

**Office for the
Advancement of
Telehealth –
Program Report:
Integrus Health**

March 14, 2005

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1. Introduction and Background

As required by the Government Performance and Review Act (1993), all federal agencies must develop strategic plans describing their overall goals and objectives. These annual "GPRA Plans" contain quantifiable measures of each program's progress in meeting its own stated goals and objectives.

The Performance Measurement Instrument was developed by the Office for the Advancement of Telehealth (OAT) with its grantees and Abt Associates Inc. An advisory committee of telemedicine program directors, federal officials, and Abt staff conferred and developed four types of measures to fulfill GPRA requirements to report to Congress on the impact of OAT's telehealth grant programs. The instrument was developed with the following four goals in mind:

- I. Improving access to needed services
- II. Reducing rural practitioner isolation
- III. Improving health system productivity and efficiency
- IV. Improving patient outcomes.

In each of these categories, specific indicators were designed and data are reported regularly through a performance monitoring website. In addition to providing required GPRA data, OAT hopes to use the reported information to demonstrate the "value-added" that telehealth services contribute to improving health care. OAT has incorporated these performance assessment tools into the routine reporting required as part of the mid-year and annual reports required of their grantees.

There are two data reporting periods each year; during these biannual reporting periods data are reported for the previous six months of activity. Programs have approximately six weeks to enter their data into an interactive website designed by Abt Associates Inc. during each biannual reporting period. The data reflected in the following report are from three reporting periods (one and a half years), October 2002-February 2003, March 2003-August 2003, and October 2003-February 2004.

Disclaimer: This report is based solely on the data that your program entered into the website. Therefore, the completeness and accuracy of this report reflects of the quality of data your program submitted.

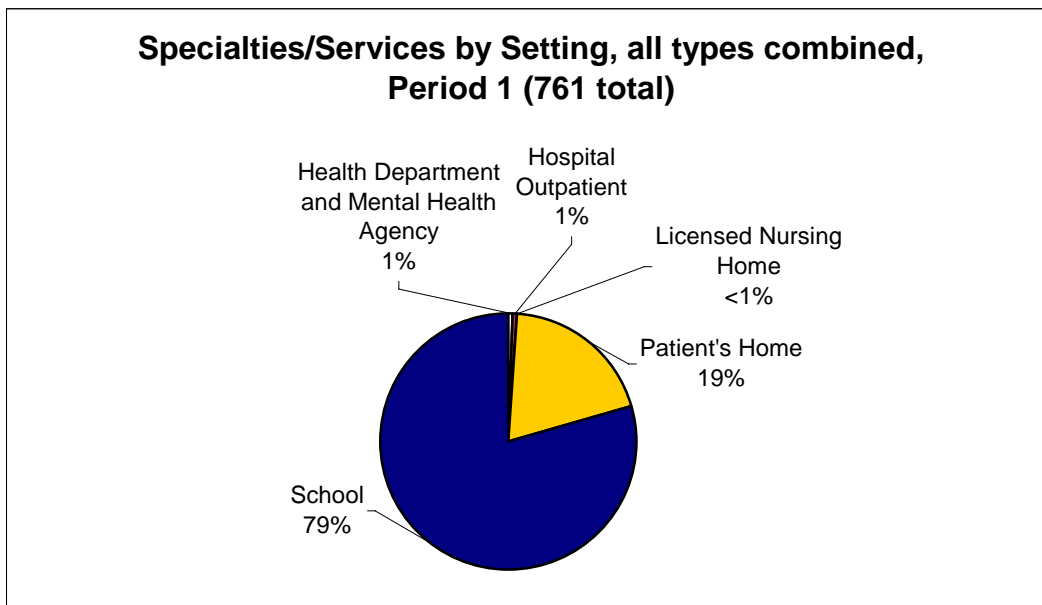
2. Services/Sessions by Patient Setting

Telemedicine can bring services to patients in many settings. This measure was created to show the diversity of settings where telemedicine takes place. The three different time periods shown cover one and a half years of data collection.

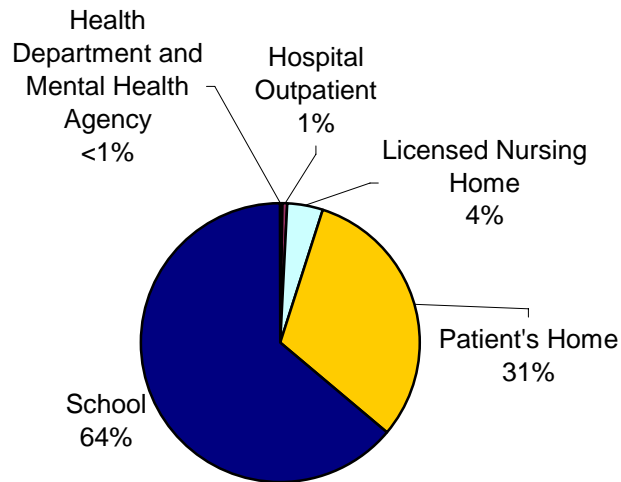
The charts and table below combine all services (interactive as well as store-forward) and combine all specialties, to display services by patient setting for three consecutive time periods.

