



In the Literature

FUNCTIONAL GAPS IN ATTAINING A NATIONAL HEALTH INFORMATION NETWORK

Rainu Kaushal, M.D., M.P.H.
David W. Bates, M.D., M.Sc.
Eric G. Poon, M.D., M.P.H.
et al.

Health Affairs
September/October 2005
24 (5): 1281-89

Full text is available at:
[http://content.healthaffairs.org/
cgi/content/full/24/5/1281?ijkey=
eHpuzxf3DUNKY&keytype=
ref&siteid=healthaff](http://content.healthaffairs.org/cgi/content/full/24/5/1281?ijkey=eHpuzxf3DUNKY&keytype=ref&siteid=healthaff)

For more information about
this study, contact:

Rainu Kaushal, M.D., M.P.H.
Division of General Internal
Medicine
Brigham and Women's Hospital
E-MAIL
rkaushal@partners.org

or

Mary Mahon
Public Information Officer
The Commonwealth Fund
TEL 212-606-3853
E-MAIL mm@cmwf.org

Commonwealth Fund Pub. #861
September 2005

In the Literature presents brief
summaries of Commonwealth Fund-
supported research recently pub-
lished in professional journals. To
read or learn more about new pub-
lications as soon as they become
available, visit www.cmwf.org and
[register to receive Commonwealth
Fund e-mail alerts.](#)

THE COMMONWEALTH FUND
ONE EAST 75TH STREET
NEW YORK, NY 10021-2692
TEL 212.606.3800
FAX 212.606.3500
E-MAIL cmwf@cmwf.org
<http://www.cmwf.org>

Information technology (IT) has great po-
tential to improve the safety and quality of
medical care, but the adoption of health IT
has been slow. Five years from now, how
far will the nation's health IT network
have progressed?

According to the study, "[Functional Gaps
in Attaining a National Health Information
Network](#)" (*Health Affairs*, Sept./Oct. 2005),
financial and personnel constraints will
cause smaller providers, such as home
health agencies and skilled nursing facilities,
to lag behind larger ones. Still, the re-
searchers say that implementation of such
technologies as electronic health record
(EHR) and computerized physician order
entry (CPOE) technologies will likely tri-
ple or quadruple in the next five years.

The study, which was supported by The
Commonwealth Fund and the Harvard In-
terfaculty Program for Health Systems Im-
provement, was led by Rainu Kaushal,
M.D., M.P.H., of Brigham and Women's
Hospital in Boston.

Developing a Model National Health Information Network

Kaushal and colleagues convened an expert
panel to develop a model national health
information network (NHIN) that would
be attainable in five years, taking into ac-
count financial, personnel, and technical
constraints. The panel agreed that such a
network should include electronic viewing
of test results, electronic health records
(EHRs), computerized physician order en-
try (CPOE), electronic claims submission,
electronic eligibility verification, secure

online patient communication, and elec-
tronic prescription acceptance by pharma-
cies. The network should span physician
offices, hospitals, skilled nursing facilities,
home health agencies, clinical laboratories,
and pharmacies.

Next, the team estimated the current levels
of adoption of these IT systems, drawing
on interviews with stakeholders in two
markets and their own estimates. They
then measured the gaps between the func-
tionalities of the model NHIN and the ex-
pected functionalities in five years based on
the current rate of IT adoption.

Administrative Tools Expected to Be Widely Adopted

In five years, the team predicts that admin-
istrative functionality, such as electronic
claims submission and eligibility checks,
will be furthest advanced, while clinical
functionalities are likely to lag further be-
hind. This gap, the researchers say, is due
to the fact that there are clear incentives
for providers to adopt administrative capa-
bilities, like reducing costs and decreasing
turnaround time for bills.

Result-viewing capability is expected to be
the most widely adopted clinical function-
ality, as it is easily integrated into existing
work processes and provides great benefit to
users. The panel projected that, in five years,
such functionality would be developed in
51 percent to 69 percent of office practices
and 70 percent to 83 percent of hospitals.

