Dutch population, on average, has changed plans each year. Moreover, accelerating consolidation of the health insurance market has restricted meaningful choice of insurance plan. Currently, four insurance conglomerates control about 90% of the Dutch health insurance market. Recent polls suggest public dissatisfaction with private insurers, with 65% of insured people reporting that they have low or very low levels of trust in private plans.

Fourth, notwithstanding the rhetoric of competition, the Netherlands still relies heavily on regulation. Indeed, the Dutch case shows that competitive systems that seek to escape supposedly centralized, bureaucratic control of medical care paradoxically require sophisticated regulation and government intervention in order to work. The government has not abandoned its traditional tools, including global budgets and constraints on prices and patient cost sharing. It sets fees for independent specialists and general practitioners and controls prices for most hospital services.[4] In 2010, for example, payments to specialists were reduced in response to budget overruns.

The Dutch Ministry of Health regularly engages in talks with the health insurance industry when there are complaints about rising premiums or copayments. Insurers must offer comprehensive coverage, and direct payments by patients amount to less than 10% of total medical care costs, among the lowest percentages in industrialized countries. The comprehensiveness of health insurance in the Netherlands provides a critical contrast to the Ryan Medicare plan, which would erode the U.S. government's contribution to the point that 65-year-old beneficiaries would pay about two thirds of medical costs themselves.

The myth that competition has been key to cost containment in the Netherlands has obscured a crucial reality. Health care systems in Europe, Canada, Japan, and beyond, all of which spend much less than the United States on medical services, rely on regulation of prices, coordinated payment, budgets, and in some cases limits on selected expensive medical technologies, to contain health care spending.[5] Systemwide regulation of spending, rather than competition among insurers, is the key to controlling health care costs. The Netherlands, after all, spent much less on medical care than the United States with virtually universal insurance coverage long before it began experimenting with managed competition in 2006.

The Dutch experience provides a cautionary tale about the place of private insurance competition in health care reform. The Dutch reforms have fallen far short of expectations — a reminder that policy intentions should not be confused with outcomes and that managed competition is hardly a panacea. The idea that the Dutch reforms provide a successful model for U.S. Medicare to emulate is bizarre. The Dutch case in fact underscores the pitfalls of the casual use (and misuse) of international experience in U.S. health care reform debates.[5] Before we learn *from* other countries' experiences with medical care, we first need to learn *about* them.

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Integrating Social Media into Emergency-Preparedness Efforts

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Despite blocked Internet service, new social media such as "speak-to-tweet" (which allows brief Twitter messages to be sent through a voice connection) were being used to improve communication about health and safety within the first few days of the 2011 Egyptian uprising, which had itself been organized by means of social media. After Haiti's 2010 earthquake, Ushahidi, an open-source Web platform that uses "crowd-sourced" information to support crisis management, linked health care providers requiring supplies to those who had them, and victims trapped

under the rubble used Facebook to reach out for help.[1] During the 2009 influenza pandemic, within minutes after the Alexandria, Virginia, health department tweeted and texted about where vaccine against H1N1 influenza was available, people flocked to vaccination sites. Community residents responding to the 2010 Deepwater Horizon oil spill in the Gulf of Mexico texted photographs of oiled birds to the Louisiana Bucket Brigade, whose maps helped volunteers to identify areas most in need of clean-up efforts.

Clearly, social media are changing the way people communicate not only in their day-to-day lives, but also during disasters that threaten public health. Engaging with and using emerging social media may well place the emergency-management community, including medical and public health professionals, in a better position to respond to disasters. The effectiveness of our public health emergency system relies on routine attention to preparedness, agility in responding to daily stresses and catastrophes, and the resilience that promotes rapid recovery. Social media can enhance each of these component efforts.

Since these new media are so pervasive in communication (more than 40 million Americans, for instance, use social media Web sites multiple times a day),[2] it makes sense to explicitly consider the best way of leveraging these communication channels before, during, and after disasters. Networking sites such as Facebook can help individuals, communities, and agencies share emergency plans and establish emergency networks. Web-based "buddy" systems, for example, might have allowed more at-risk people to receive medical attention and social services during the 1995 Chicago heat wave, when hundreds of people died of heat-related illness within a short period.[3] Integrating these networks into a community's preparedness activities for public health emergencies could help to build social capital and community resilience, making it easier for both professional responders and ordinary citizens to use familiar social media networks and tools in a crisis.

