



PUBLIC NOTICE

Federal Communications Commission
445 12th St., S.W.
Washington, D.C. 20554

News Media Information 202 / 418-0500
Fax-On-Demand 202 / 418-2830
TTY 202 / 418-2555
Internet: <http://www.fcc.gov>
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**COMMENT SOUGHT ON HEALTH CARE DELIVERY ELEMENTS OF
NATIONAL BROADBAND PLAN
NBP Public Notice #17**

PLEADING CYCLE ESTABLISHED

**GN Docket Nos. 09-47, 09-51, 09-137;
WC Docket No. 02-60**

Comment Date: December 4, 2009

In the American Recovery and Reinvestment Act of 2009 (Recovery Act), Congress directed the Commission, in its development of a National Broadband Plan, to include “a plan for use of broadband infrastructure and services in advancing...health care delivery.”¹ There are a number of health information technology (health IT) applications that offer promising ways to use broadband and other advanced communications to promote better health outcomes and more efficient delivery of care. Health IT applications include, but are not limited to, electronic health records (EHRs), remote patient monitoring, and real-time video consultations.

Broad use of health IT has the potential to improve population health, expand access to affordable care, increase the efficiency of care provision, reduce unnecessary healthcare costs, prevent medical errors, increase administrative efficiencies and decrease paperwork.² Accordingly, in this Public Notice, we seek tailored comment on how advanced infrastructure and services could help achieve efficient implementation of health IT applications. We wish to further understand gaps between current connectivity infrastructure and the connectivity requirements for various health IT applications across the healthcare ecosystem.

Congress has also mandated that health care providers have access to advanced services through the federal universal service fund.³ In section 254 of the Communications Act of 1934, as amended,⁴ Congress sought to provide rural health care providers “an affordable rate for the services necessary for the purposes of telemedicine and instruction relating to such services.”⁵ In 1997, the Commission

¹ American Recovery and Reinvestment Act of 2009, Pub. L. No. 111-5, § 6001(k)(2)(D), 123 Stat. 115 (2009) (Recovery Act).

² See Health and Human Services web page on Health Information Technology, available at <http://healthit.hhs.gov/portal/server.pt> (last visited Oct. 22, 2009).

³ 47 U.S.C. § 254(b)(6), (h)(1)(A), (h)(2).

⁴ 47 U.S.C. § 254.

⁵ H.R. Conf. Rep. No. 458, 104th Cong. 2nd Sess. 133 (1996).

implemented this statutory directive by adopting the universal service rural health care support mechanism.⁶ Under this mechanism rural health care providers receive discounts on access to telecommunications services, including advanced telecommunications and information services, for medical and health maintenance purposes. To provide discounts to health care providers for the deployment of facilities to access these services, in 2006 the Commission launched the rural health care Pilot Program (Pilot Program). The program provides support for up to eighty five percent of the costs associated with the construction of state or regional broadband health care networks and with the advanced telecommunications and information services provided over those networks.⁷ In this Public Notice we seek input relating to the universal service rural health care support mechanism and the rural health care Pilot Program, specifically as such programs may assist in the deployment and adoption of broadband services.

1. IT Infrastructure to Support Healthcare Delivery. Mapping the current state of internet connectivity is necessary to understand the extent of the gaps in the current connectivity. We seek to better understand the countrywide connectivity of the following delivery settings:

- a. Hospitals
- b. Community health clinics and outpatient centers
- c. Physician offices
- d. Long-term care facilities
- e. Home
- f. Emergency Medical Responders
- g. Indian Health Service, Dept. of Health and Human Services, and other health service providers on tribal lands

For each delivery setting we seek to know:

- i. What internet connectivity types (dsl, cable, fiber-to-the-premise, wireless, etc.) and speeds (in mbps) support each of the above delivery settings across the U.S.? What percentage of each delivery setting is served by each type and speed of connectivity? We welcome detailed analyses of the state of connectivity across each delivery setting.
- ii. How might internet connectivity vary by delivery setting size or location (rural versus urban)? What are other contributing factors to variations in delivery setting connectivity? We welcome detailed analyses of variations in connectivity by delivery setting.
- iii. What is the prevalence of private fiber networks among these delivery settings? We welcome detailed analyses of private fiber networks in support of healthcare delivery.
- iv. What criteria does a delivery setting use to determine sufficient connectivity levels in terms of peak and average transmission rates, guaranteed minimum bandwidth, latency, jitter, reliability, etc.? What is the marginal value of improving IT infrastructure based on the previous criteria? We welcome detailed analyses of the decision criteria/thresholds and costs/benefits used by delivery settings to make IT infrastructure decisions.

