

Executive Office
M.C. 22-01
100 North Academy Ave.
Danville, PA 17822-2201
570-271-6467 Tel
570-271-7498 Fax

Frank J. Trembulak
Executive Vice President
Chief Operating Officer

GEISINGER
HEALTH SYSTEM

August 16, 2012

Ms. Marlene H. Dortch
Office of the Secretary
Federal Communications Commission
445 12th Street, SW, Room TW-A325
Washington, DC 20554

RE: Response to WC Docket No. 02-60 and DA 12-1166

Dear Secretary Dortch:

As a Pilot Program participant, Geisinger Health System¹ ("Geisinger") appreciates the opportunity to formally comment on Public Notice DA-12-1166.

Geisinger is an integrated health services organization internationally recognized for its innovative use of the electronic health record, and for the development and implementation of innovative care delivery models including ProvenHealth Navigator®, an advanced medical home model, and ProvenCare® programs. The system serves more than 2.6 million residents throughout 44 counties in central and northeastern Pennsylvania.

1. Because broadband connectivity continues to be expensive and/or simply not available in many rural areas, many aspects of the Pilot program are critical to the future of telehealth nationwide.

Geisinger strongly endorses Rural Health Care Reform providing funding opportunities until all rural and underserved areas have sufficient, affordable bandwidth competitive with their urban counterparts. Doing so will enable rural community hospitals to provide genuinely patient-focused, coordinated care regardless of location. This proposal aligns with the Pilot program's goal of facilitating the creation of a nationwide broadband network dedicated to healthcare delivery.

2. No formal comment.

¹ Throughout this document the acronym "GHS" or the terms "System," "Geisinger" or "Geisinger Health System" shall refer to the entire Health Care System comprised of the Geisinger Health System Foundation (the "Foundation") as parent and all subsidiary corporate entities comprising the Health Care System.

3. When the Pilot program was announced, Geisinger briefly considered physically constructing a network. Given the location of the hospital partners Geisinger planned to connect, the need for a ring network to provide the level of reliability required for healthcare, and the cost of fiber construction at \$40,000/mile, the cost of the network would have exceeded \$6 million and ongoing maintenance would have been detrimental to sustainability. In addition, funding would not be available for fiber construction to add partners to the network in the future.
4. Urban and for-profit entities should be considered eligible and this will benefit the nation as a whole. Many for-profit community hospitals treat underserved populations and are severely resource constrained. By including these entities, all patients would be covered regardless of where they choose to receive their healthcare and it allows more sites in diverse areas to participate in telehealth programs. Five community hospitals in Geisinger's region with an average bed size of 178 are for-profit and are currently considered ineligible for FCC funding to participate in telehealth programs. Profit margins at these hospitals preclude them from implementing robust broadband and from gaining the advantages of telehealth.

Geisinger recommends harmonizing the Rural Health Care Reform so that funding can be obtained for telemedicine equipment. This would help specialized organizations like Geisinger provide simpler, more usable telehealth solutions to resource constrained community hospitals.

I. CONSORTIA

5. Geisinger agrees that filing as consortia takes the administrative burden off the small healthcare providers who do not have the time or resources to apply for funds through the Rural Health Care Reform program. Billing service providers as a consortium in the Pilot program was very helpful.
6. Geisinger is concerned about the concept of transitioning Pilot program participants to the Primary program as the goals of the two programs are very different. While both programs seek to enhance rural healthcare, the Pilot program encourages the use of broadband networks to ease healthcare in rural areas, whereas the Primary program's purpose is to offset the higher cost of connectivity. Geisinger's fear is that the lower level of reimbursement available via the Primary program, coupled with continued financial pressures, will cause some members of our network to drop out.
 - a. Consortium application process. - Geisinger agrees with the concept of obtaining and submitting a letter of authorization ("LOA") at the request-for-funding-

commitment stage rather than the request-for-service stage. By waiting until the competitive bidding process is complete gives the participant an idea of pricing before commitment and saves the consortium from soliciting unrealistic partners.

- b. Post-award reporting requirements. - Geisinger agrees with the current requirements of filing quarterly reports.
- c. Site and service substitution. - Geisinger agrees with the current process.

II. INCLUSION OF URBAN SITES IN CONSORTIA

- 7. The definition of "rural" is inconsistent with other state and federal programs and impedes the ability to coordinate multiple federal programs for a single telehealth project.
- 8. No formal comment.
 - a. Proportion of urban or rural sites in consortia. - Geisinger agrees with allowing a certain percent of urban sites in a project. Geisinger also suggests including for-profit organizations to this category for reasons stated above.
 - b. Limiting percentage of funding available to urban sites.
 - c. Impact on Fund.
 - d. Impact on network design.
 - e. Role of urban health care providers if not funded.
 - f. Grandfathering of urban sites already participating in Pilot projects.

