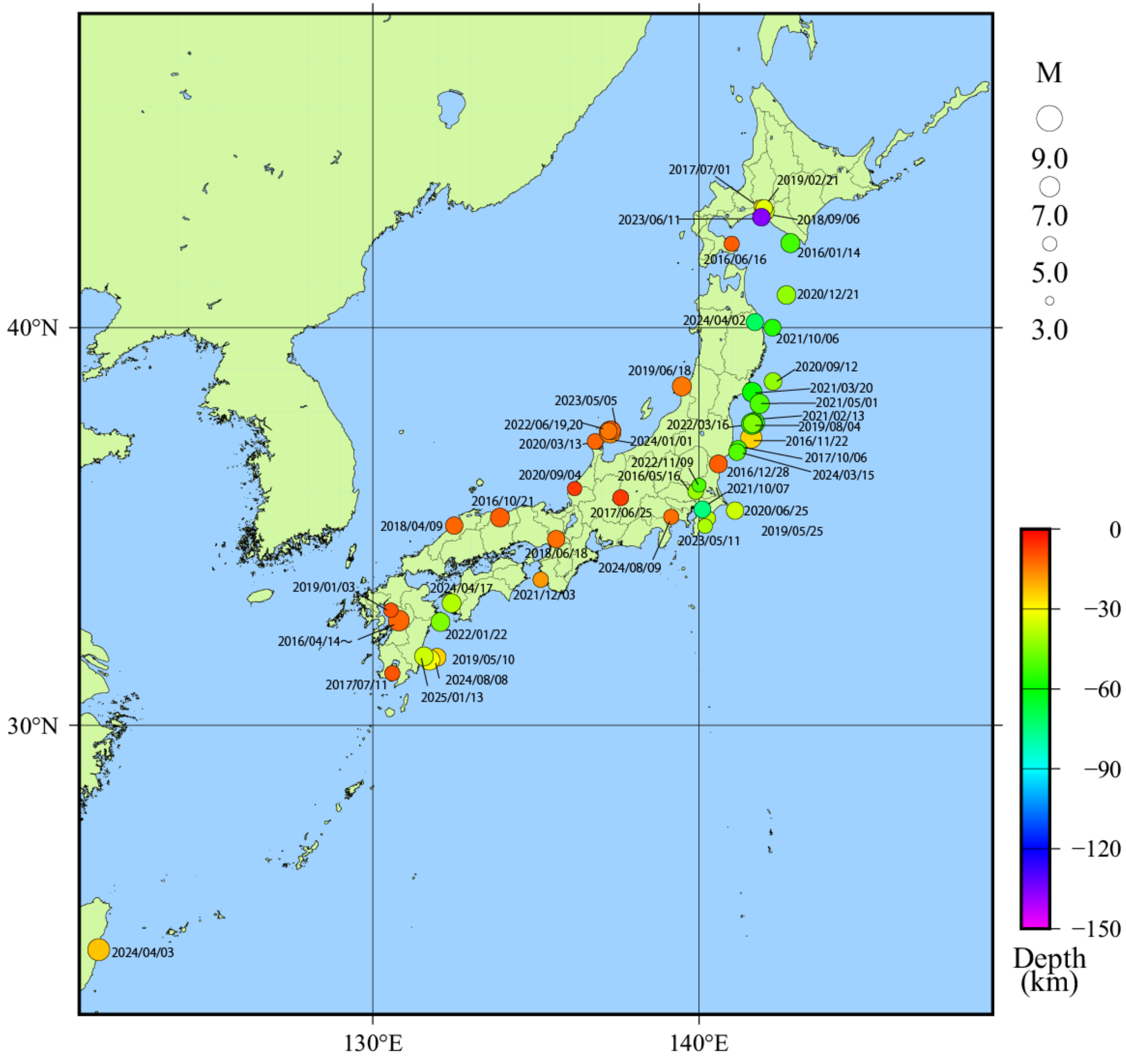
Noriyuki Tomiyama, MD, PhD

2011 Tōhoku earthquake and tsunami

Earthquake in Japan



From 2006 to 2015



Since 2016

Fukushima Daiichi nuclear disaster in 2011

The meltdowns of three of its reactors

Preventing and Mitigating Radiology System Failures: A Guide to Disaster Planning