Key Findings:

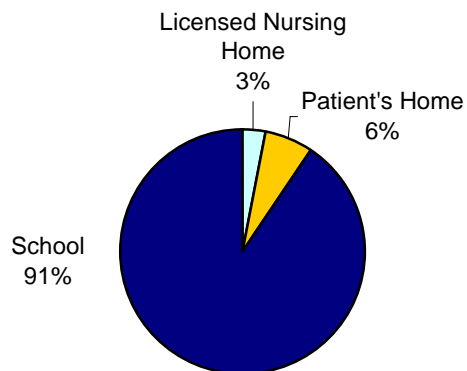
The overall total number of services increased by 930 across the three periods. Most of the increase was in the growth of existing settings, not due to the addition of new settings. The school setting accounts for over 64-91% of all interactions, across the three periods. Between periods 1 and 3, school volume grew by 924 encounters. The relative distribution of care/services provided in various settings was otherwise quite consistent across the three data periods.



Specialties/Services by setting, all types combined, Period 2 (903 total)



Specialties/Services by setting, all types combined, Period 3 (1,691 total)



Setting	P1	P2	P3	P1,P2,P3 combined	P1%	P2%	P3%
Health Department and Mental Health Agency	4	2	0	6	0.53%	0.22%	0.00%
Hospital Outpatient	4	6	0	10	0.53%	0.66%	0.00%
Licensed Nursing Home	1	37	53	91	0.13%	4.10%	3.13%
Patient's Home	147	282	109	538	19.32%	31.23%	6.45%
School	605	576	1529	2,710	79.50%	63.79%	90.42%
Total	761	903	1,691	3,355	100%	100%	100%

3. Specialty and Service Volume

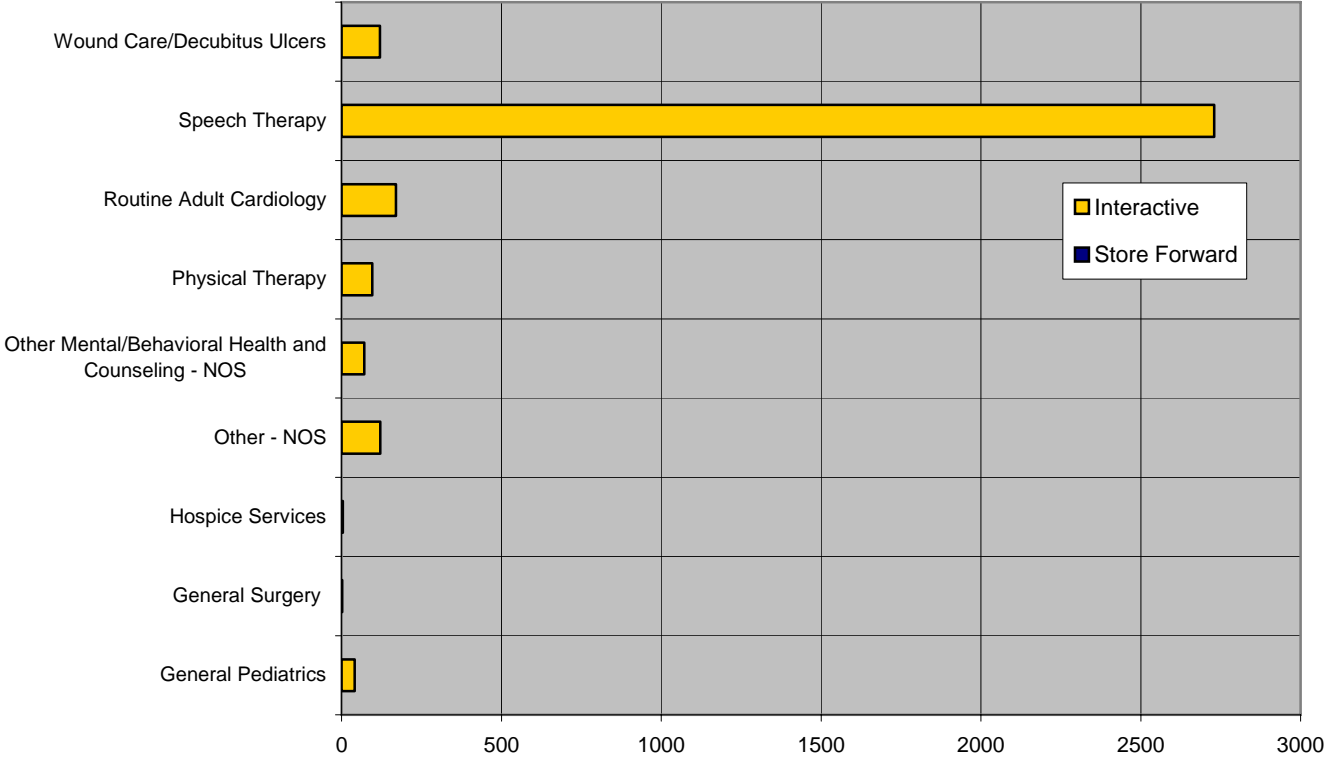
Telehealth care can be provided in the form of interactive consultations, between clinicians and patients or between clinicians and other clinicians consulting about a patient. Telehealth care can also be provided in a store-forward manner, where images or other data are sent to a clinician who picks them up at his/her convenience. Some specialties are more likely to be provided in an interactive manner (e.g. mental health) and others in a store-forward manner (e.g. radiology).