⁶ See *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report and Order, 12 FCC Rcd 8776 (1997) (*Universal Service First Report and Order*) (subsequent history omitted); 47 C.F.R. Part 54, Subpart G.

⁷ See *Rural Health Care Support Mechanism*, WC Docket No. 02-60, Order, 21 FCC Rcd 11111 (2006) (*2006 Pilot Program Order*); *Rural Health Care Support Mechanism*, WC Docket No. 02-60, Order, 22 FCC Rcd 20360 (2007) (*2007 Pilot Program Selection Order*).

- v. What issues might exist in transiting multiple networks in ensuring the quality of service parameters identified in (iv)?
 - vi. How might a delivery setting leverage its IT infrastructure to support the health IT needs of the local community? We welcome detailed analyses of the extension of delivery setting IT infrastructure into the local community.
- h. Home
- i. What internet connectivity speed (in mbps) should be available to individuals in their homes to effectively manage their health and communicate with healthcare practitioners? We welcome detailed analyses of clinical and financial outcomes for varying levels of broadband connectivity to the home.
 - ii. What wireless internet connectivity speed (in mbps) should be available to individuals throughout their communities to effectively manage their health and communicate with healthcare practitioners? We welcome detailed analyses of clinical and financial outcomes for varying levels of wireless broadband connectivity.
 - iii. What reliability and performance requirements, if any, might be required to extend health care services to the end user.

2. Connectivity Requirements to Support Health IT Applications. Multiple health IT applications are being deployed using public and private communications networks. We seek to better understand the underlying IT infrastructure necessary to support successful implementation of current and emerging health IT applications, including:

- a. Electronic health records
- b. Real time video for Telehealth consultations and diagnoses
- c. Remote patient monitoring systems
- d. Mobile and other portable remote monitoring systems
- e. Other applications that enable or cause advanced healthcare delivery

For each relevant health IT application we seek to know:

- i. What are the specific network requirements (e.g., transmission speeds, minimum guaranteed bandwidths, latency, jitter, reliability, coverage, others)? How might these differ based upon the content (e.g., text, image, or video) of the application? We welcome detailed network requirement analyses for pertinent applications.
- ii. What issues may exist in ensuring that requirements in (i) are met on an end-to-end basis? Can such requirements easily be met across multiple service provider networks?
- iii. What communication services are key to supporting these healthcare applications? For example, in a total architectural view, what role do services such as Internet Service, LAN Interconnect services, e.g. WAN Ethernet services, enterprise and other services play in the delivery of healthcare applications? How does placement within specific demographic areas (e.g., urban suburban, rural) affect these choices?
- iv. How might new application infrastructures such as Cloud Computing affect architectures for supporting health IT applications? What is the relative value of hosted (ASP, Software as a Service, or Cloud Computing) solutions versus client-based offerings? How does solution type affect connectivity requirements in (i)? We welcome detailed analyses of the relative merits and network requirements for hosted and client-based offerings.