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Abbreviations: ASI = active shooter incident, FMEA = Failure Mode and Effect Analysis, HRVA = Hazard, Risk, and Vulnerability Analysis, IT = information technology, MCI = mass casualty incident, PACS = picture archiving and communication system, PPE = personal protective equipment, RIS = radiology information system

RadioGraphics 2021; 41:2111–2126

https://doi.org/10.1148/rg.2021210083

Content Code: SQ

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Disaster planning is a core facet of modern health care practice. Owing to complex infrastructure requirements, radiology departments are vulnerable to system failures that may occur in isolation or during a disaster event when the urgency for and volume of imaging examinations increases. Planning for systems failures helps ensure continuity of service provision and patient care during an adverse event. Hazards to which a radiology department is vulnerable can be identified by applying a systematic approach with recognized tools such as the Hazard, Risk, and Vulnerability Analysis. Potential critical weaknesses within the department are highlighted by the Failure Mode and Effects Analysis tool. Recognizing the potential latent conditions and active failures that may impact systems allows implementation of strategies to prevent failure or to build resilience and mitigate the effects if they happen. Inherent system resilience to an adverse event can be estimated, and the ability of a department to operate during a disaster and the subsequent recovery can be predicted. The main systems at risk in a radiology department are staff, structure, stuff (supplies and/or equipment), and software, although individual issues and solutions within these are department specific. When medical imaging or ex-

Effective Crisis Response

- Rapid Deployment
- Crisis Protocols & Guidelines
- Telemedicine & Remote Support
- Technology & Innovation
- Training & Capacity Building
- Global Partnerships
- Preparedness & Planning

Rapid Deployment

Rapid Deployment of Imaging Resources

- Mobile imaging units (X-ray, CT, Ultrasound)
- Swift dispatch of trained radiology teams
- Temporary diagnostic centers in disaster zones

Crisis Protocols & Guidelines

Standardized Emergency Protocols

- Clear imaging guidelines for disaster situations
- Protocols for infectious disease outbreaks
- Easy-to-follow workflows under pressure

Telemedicine & Remote Support

Telemedicine & Remote Reading

- Remote image interpretation via teleradiology
- Support for areas with limited radiology services
- 24/7 coverage during crises

Technology & Innovation

Leveraging Technology

- AI-assisted image analysis for faster triage
- Use of advanced imaging tools
- Digital platforms for efficient case sharing

Training & Capacity Building

Training & Education During Crises

- Rapid online training for healthcare workers
- Webinars & virtual workshops
- Long-term capacity development

Global Partnerships

Global Collaboration

- Partner with health organizations & NGOs
- Integrate imaging into humanitarian efforts
- Share resources and best practices

Preparedness & Planning

Preparedness for Future Crises

- Establish emergency radiology task forces
- Develop action plans and simulations
- Strengthen regional radiology networks

ORIGINAL RESEARCH • STATEMENTS AND GUIDELINES

Radiology

The Role of Chest Imaging in Patient Management during the COVID-19 Pandemic: A Multinational Consensus Statement from the Fleischner Society

Geoffrey D. Rubin, MD, MBA • Christopher J. Ryerson, MD, MAS • Linda B. Haramati, MD • Nicola Sverzellati, MD, PhD • Jeffrey P. Kanne, MD • Suhail Raoof, MD • Neil W. Schluger, MD • Annalisa Volpi, MD • Jae-Joon Yim, MD • Ian B. K. Martin, MD, MBA • Deverick J. Anderson, MD, MPH • Christina Kong, MD • Talissa Altes, MD • Andrew Bush, MD • Sujal R. Desai, MD • onathan Goldin, MD, PhD • Jin Mo Goo, MD, PhD • Marc Humbert, MD, PhD • Yoshikazu Inoue, MD, PhD • Hans-Ulrich Kauczor, MD • Fengming Luo, MD • Peter J. Mazzone, MD, MPH • Mathias Prokop, MD, PhD • Martine Remy-Jardin, MD, PhD • Luca Richeldi, MD, PhD • Cornelia M. Schaefer-Prokop, MD • Noriyuki Tomiyama, MD, PhD • Athol U. Wells, MD, PhD • Ann N. Leung, MD