III. ELIGIBLE SERVICES AND EQUIPMENT

- 9. No formal comment.

10. No formal comment.

- a. Point-to-point connectivity. - Due to the variety of broadband solutions, Geisinger agrees that the term "point-to-point" is too restrictive and does not allow for the likely changes in and evolution of services over time. A more functionally-oriented description, such as "broadband data communications arrangement interconnecting the proposed facilities" would be sufficient if this adequately describes the intent of the Program.
- b. Eligible non-recurring costs (NRCs).
- c. Limited Funding for Construction of Facilities in Broadband Service Program. - Going forward, Geisinger would greatly appreciate programs that subsidize the last-mile costs to connect to existing networks, minimally to those being created under Broadband Technology Opportunities Program ("BTOP") grants, such as those being built by the Keystone Initiative for Network Based Education & Research ("KINBER") and the Pennsylvania Mountain Healthcare Alliance ("PMHA"), but possibly also to carrier networks.

The former would leverage previous investments and encourage healthy growth of those networks, ensuring their future. The latter would compensate for the "much-longer last mile" typical of rural areas that can make recurring costs unaffordable. Such a program might be structured as a combination of the Primary program and the Pilot program, with carriers bidding the required up-front installation costs to provide a specific service at a long-term recurring cost not exceeding the cost of that service in a metropolitan area. This would have the desirable side-effect of bringing fiber into otherwise fiber-less areas.

- d. Ineligible sites and treatment for shared services/costs.

IV. COMPETITIVE BIDDING PROCESS AND RELATED MATTERS

11. No formal comment.

- a. Competitive bidding process.
- b. Requirement to obtain competitive bids.
- c. Multi Year Contracts.

- d. Existing Master Service Agreements (MSAs).
- e. Eligible service providers.

V. BROADBAND NEEDS OF RURAL HEALTH CARE PROVIDERS

12. No formal comment.

- a. Telemedicine. - Within Geisinger, bandwidth requirements for family practice clinics have grown from 1.5 Mbps several years ago to 10 Mbps. Major clinics are slowly being upgraded from 100 Mbps to gigabit connectivity. In both cases this is driven by specialties such as radiology and cardiology offering services at community clinics to reduce patients' need to travel.

In regard to connectivity to partner hospitals, the focus of the Pilot program, bandwidth requirements are more modest. An important outcome of the Pilot program was that Geisinger and its partner hospitals were able to experiment with various telemedicine technologies, determine which were good fits for the various hospitals, and determine the bandwidth needs. Community hospitals are not in a position to fund high-bandwidth connections and the Pilot program allowed Geisinger to determine that a cost-effective alternative will be a T1 line to support diagnostic video combined with a virtual private network ("VPN") for the transfer of studies. Geisinger will use the additional Pilot program funding period to cover the transition to this affordable alternative. Geisinger has some concern, however, that longer term, as the size of imaging studies inevitably increases, bandwidth requirements may exceed what can reasonably be expected from a VPN.

In regard to teleradiology specifically, bandwidth requirements vary greatly depending on the type of study. In the case of a follow-up X-ray that the patient's physician will review at an upcoming appointment, i.e., a situation where the image file will be small and there is no urgency, a 1.5 Mbps connection typically provided at a family practice is adequate. At the other extreme, when a high-resolution study is done and real-time involvement of a radiologist is needed, a minimum of 10 Mbps, preferably 50 Mbps, is required. (These numbers are based on experience with the particular picture archiving and communication system ["PACS"] product that Geisinger uses, which is relatively bandwidth-friendly.)

Geisinger anticipates telemedicine will expand in the direction of innovative technology such as genome biology interpretations where confirming a diagnosis or identifying patients with high risk of conditions may lead to better patient outcomes.

- b. Electronic Health Records. - There is no doubt that the adoption of meaningful use will improve quality, safety, efficiency, and care coordination. Because involvement dictates Centers for Medicare & Medicaid Services ("CMS") Medicare (and Medicaid) incentives, many providers will take advantage of discounts. The ability to view healthcare information when it is needed will improve patient care and boost telemedicine to new heights.