- v. How might network requirements in (i) change (increase) to support application use across different delivery settings (e.g., solo physician practice versus five-physician practice versus clinic with 10 or more physicians)? How does concurrent application usage within a delivery setting affect network requirements? We welcome detailed analyses of the network requirements necessary to support both discrete health IT applications and combinations of health IT applications for increasing numbers of users within a delivery setting.
- vi. How might application usage by individuals (patients and doctors) both in their homes and on a mobile basis affect network requirements? How might these requirements vary by the content (e.g., text, image, or video) of the application? We welcome detailed network requirement analyses for health IT applications in both home and mobile settings.
- vii. Which communications technologies and networks meet the requirements? Which are appropriate for the application being discussed? If this varies by content, why does it vary and in what way? We welcome detailed analyses of the costs, relative performance and benefits of alternative network technologies currently employed by existing applications.
- viii. Are current commercial communications networks adequate for deploying the application in question broadly across the country? If not, what are specific examples of the ways in which current networks are inadequate? How could current networks be improved to make them adequate, and at what cost? If this adequacy varies by content of the application, why does it vary and in what way?
- ix. How suitable are commercial wireless networks for health IT applications? We welcome detailed comparisons of the suitability and reliability of commercial wireless networks and other types of networks.
- x. How might the business or value chain model of the healthcare industry influence or affect the communications and application architectures used to support healthcare services?
- xi. What role might health IT applications play in local and national emergency preparedness (e.g., natural disaster, pandemic, bioterrorist attack, etc.)? What connectivity types and speeds across delivery settings would be needed to ensure public safety in times of crisis? We welcome detailed analyses of the role of various health IT applications in promoting public safety.
- xii. What should be the role of the federal government in ensuring the connectivity necessary to enable promising health IT applications? We welcome specific policy suggestions, as well as cost/benefit analyses and tracking mechanisms.

- 3. Health IT Value Capture & Use Cases.** Various health IT applications enabled by connectivity have been implemented in both public and private system settings. We seek to better understand the value case for health IT applications from real examples:
- a. What combination(s) of health IT applications were implemented? What is the incremental value of adding applications and/or upgrading applications? For any given combination(s), we welcome detailed marginal costs and marginal benefits (financial and health) analyses of the applications chosen.
 - b. Where is application value captured? We seek to quantify the amount of healthcare cost reduction that may be attributed to availability of the following data types: text, image, and video (e.g., EHRs containing only text might offer X savings; EHRs with text plus images might offer 1.2X savings; EHRs with text plus images plus two-way video doctor-to-doctor consultation might offer 2X savings; 24/7 remote monitoring might offer 2.5X savings; etc.). How might the availability of these data elements and combinations

thereof account for cost reduction and affect health outcomes? We welcome detailed analyses of the cost and health impacts of varying data types.

- c. What was the network impact of installing health IT applications? We welcome studies of broadband usage before and after a health IT implementation.
 - d. Were connectivity infrastructure investments made? If so, we welcome detailed analyses of the cost of improvement as well as the specific technological upgrades.
 - e. Was outcome data collected post implementation? If so, we welcome detailed analyses of cost savings and clinical outcomes data.
 - f. Were there differences in application adoption across personnel? If so, we welcome detailed analyses of adoption variation.
- 4. Health IT Use Drivers & Barriers.** There is wide disparity across healthcare delivery settings in both utilization of available internet connectivity and adoption of health IT applications. We seek to better understand the drivers and barriers under both situations for each delivery setting (hospitals, clinics, physician offices, long-term care facilities, etc.), and individuals in their homes and on a mobile basis. We welcome quantitative analyses and anecdotal evidence of drivers and barriers (including, private insurance/government reimbursement for care provided, economic, socio-demographic, technological, educational/training, policy, etc. conditions).
- a. What are the primary drivers and barriers to taking advantage of available internet connectivity across delivery settings?
 - b. What in the healthcare sector may be a disincentive to invest in broadband services (particularly for telemedicine)?
 - c. What are the primary drivers and barriers to adoption across delivery settings for each application type:
 - i. Electronic health records
 - ii. Real time video for Telehealth consultations and diagnoses
 - iii. Remote patient monitoring systems
 - iv. Mobile and other portable remote monitoring systems
 - v. Other applications that enable or cause advanced healthcare delivery
 - d. For each application above, does connectivity have an effect on Health IT adoption? We welcome analyses outlining connectivity thresholds that both promote and hinder adoption.
 - e. Reimbursement issues are frequently cited as a barrier to adoption of health IT applications. We welcome detailed quantitative analyses and examples of non-adoption specific to reimbursement issues.
 - f. What are the barriers to telehealth infrastructure build out for the Indian Health Service? Are the barriers the same for the direct service clinics and hospitals versus the self governance tribal areas? Do the barriers differ for the Alaska Native tribes versus for the tribes in the lower 48 states?
- 5. Data Security in Health IT.** Protection of personal health information (PHI) is required under HIPAA. We seek to better understand the measures in place to ensure health data security, the potential for breaches, and the network requirements to improve security.
- a. What are the major security challenges?
 - b. What level of health data breaches exist in the current system?
 - c. What additional network demands do security efforts impose on the system?
 - d. How might the means by which patients obtain their medical information and populate Personal Health Records (PHRs) be simplified?