The charts and tables show the volume of services across all specialties for both interactive and store-forward services, with periods 1-3 combined. The charts show most of the specialties/services, but some could not be shown to-scale with other specialties because of the difference in volume.

Key Findings:

Most specialties/services require interactive sessions, speech therapy being the best example. This program only had interactive sessions; there were no store and forward data or image transfers.

Number of Encounters/Data Transfers, by Type: P1-P3 combined



Number of Encounters/Data Transfers, by Type: P1-P3 combined	Interactive	Store Forward
General Pediatrics	41	0
General Surgery	2	0
Hospice Services	4	0
Other - NOS	121	0
Other Mental/Behavioral Health and Counseling - NOS	71	0
Physical Therapy	96	0
Routine Adult Cardiology	170	0
Speech Therapy	2730	0
Wound Care/Decubitus Ulcers	120	0
Total	3355	0

4. Community-Level Services/Specialties Available Only via OAT Networks

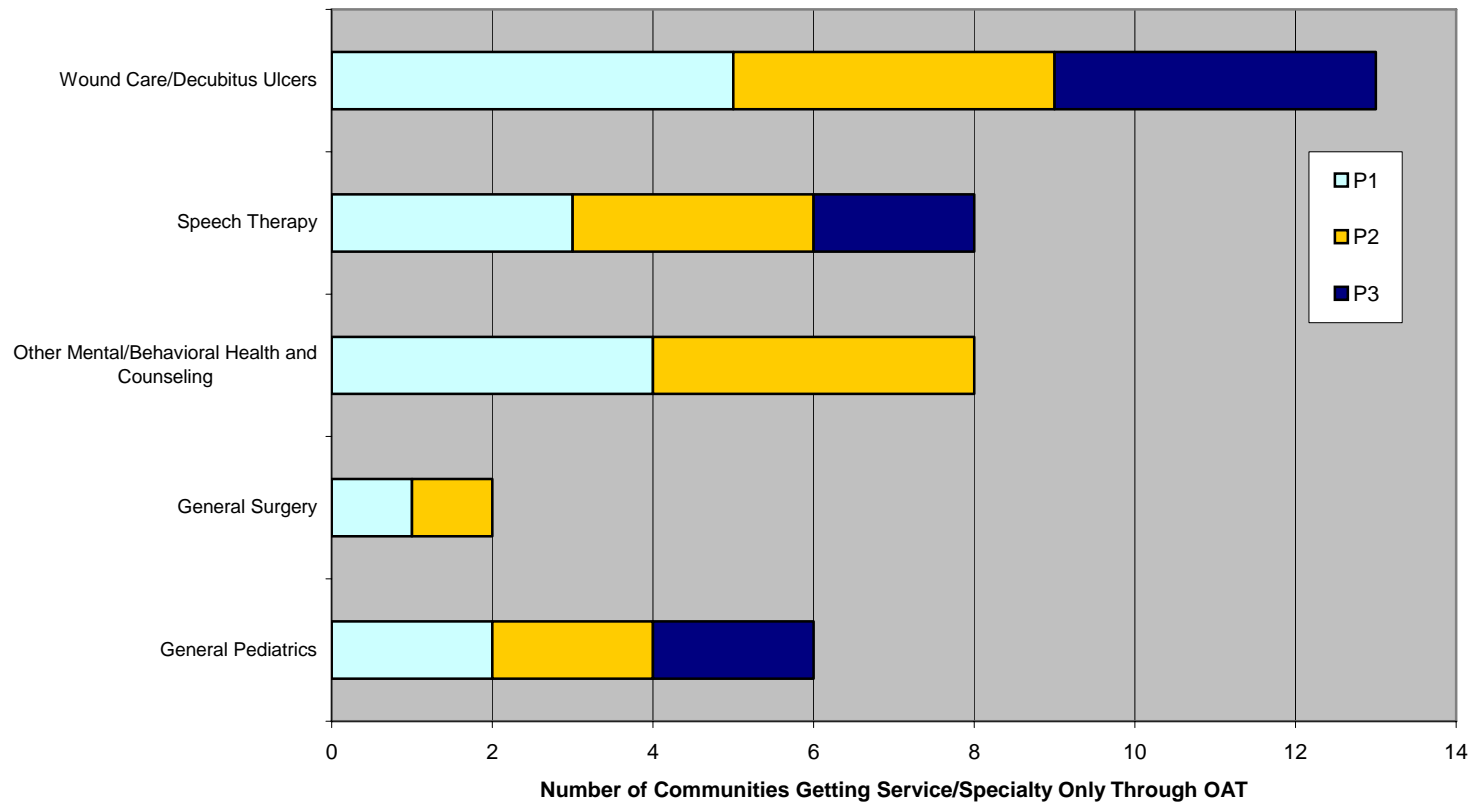
In some rural communities there are no local or traveling clinicians, and no other telehealth networks (non-OAT funded) providing specialty services. In these communities OAT funded telemedicine is the only access to certain specialties; patients have no other way to receive these services in their communities and must travel to find such specialists. The following measure was created to show how many rural communities depend on OAT funded programs for access to specialty services during periods 1-3.

The chart and table below show the specialties most commonly offered by this OAT program, which are not otherwise available in their communities. The total length of each bar indicates the number of communities where this program is offering each service and for which there is no other local availability.