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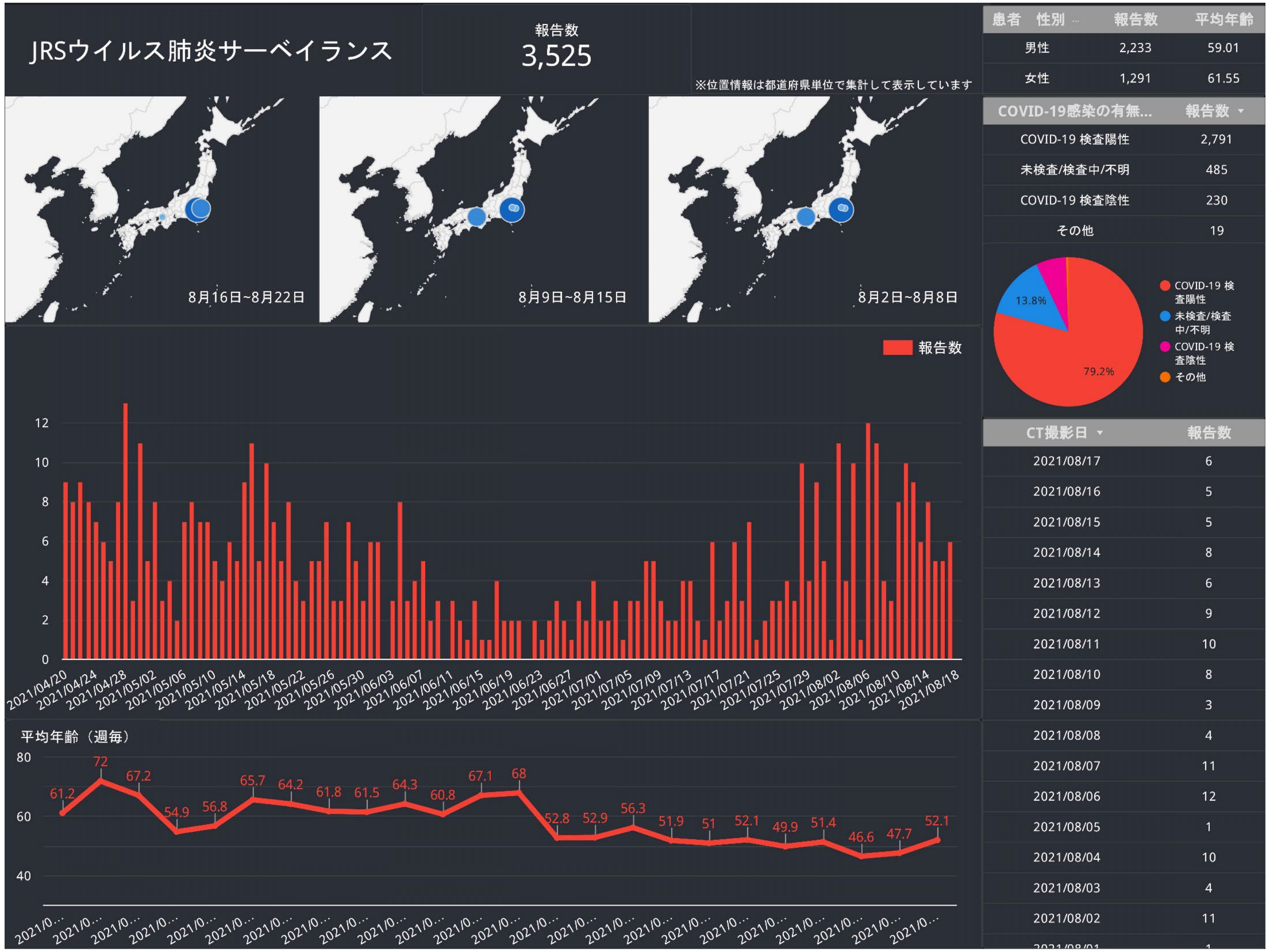
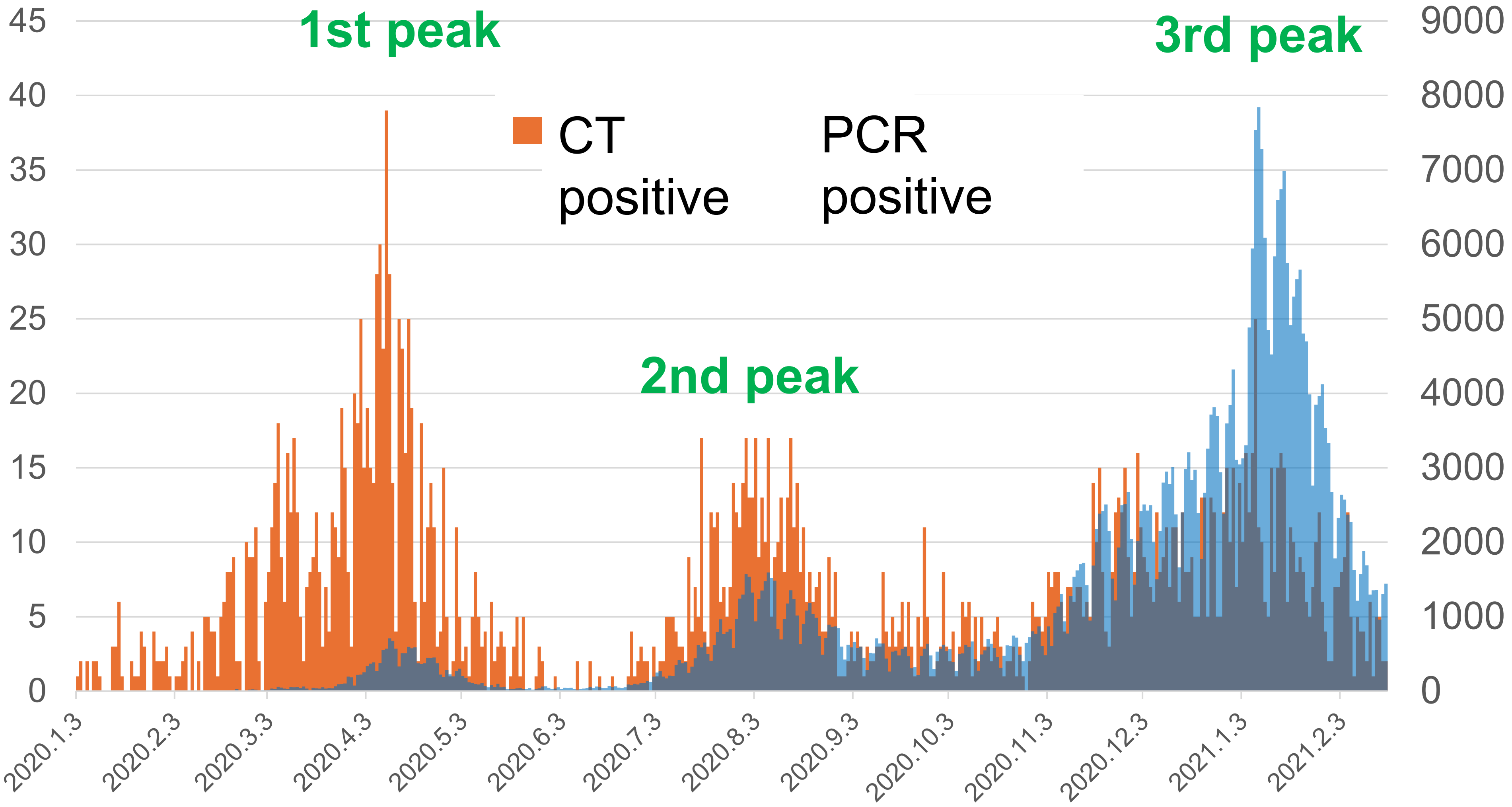
Conflicts of interest are listed at the end of this article.

Radiology 2020; 296:172–180 • https://doi.org/10.1148/radiol.2020201365 • Content codes: CH CT

A Surveillance for Viral Pneumonias by Radiological Diagnosis on the chest CT



A Surveillance for Viral Pneumonias by chest CT



In the End

“Fast, coordinated imaging responses save lives. Preparedness, technology, and collaboration are essential.”

Thank you for your attention.