The study estimates that the implementa-
tion of EHR and CPOE functionality will

likely triple or quadruple in the next five years. Electronic health record functionality will increase from 9 percent to 25 percent in small physician practices (one to four physicians), and from 15 percent to 38 percent in larger practices (more than 20 physicians). Computerized physician order entry functionality will increase from 5 percent to 21 percent in small practices, and from 9 percent to 32 percent in larger practices.

In general, size matters: large stakeholders, such as hospitals, are expected to have the most clinical functionalities in five years, followed by smaller hospitals and then large, medium, and small office practices. Smaller stakeholders, such as home health agencies and skilled nursing facilities, are expected to have the least developed clinical IT.

Policy Recommendations

The authors note that if adoption of health IT among smaller stakeholders lags behind, continuity of care will be impaired as patients move from highly computerized inpatient settings to paper-based outpatient settings. Policy intervention, the researchers say, should preferentially target adoption by smaller stakeholders to prevent such inequities. In addition, health purchasers and third-party payers can create pay-for-performance in-

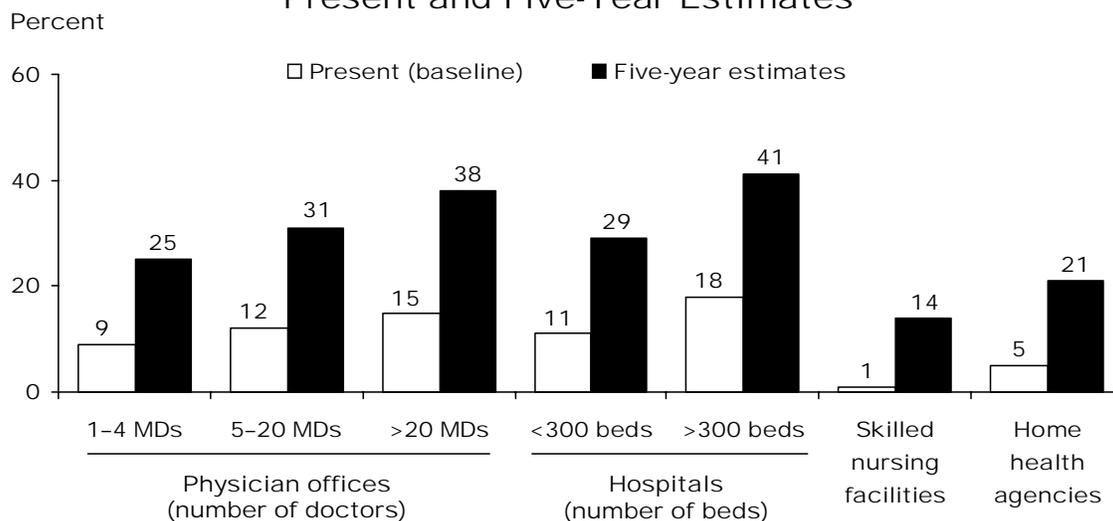
centives to encourage health IT adoption. Stakeholders with smaller operating budgets may require direct financial assistance.

Finally, creating an NHIN will require developing and adopting standards to ensure interoperability of systems and addressing privacy and security issues, the authors say.

Facts and Figures

- Based on current trends, secure patient communication systems will be available in 33 to 46 percent of office practices in five years.
- Computerized physician order entry is estimated to be more prevalent than electronic health records (EHRs) in the inpatient setting.
- Only 21 percent of home health agencies and 14 percent of skilled nursing facilities are expected to have an EHR system.
- More than one-half (58%) of pharmacies will be able to accept electronic prescriptions in five years, the panel estimated.

**Electronic Health Record Functionality,
Present and Five-Year Estimates**



Source: R. Kaushal et al., "Functional Gaps in Attaining a National Health Information Network," *Health Affairs* 24 (Sept./Oct. 2005): 1281-89. Reproduced with permission from the publisher.