Key Findings:

Among the rural communities served by this OAT grantee, many receive basic and specialty services that would not otherwise be available. Wound care, speech therapy, and other mental/behavioral health counseling were the most common specialty services made available through OAT that were not otherwise available. These services were not used/needed in great numbers, but were offered. It is also important to note that this program offered some services that were not sought by the communities and therefore are not represented in the number of encounters shown previously.

Communities with Specialties/Services Available Only Through OAT TM, no other availability



Specialty/Service OAT Funded Only	P1	P2	P3
General Pediatrics	2	2	2
General Surgery	1	1	0
Other Mental/Behavioral Health and Counseling	4	4	0
Speech Therapy	3	3	2
Wound Care/Decubitus Ulcers	5	4	4

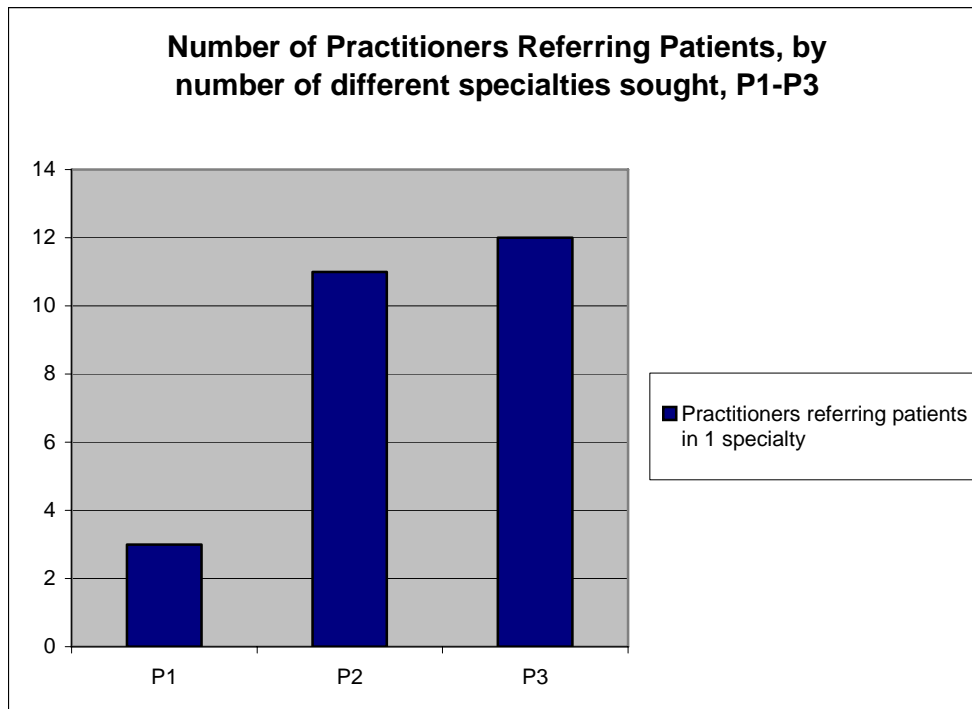
5. Number of Practitioners Referring Patients for Telemedicine, by number of different specialties sought

Practitioners in rural and underserved areas can refer patients to telemedicine for a wide array of services. Teachers may refer students for speech therapy, primary care nurses may refer patients for disease management, and physicians may refer patients for specialist consultations. As community practitioners gain experience with telemedicine, they may begin to consider telemedicine as an option to meet a wider array of patient needs. Although some OAT grantees focus on a fairly narrow range of services (e.g. school based services, cancer care, mental health), most make many different services and specialties available to their remote practitioners and patients.

The height of the columns in the chart below indicates that the total number of referring practitioners increased between period 1 (3 referring practitioners), period 2 (11) and period 3 (12). Within each column, the colored bars indicate the number of different specialties sought by referring practitioners.

Key Findings:

All of the referring practitioners sought just a single specialty for their patients via telemedicine for periods 1-3. These practitioners may truly have just one type of patient appropriate for telehealth services or this could reflect the emphasis of the Integriss program.



Number of Specialties	P1	P2	P3
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Practitioners referring patients in 1 specialty	3	11	12
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6. Number of Practitioners Referring Patients for Telemedicine, by number of separate referrals made

