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	Titolo	Charting the Next Pandemic : Modeling Infectious Disease Spreading in the Data Science Age / / by Ana Pastore y Piontti, Nicola Perra, Luca Rossi, Nicole Samay, Alessandro Vespignani
	Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2019
	ISBN	3-319-93290-X
	Edizione	[1st ed. 2019.]
	Descrizione fisica	1 online resource (221 pages)
	Disciplina	616.9
	Soggetti	Social sciences—Data processing
		Social sciences—Computer programs
		Infectious diseases
		Sociophysics
		Econophysics
		Epidemiology
		Computational Social Sciences
		Infectious Diseases
		Data-driven Science, Modeling and Theory Building
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Nota di contenuto	Part I: How to Model Pandemics -- Infectious Disease Spreading: From Data to Models -- Data, Data, and More Data -- Data Model Integration: The Global Epidemic and Mobility -- From Data to Knowledge: How Models Can Be Used -- The Numerical Forecast of Pandemic Spreading: The Case Study of the 2009 A/H1N1 PDM -- Computational Modeling of "Disease X".
	Sommario/riassunto	This book provides an introduction to the computational and complex systems modeling of the global spreading of infectious diseases. The latest developments in the area of contagion processes modeling are discussed, and readers are exposed to real world examples of data-model integration impacting the decision-making process. Recent advances in computational science and the increasing availability of real-world data are making it possible to develop realistic scenarios

and real-time forecasts of the global spreading of emerging health threats. The first part of the book guides the reader through sophisticated complex systems modeling techniques with a non-technical and visual approach, explaining and illustrating the construction of the modern framework used to project the spread of pandemics and epidemics. Models can be used to transform data to knowledge that is intuitively communicated by powerful infographics and for this reason, the second part of the book focuses on a set of charts that illustrate possible scenarios of future pandemics. The visual atlas contained allows the reader to identify commonalities and patterns in emerging health threats, as well as explore the wide range of models and data that can be used by policy makers to anticipate trends, evaluate risks and eventually manage future events. Charting the Next Pandemic puts the reader in the position to explore different pandemic scenarios and to understand the potential impact of available containment and prevention strategies. This book emphasizes the importance of a global perspective in the assessment of emerging health threats and captures the possible evolution of the next pandemic, while at the same time providing the intelligence needed to fight it. The text will appeal to a wide range of audiences with diverse technical backgrounds.