Because implementation of an electronic medical record ("EMR") is expensive, it is likely that many rural physician practices and rural community hospitals will use an EMR hosted off-site. This will increase not only bandwidth requirements but also reliability requirements (please see comments under "d", below) for rural healthcare. While a minimum of 10 Mbps at physician practices and a minimum of 100 Mbps for a community hospital can be adequate to support the EMR itself, use of an EMR generally includes transition to a paperless environment, which implies PACS and business imaging. Depending on how these systems are hosted and integrated into the EMR, bandwidth requirements can be much higher.

- c. Other telehealth applications.
- d. Service quality requirements. - Reliability is extremely important since the connections support real-time patient care, in many cases urgent care. Service providers are responsible for adhering to the specifications set forth in the request for proposal ("RFP") and contract. Geisinger connects its various hospitals to redundant data centers via a pair of circuits to each hospital that are guaranteed by the carrier to be completely diverse in terms of fiber paths, equipment, etc. This requires that the carrier's network have ring architecture or equivalent passing through the hospital, as opposed to a single run of fiber arriving at the hospital from some distant location. Because of the distances involved, the incremental cost of ring or redundant network is much higher in rural areas, and these costs are reflected in the cost of service. For example, in an urban area a carrier could build a fiber ring with a diameter of 20 miles and service dozens of customers; in a rural area only a few customers are likely to be served by a similarly-sized ring.

While the applications used by most businesses and organizations have become less latency-sensitive over the past 5–10 years, healthcare is still plagued by niche systems that are latency sensitive. The major applications, such as EMRs and PACS, are still productively usable in situations where latency (one-way travel time, i.e., one-half the ping time) is as high as 10mS, and within an area the size of a telephone area code ping time will usually be less than that. Carriers will generally not guarantee latency to be less than 50mS, which is a concern. While unrelated to this proceeding, it would be beneficial for the FCC to encourage carriers to build lower-latency networks.

As specialties such as neurology and cardiology open outreach sites in rural areas, the departments need the support of their specialized clinical systems, and these systems tend to be of older technology not intended for use in a wide area network ("WAN") environment, i.e., they were designed to be used within a department or within a private practice. As little as 2mS of latency can make some of these systems unacceptably slow. Given that it would be unreasonable to ask carriers to provide service with latency this low, although one major carrier did provide such a service to Geisinger on request, the hope is that future versions of these systems will be less latency sensitive.

- e. Cost savings from broadband connectivity. - Many rural hospitals are concerned about their sustainability because a large majority of their higher acuity patients are transferred to tertiary care centers. The closing of a hospital can cause great hardship for the entire community. Studies have shown that within five years of a community hospital closing, the community begins to deteriorate.

Approximately one-third of transferred patients can be taken care of closer to home if the appropriate resources are available. This benefits both the patients and the hospital through more care delivered locally and institutional sustainability, respectively. Telemedicine provides the "life line" to rural community hospitals which allows their patients to be "treated in place." Rural broadband at an affordable cost (retaining permanently the 85% subsidy) affords those facilities to remain open.

A possibly overlooked cost savings associated with broadband connectivity is elimination of media transportation. Without broadband, patient information, image studies in particular, have to be physically transported to the ordering physician, often by courier to ensure timeliness.

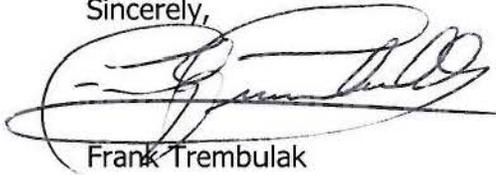
Benefits go well beyond financial. The positive results recognized by Geisinger, include decreased length of stay for intensive care unit ("ICU") and hospital

Ms. Marlene H. Dortch
Federal Communications Commission
RE: Response to WC Docket No. 02-60 and DA 12-1166
August 16, 2012
Page 8 of 8

patients, and improved mortality rates for ICU patients. These findings captured the attention of the leadership of several rural hospitals who Geisinger is now working with to develop tele-ICU programs and would benefit from broadband discounts.

In summary, Geisinger stands firmly behind the fact that as the demand for electronic health information exchange increases, broadband telecommunication lines will continue to be the answer to reach underserved patients and ensure that community hospitals remain viable.

Sincerely,

A handwritten signature in black ink, appearing to read "Frank Trembulak", is written over a large, stylized circular flourish.

Frank Trembulak

cc: Chin Yoo
Telecommunications Access Policy Division
Wireline Competition Bureau
445 12th Street, S.W., Room 5-A441
Washington, DC 20554

Charles Tyler
Telecommunications Access Policy Division
Wireline Competition Bureau
445 12th Street, S.W., Room 5-A452
Washington, DC 20554