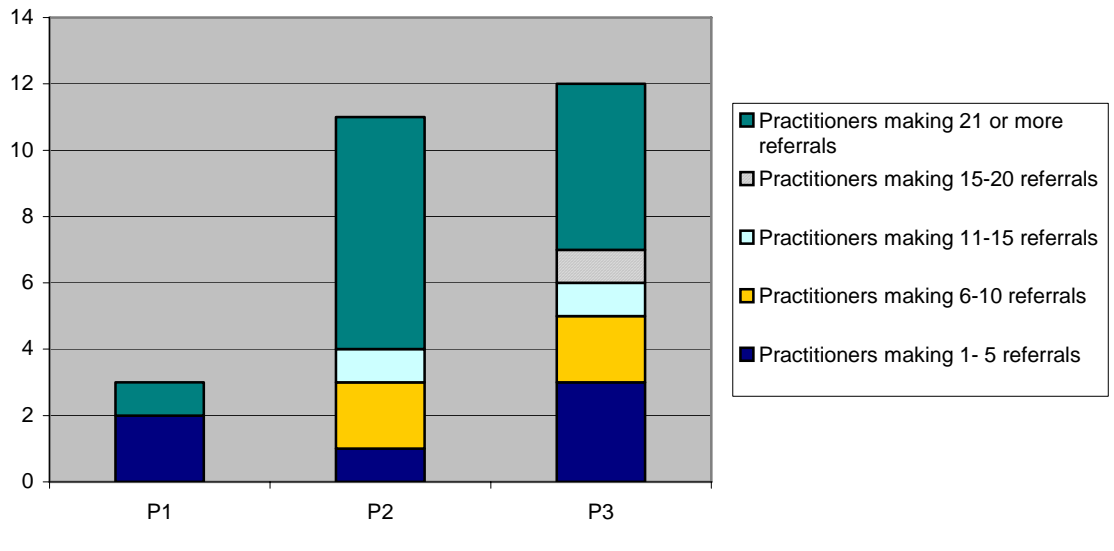
Practitioners in rural and underserved areas can refer patients to telemedicine for a wide array of services. Some refer many patients, others refer very few. Some practitioners are in solo-practice and are required to meet all the needs of an entire community of people; such practitioners may rely more on telemedicine. Other practitioners serve a specific type of patient only, and once all referrals are made and these patients are getting ongoing care through telehealth, no new referrals are needed. For example, a teacher may refer all her students with speech impediments in one year when the service first becomes available via telemedicine, and in the next year only needs to refer a few newly diagnosed students. In this case, the referring practitioner (the teacher) could have made many referrals in year 1 and very few in year 2. Alternatively, as practitioners begin to realize the value of telehealth services, they may make more referrals; one might expect to see the number of referrals per practitioner increasing over time.

The height of the columns in the chart below indicates that the total number of referring practitioners increased between period 1 (3 referring practitioners), period 2 (11) and period 3 (12).

Key Findings:

For periods 1-3, 23% of referring practitioners made just 1-5 referrals; 15% made 6-10 referrals, 8% made 11-15 referrals, 4% made 15-20 referrals, and 50% made 21 or more referrals.

Number of Practitioners Referring Patients, by the number of separate referrals made, P1-P3



Number of Referrals	P1	P2	P3	Total	P1 - P3 %
Practitioners making 1- 5 referrals	2	1	3	6	23%
Practitioners making 6-10 referrals	0	2	2	4	15%
Practitioners making 11-15 referrals	0	1	1	2	8%
Practitioners making 15-20 referrals	0	0	1	1	4%
Practitioners making 21 or more referrals	1	7	5	13	50%
Total	3	11	12	26	100%

7. Supervision of Students/Trainees in Formal Educational Programs

The shortage of rural care clinicians has led the federal government and many states to encourage the training and placement of clinicians in rural areas. Training cannot take place, however, without supervision. Telemedicine systems can be used to provide required supervision of students/trainees who are fulfilling clinical training requirements in remote locations. A medical resident, doing an ambulatory care rotation in a rural community, for example, requires a certain amount of supervision in order to receive credit for this training experience. Some of this supervision can be provided remotely. This does not include informal mentoring or supervision, but only the supervision explicitly required to fulfill requirements for a degree, certification or licensure program.

This program did not have any formal supervision and mentoring sessions for periods 1-3.

8. Informal Supervision and Mentoring

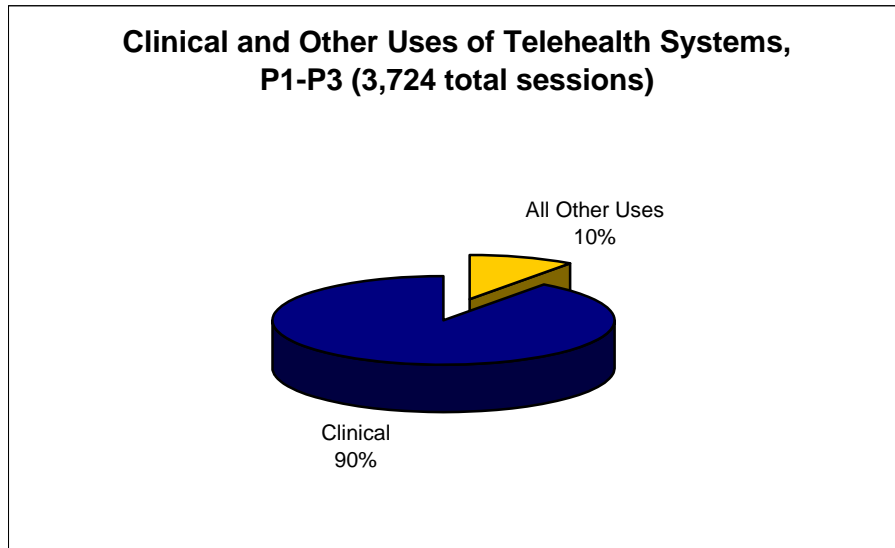
Isolation and lack of opportunities for support and access to colleagues are implicated in the dissatisfactions many clinicians feel in rural practice. Telemedicine systems can be used to provide informal oversight and mentoring of remote clinicians. Most commonly, this sort of oversight would involve a non-physician being supervised by a clinician (e.g. a physician's assistant practicing under the supervision of a physician in another community), or a mid-level clinician being mentored by an advanced-practice nurse. This does not include supervision of trainees in formal educational programs who require supervision to fulfill degree or licensure requirements, but rather the occasional advice or assistance that more advanced clinicians can provide to colleagues in remote locations.