These tools can also be used to improve preparedness by linking the public with day-to-day, real-time information about how their community's health care system is functioning. For example, emergency room and clinic waiting times are already available in some areas of the country through mobile-phone applications, billboard Really Simple Syndication (RSS) feeds, or hospital tweets. Routine collection and rapid dissemination of these measures of strain on a health care system can inform decision making by patients and health care providers and administrators. Monitoring this important information through the same social channels during an actual disaster may help responders verify whether certain facilities are overloaded and determine which ones can offer needed medical care.

Location-based service applications (such as Foursquare and Loopt) offer another type of opportunity for improving preparedness, by enhancing people's awareness of crisis situations in their geographic area. Using global positioning system (GPS) software for mobile phones, these applications allow people to "check in" to a specific location and share information about their immediate surroundings. With an additional click, perhaps off-duty nurses or paramedics who check in at a venue could also broadcast their professional background and willingness to help in the event of a nearby emergency.

In many instances, by sharing images, texting, and tweeting, the public is already becoming part of a large response network,[2] rather than remaining mere bystanders or casualties. During the first hour and a half of the 2007 massacre at Virginia Tech, students posted on-scene updates on Facebook.[4] Online message boards generated by the American Red Cross have also been used during recent emergencies as a forum for sharing and receiving information about suspected disaster victims. During the 2009 H1N1 influenza pandemic, the Department of Health and Human Services used a "Mommycast" — viewed on YouTube or downloaded as an iTunes video podcast — to tell 1 million viewers what was happening, what to expect, and how to prevent the spread of influenza. At the same time, the number of people following the Centers for Disease Control and Prevention's "emergency profile" on Twitter increased from 65,000 to 1.2 million within a year, and the agency created online applications, or widgets, that provided credible health information and could be displayed on other Web sites. Thus, social media provide opportunities for engaging citizens in public health efforts both by "pushing" information to the public and by "pulling" information from bystanders. Both approaches may improve management of future emergencies.

Social media are also becoming vital to recovery efforts after crises, when infrastructure must be rebuilt and stress management is critical. The extensive reach of

social networks allows people who are recovering from disasters to rapidly connect with needed resources.[4] Tweets and photographs linked to timelines and interactive maps can tell a cohesive story about a recovering community's capabilities and vulnerabilities in real time. Organizations such as Ushahidi have helped with recovery in Haiti by matching volunteer health care providers with distressed areas.[1] Social media have been used in new ways to connect responders and people directly affected by such disasters as the Deepwater Horizon oil spill, flash floods in Australia, and the earthquake in New Zealand with medical and mental health services.[5]

As with any new technology, there remain many hurdles between current use and optimal exploitation of social media. Although these media are used by people of both sexes and an expanding range of ages, it is important to recognize and explore the technology's limitations in reaching at-risk, vulnerable populations.[2]

Furthermore, it is not always possible to know whether social media users are who they claim to be or whether the information they share is accurate. Although false messages that are broadcast widely are often rapidly corrected by other users, it is often difficult to separate real signals of a health crisis or a material need from background noise and opportunistic scams. Careful consideration must also be given to issues of privacy and the question of who should monitor data from social media (and for what).

Studies are needed to evaluate the reliability and validity of public health–related information communicated through social media. Some relevant metrics (e.g., Twitter Analytics, Flikr Stats, and Google Analytics) already exist and are used by the business community, yet few published scientific studies have applied these tools to evaluating the capabilities or effectiveness of social media in public health emergencies. Also lacking are studies evaluating whether the integration of social media into public health efforts affects the costs, quality, or outcomes of health care.

Of course, social media cannot and should not supersede our current approaches to disaster-management communication or replace our public health infrastructure, but if leveraged strategically, they can be used to bolster current systems. Now is the time to begin deploying these innovative technologies while developing meaningful metrics of their effectiveness and of the accuracy and usefulness of the information they provide. Social media might well enhance our systems of communication, thereby substantially increasing our ability to prepare for, respond to, and recover from events that threaten the public's health.

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HISTORY OF MEDICINE

One Hundred Years of Salvarsan

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One hundred years ago, the first reports of Paul Ehrlich's "magic bullet," Salvarsan 606, a novel approach to the treatment of infectious diseases, appeared in the U.S. medical literature. The initial article in the *Journal* was published on March 9, 1911, and described the use of Salvarsan in a single case of "chronic pemphigus" affecting a farmer from Linn County, Kansas. A week later, Captain Harold Jones reported on 20 soldiers with syphilis — whose names were given — treated with Salvarsan at Walter Reed General Hospital.[1]

In the ensuing months and years, the medical literature was awash with articles, letters, and book reviews on the magic bullet. Results of its use in thousands of patients were provided;