6. Universal Service Rural Health Care Support Mechanism and Rural Health Care Pilot Program.

a. Questions Relating to the Rural Health Care Support Mechanism:

- i. Nationwide Connectivity. How does the existing rural health care support mechanism affect nationwide connectivity? Are there instances where the discount structure of the existing rural health care support mechanism provides incentives for rural health care providers to maintain slower, more expensive connections, rather than purchasing faster connections that may be less expensive? Provide specific examples of ways in which the mechanism may impact how health care providers choose broadband service offerings.
- ii. Impediments. The Commission has modified various aspects of the rural health care support mechanism over the years, but demand for funding remains below the authorized funding cap of \$400 million per funding year. For funding year 2008, disbursements under the rural health care support mechanism were approximately \$60 million, or 15 percent of the total \$400 million authorized annually for the program.⁸ Are there specific aspects of the current support mechanism design that suppress demand for funding?
- iii. Telehealth and Telemedicine Leveraging. Are there specific ways the Commission could better leverage the benefits of the rural health care support mechanism through coordination with other federal, state, local, tribal, or non-profit programs that seek to advance broadband deployment or the efficient use of telehealth and telemedicine?
- iv. Role of Universal Service Support. What role should federal universal service support have in the funding of broadband health care networks? For example, the rural health care support mechanism currently provides, to public and non-profit health care providers in rural areas, discounts on the installation and monthly charges for telecommunications and Internet access service used for the provision of health care. What would be the impact on the delivery of health care if the rural health care mechanism supported network backbone only (i.e., infrastructure), or supported the use of telehealth applications?
- v. Urban Areas. Some commenters suggest that the Commission should replace the current discounts available to rural health care providers with an across-the-board discount on connectivity for all health care providers, regardless of whether they are rural or urban. How would such a change impact demand for funding? How would rural areas be impacted by such a change?
- vi. Tribal Areas. To what extent do the universal service rural health care support mechanism as well as the rural health care pilot program currently support tribal telehealth networks or Indian Health Service telehealth networks? Are there modifications to the existing rural health care support mechanism as well as to the existing Indian Health Service or other health care systems serving tribal lands that would increase broadband deployment to or adoption by health care providers in tribal lands? Please provide specific data or other information relating to the potential impact of such changes and estimates of how much

⁸ See Universal Service Administrative Company (USAC) 2008 Annual Report, at 4, available at <http://www.usac.org/about/governance/annual-reports> (last visited Oct. 23, 2009).

additional universal service support would be disbursed if the proposed tribal area modifications were implemented.

- vii. Specific Changes to the Program. Are there other modifications to the existing rural health care support mechanism that would increase broadband deployment to or adoption by health care providers? Please provide specific data or other information relating to the potential impact of such changes and estimates of how much additional universal service support would be disbursed if the modifications were implemented.

b. Questions Relating to the Pilot Program:

- i. Nationwide Connectivity. How does the Pilot Program affect nationwide connectivity? Provide specific examples of ways in which the program may impact how health care providers choose broadband service offerings.
- ii. Impediments. Are there specific programmatic requirements in the Pilot Program that make it difficult for entities to realize the full potential of the program?
- iii. Telehealth and Telemedicine Leveraging. Are there specific ways the Commission could better leverage the benefits of the Pilot Program through coordination with other federal, state, local, tribal, or non-profit programs that seek to advance deployment or the efficient use of telehealth and telemedicine?
- iv. Program Evaluation. What metrics should the Commission use in evaluating the Pilot Program?
- v. Extension of the Pilot Program. The current Pilot Program is scheduled to end after funding year 2009, on June 30, 2010, and existing Pilot Program participants must file all of their funding commitment requests by that date.⁹ Should the Commission seek additional applications after the current Pilot Program ends? If so, what selection criteria should the Commission use in selecting new applications? For example, should support be limited to broadband healthcare networks in rural, insular, tribal, and/or underserved areas? Should the Commission change any of the requirements for participation in the Pilot Program?
- vi. To the extent commenters suggest modifications to the Pilot Program, please provide specific data or other information relating to the potential impact of such changes, and estimates of how many additional projects would participate and how much additional universal service support would be disbursed if the modifications were implemented.

This matter shall be treated as a “permit-but-disclose” proceeding in accordance with the Commission’s *ex parte* rules. See 47 C.F.R. §§ 1.1200, 1.1206. Persons making oral *ex parte* presentations are reminded that memoranda summarizing the presentations must contain summaries of the substance of the presentations and not merely a listing of the subjects discussed. More than a one- or two-sentence description of the views and arguments presented generally is required. See 47 C.F.R. § 1.1206(b). Other rules pertaining to oral and written *ex parte* presentations in permit-but-disclose proceedings are set forth in section 1.1206(b) of the Commission’s rules, 47 C.F.R. § 1.1206(b).

⁹ 2007 Pilot Program Selection Order at 20373, para. 33. Although Pilot Program participants must file their funding commitment requests by June 30, 2010, they may receive funding under the Pilot Program for five years from the date of their initial funding commitment letter from USAC. *Id.* at 20362, 20374, 20409, paras. 4, 35, 94.

All comments should refer to GN Docket Nos. 09-47, 09-51, and 09-137; and WC Docket No. 02-60. Comments in response to this Public Notice will also be filed in appropriate pending proceedings. Please title comments responsive to this Notice as “Comments—NBP Public Notice # 17.” Further, we strongly encourage parties to develop responses to this Notice that adhere to the organization and structure of the questions in this Notice.

Comments may be filed using (1) the Commission’s Electronic Comment Filing System (ECFS), (2) the Federal Government’s eRulemaking Portal, or (3) by filing paper copies.¹⁰ Comments can be filed through the Commission’s ECFS filing interface located at the following Internet address: <http://www.fcc.gov/cgb/ecfs/>. Comments can also be filed via the Federal eRulemaking Portal: <http://www.regulations.gov>.¹¹ Generally, only one copy of an electronic submission must be filed. In completing the transmittal screen, commenters should include their full name, U.S. Postal Service mailing address, and the applicable docket or rulemaking number. Parties who choose to file by paper must file an original and four copies of each filing.

Filings can be sent by hand or messenger delivery, by commercial overnight courier, or by first-class or overnight U.S. Postal Service mail (although we continue to experience delays in receiving U.S. Postal Service mail). All filings must be addressed to the Commission's Secretary, Office of the Secretary, Federal Communications Commission.

- The Commission’s contractor will receive hand-delivered or messenger-delivered paper filings for the Commission's Secretary at 236 Massachusetts Avenue, N.E., Suite 110, Washington, D.C. 20002. The filing hours at this location are 8:00 a.m. to 7:00 p.m. All hand deliveries must be held together with rubber bands or fasteners. Any envelopes must be disposed of before entering the building.
- Commercial overnight mail (other than U.S. Postal Service Express Mail and Priority Mail) must be sent to 9300 East Hampton Drive, Capitol Heights, MD 20743.
- U.S. Postal Service first-class mail, Express Mail, and Priority Mail should be addressed to 445 12th Street, S.W., Washington, D.C. 20554.

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For further information about this Public Notice, please contact Ernesto Beckford at (202) 418-1523.

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¹⁰ See Electronic Filing of Documents in Rulemaking Proceedings, 63 Fed. Reg. 24121 (1998).

¹¹ Filers should follow the instructions provided on the Federal eRulemaking Portal Website for submitting comments.