The chart and data table show the number of such sessions provided by OAT grantees, by type of person being mentored over the course of one year.

This program did not have any informal supervision and mentoring sessions for periods 1-3.

9. Other Uses of Telehealth Systems

When telehealth systems are in place, linking many care providers, many kinds of interactions become possible in addition to clinical services to patients. Leveraging systems for other purposes that serve communities as well as providers is a goal of the OAT grant program. The following chart and table shows the balance between clinical care uses and other system uses over one and a half years.



Clinical vs. Other Sessions	P1	P2	P3	Total
All Other Uses	118	162	89	369
Clinical	761	903	1691	3355
Total Sessions	879	1065	1780	3724

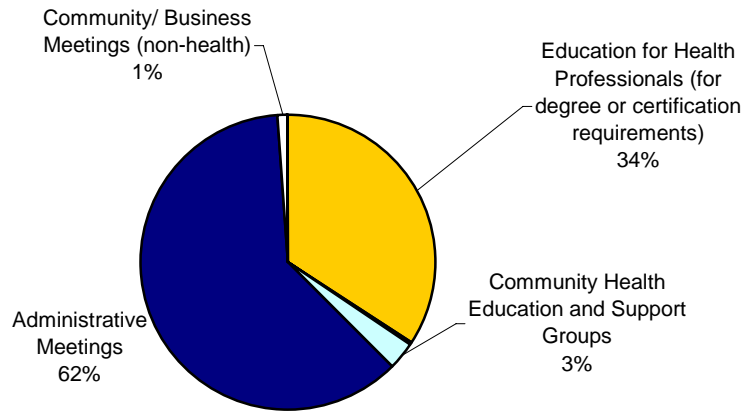
Specific Other Uses

The chart and table below display one and a half years of activities beyond clinical patient care, for which telehealth systems provided support and connectivity.

Key Findings:

More than one half (62%) of other system uses were for the purpose of administrative meetings. Some of these meetings concerned the telehealth network itself (operations, staffing, etc.) and others were administrative meetings of health care providers. The second largest usage (34%) was for Education of Health Professionals (for degree or certification requirements). Telehealth systems were also used for community purposes such as health education and support groups, commercial video-conferencing, and community/ business meetings unrelated to the provision of health care.

Other Uses of Telehealth Systems during a one and a half years P1-P3 (369 total sessions)



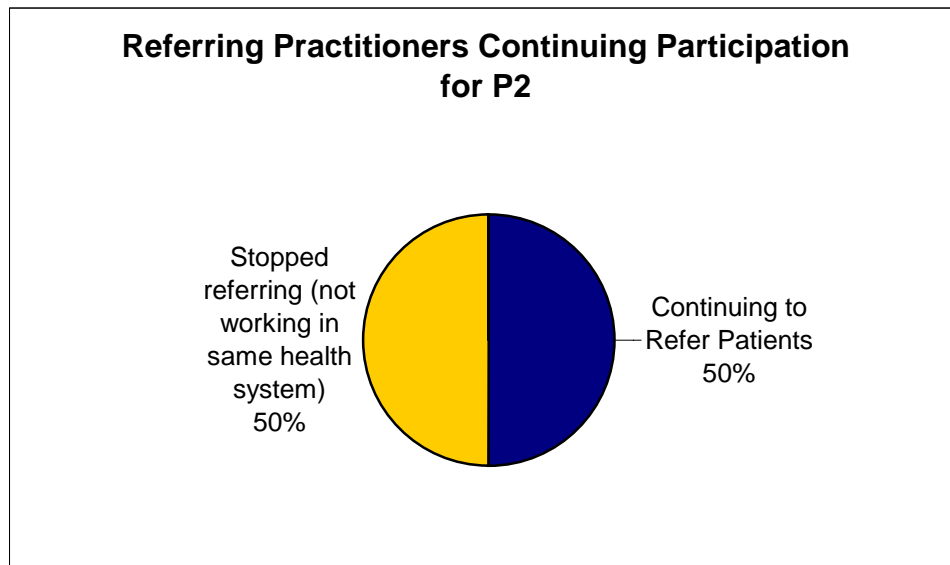
Other Uses of the System, P1-P3	Total Sessions	Average # Sites
Education for Health Professionals (for degree or certification requirements)	126	8
Other Education for Health Professionals (elective CME)	1	2
Retrospective Case Review	0	0
Grand Rounds	0	0
Community Health Education and Support Groups	11	3
Administrative Meetings	227	8
Community/ Business Meetings (non-health)	4	2
Commercial Conferencing Services	0	0
Other	0	0
Total	369	23

10. Referring Practitioners Continuing Participation from one 6-month period to the next

Practitioners who refer patients for teleconsults may do so throughout an entire 12-month period. From the beginning of the year to the end there may be new practitioners referring patients to a telemedicine program. In addition, some referring practitioners may refer patients in the first half of the year but not in the second half. Their reasons for discontinuing are likely to be diverse: retirement or relocation, a change in affiliation (no longer working in the same health system), or a reluctance to continue referring patients for teleconsults, for whatever reason. Or they may have had no patients requiring teleconsults during the second half of the year. The following chart and data table indicate the continuing participation of referring practitioners, from October 2002-February 2003, March 2003-August 2003, and October 2003-February 2004.

