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Letter from the President

"The future is ours to win. But to get there, we can't just stand still."

Barack Obama, State of the Union Address, 25 January 2011.

Health information technology (HIT) can facilitate the development of personalized medicine, and thereby improve healthcare and potentially decrease costs overall. By allowing researchers to aggregate data and spot trends, HIT can, if constructed properly, give researchers and healthcare providers new tools to develop drugs and to target the right treatments to the right patients.

As we know, the US government is investing heavily in upgrading its antiquated medical records systems, which still rely heavily on paper and are essentially useless except to the provider who ordered a test or conducted a procedure, if he or she can later find them. It is estimated that fewer than 15% of American providers use electronic medical records.

But unfortunately, the US government's 'meaningful use' standards, which are designed to incentivize physicians and hospitals to move from paper to electronic medical records, do not require HIT systems to incorporate genomic information and outcomes data, or to be connected or integrated to the degree required to advance personalized medicine. As a result, the good intentions underlying the USA's investment of approximately US\$40 billion in HIT, while necessary, are insufficient to help facilitate a new healthcare paradigm based on personalized medicine. The large investment therefore represents a lost chance to significantly hasten the pace of personalized medicine innovation.

This is the central conclusion of *Enabling Personalized Medicine through Health Information Technology*, a Brookings Institution (Washington, DC, USA) White Paper issued on 28 January 2011 by Darrell M West, the founding director of the Center for Technology Innovation (Washington, DC, USA) at Brookings and the author of *Digital Medicine* [1], a close look at healthcare in a new technological age. According to West, "with scientific innovation running far ahead of public policy, physicians, researchers and patients are not receiving the full advantage of latest developments".

Based on interviews with a large number of key leaders in government as well as personalized medicine coalition members in academia, nonprofit organizations and industry, West contends that the US government, as well as governments elsewhere, could and should ensure that the HIT infrastructures of the future support "new care paradigms as opposed to automating yesterday's healthcare practices". Failure to do so, he says, represents a 'missed opportunity' for better care and lower costs.

Focusing on interoperability, standards, data sharing protocols, privacy, predictive modeling and rapid learning feedback models, the paper outlines eight specific policy recommendations to unleash the innovation that HIT promises physicians, researchers and patients.

In brief, to enable HIT that drives personalized medicine innovation and adoption, West argues we should:

- Expand the 'meaningful use' rules to encourage more effective use of HIT for personalized medicine;
- Integrate research and clinical practice by creating mechanisms that aggregate data into databases for secondary usage;
- Balance privacy rules so that innovation is also a priority;
- Write differentiated reimbursement codes so that researchers can easily track diagnosis and treatment based on genetic and other molecular tests;

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“...governments that fail to invest in the future by harnessing the full power of HIT risk not only missing opportunities but also falling behind those that are willing to place bets on the advancement of genomic medicine.”

- Build data systems to facilitate the comparison and evaluation of information;
- Enable ‘feedback loops’ so that new evidence and discoveries are incorporated into treatment faster;
- Introduce easy-to-use predictive models that allow providers to prevent disease before it occurs;
- Fund pilot projects to demonstrate the value of innovation in healthcare.

West cautions that governments that fail to invest in the future by harnessing the full power of HIT risk not only missing opportunities but also falling behind those that are willing to place bets on the advancement of genomic medicine.

Enabling Personalized Medicine through Health Information Technology can be accessed from the PMC website [101].

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Reference

- 1 West DM: *Digital Medicine*. Brookings Institution Press. Washington, DC, USA (2009).

Website

- 101 Enabling Personalized Medicine through Health Information Technology
www.personalizedmedicinecoalition.org/policy/topics/health-information-technology