Key Findings:

There was one practitioner who continued to refer in periods 2 and 3 and one who stopped referring in period 2 because he/she left the health system. There were only two new referring practitioners in period 1 who had not previously been involved. These data reflect what was reported to OAT but they do not correspond to the previous data in section 6: “Number of Practitioners Referring Patients for Telemedicine, by number of separate referrals made”.



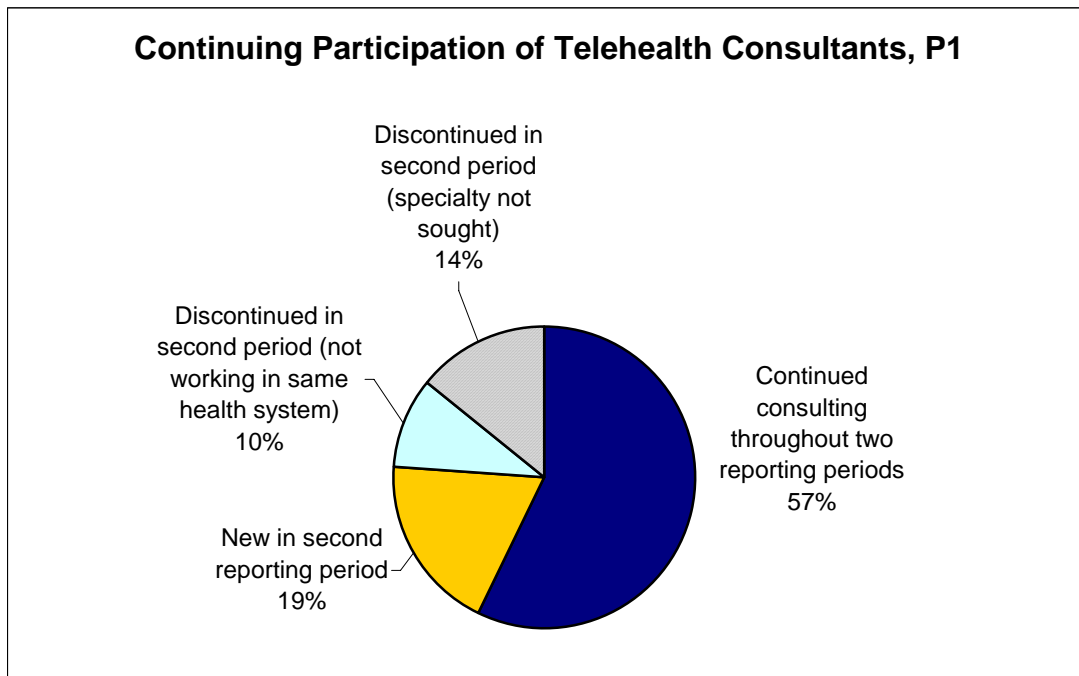
Referring Practitioners Continuing Participation	P1	P2	P3
Continuing to Refer Patients	0	1	1
New Referring Professional	2	0	0
Stopped referring (not working in same health system)	0	1	0
Stopped referring (no need for consults)	0	0	0
Stopped referring (refused to refer)	0	0	0

11. Consulting Clinicians Continuing Participation From One 6-month Period to the Next

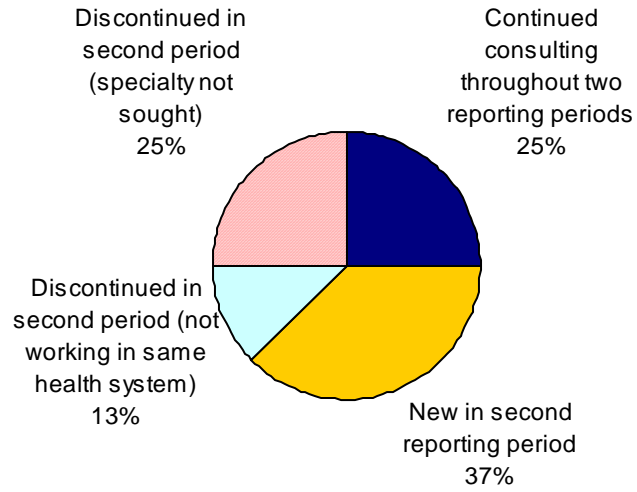
Clinicians providing teleconsults may do so throughout an entire 12-month period. In addition, from the beginning of the year to the end there may be new consultants added to a telemedicine program. Some clinicians may provide consults in the first half of the year but not in the second half. Their reasons for discontinuing are likely to be diverse: retirement or relocation, a change in affiliation (no longer working in the same health system), or a reluctance to continue with teleconsulting for whatever reason. Or there may have been no requests for their services during the second half of the year. The following chart and data table indicate the continuing participation of consulting clinicians for a one and a half year period (P1-P3).

Key Findings:

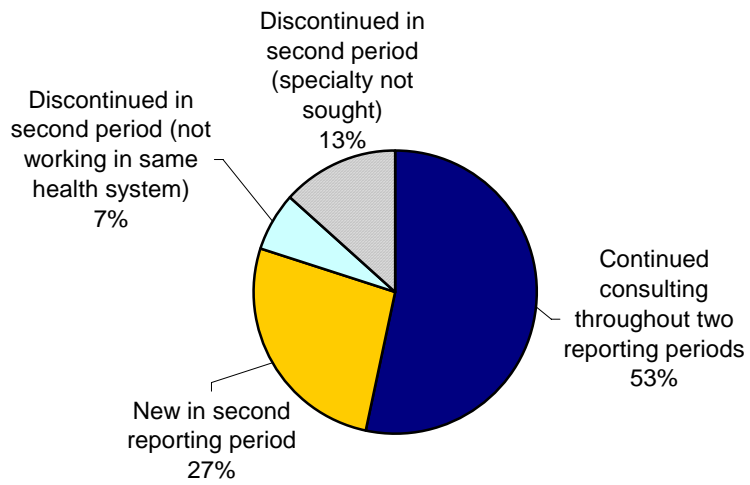
Approximately, 25-57% of the clinicians provided consults in all periods – their services were sought and they complied. And about 19-37% of clinicians who consulted in the second periods were new – their assistance had not been sought in the previous periods. Impressively, there were no clinicians who consulted in the past and were asked to consult again, but refused. And there were very few who left their practices and thus could not be tapped as consultants (7-13%). This indicates that consultants who experience telemedicine find it acceptable and are willing to continue providing consults if needed.



Continuing Participation of Telehealth Consultants, P2



Continuing Participation of Telehealth Consultants, P3



Continuing Participation of Telehealth Consultants	P1	P2	P3
Continued consulting throughout two reporting periods	12	2	8
New in second reporting period	4	3	4
Discontinued in second period (not working in same health system)	2	1	1
Discontinued in second period (specialty not sought)	3	2	2
Discontinued in second period (refused)	0	0	0

12. Patient Travel Saved

For many patients, travel from rural communities to medical centers poses a significant barrier to timely and necessary care. In some states, distances are simply prohibitive and in other states road and weather conditions make travel problematic. All care provided remotely through an OAT telemedicine grantee is medically necessary; visits are not conducted without the concurrence of a rural practitioner and/or the consulting specialist. Thus patients would have been advised to travel to a medical center elsewhere for each of these sessions, in the absence of telemedicine.

To estimate the travel patients save through availability of telehealth technologies, we calculated the distance between each rural telemedicine installation and the location of the consulting specialist (excluding home care visits, where by definition the nurse would travel to the patient, not the other way around). It is possible that the consulting specialist is not the closest option for a given patient, but it is not possible to estimate which specialist a patient would have seen in the absence of telemedicine – we can only estimate the travel that would have been required to see the specialist offered by the telemedicine network. Thus the figures that follow are probably an over-estimate. In many cases, however, there are no closer specialists. In eastern Montana, for example, there are no pediatric psychiatrists at all; the closest care is the telepsychiatry program in Billings.

Key Findings:

The average patient session saved 251 driving miles for the patient/family involved. Using the \$.405 per mile federal travel cost, at the time, this translates to \$101.51 saved for each patient/family session by avoiding these miles on the road (overall average for a one and a half year time period).

Period	Total Patient Sessions	Total Patient Travel Miles	Average Miles/Session	Total Travel \$ Saved	Average Travel \$ Saved/Session
P1	761	20,656	27	\$8,365.68	\$10.99
P2	903	195,762	217	\$79,283.61	\$87.80
P3	1,731	879,358	508	\$356,139.99	\$205.74
Total	3,395	1,095,776	251	\$443,789.28	\$101.51

Appendix

Glossary of Terms

Encounter Types:

An “encounter” is a single session of patient care conducted through telemedicine. This can be done in a variety of formats (as seen below).

Interactive/Real-Time Encounters (IN): Encounters done in an interactive (real-time) video-conferencing format.

Store-and-Forward Encounters (SF): Encounters done in a format where information/images are gathered and sent electronically to be viewed at a later time by a telehealth provider; encounters are not interactive and not in real-time.

Non-clinical uses:

There are many ways that communities leverage the availability of telecommunications, for purposes beyond clinical patient care. These other services are enabled by the availability of the infrastructure and demonstrate added value communities realize from having a telemedicine program.

Examples include grand rounds, administrative meetings, community/business meetings (non-health), and commercial conferencing services.

Referring Practitioners:

A “referring practitioner” is an individual clinician who referred patients for care via telemedicine.

Examples include rural health clinic nurse, school nurse, and a prison physician's assistant.

Referral Types:

Clinicians referring from remote site: These are the referrals made by a clinician at the patient/patient data location.

Specialists using TM to see their own patients: These are referrals made by a specialist at the consulting location. This is common for follow-up encounters between patients and specialists.

Patient ‘self-referrals’: These referrals are when a patient presents at a remote site requesting a TM encounter. The encounter was not requested by either a clinician at the remote site or a specialist at the consultant site. Since the inference to be made from this item is the reliance (and expansion) of referring practitioners on TM, these self-referrals should not be counted together with other referrals.

Supervision of Students/Trainees

Telemedicine can be used to extend formal clinical educational experiences to remote areas, allowing students interested in rural practice (or already in practice) to pursue their educations in these settings.

Supervisory Session: TM interactions used for the purpose of overseeing students or trainees involved in formal educational programs. These sessions are used to fulfill formal education, licensure or certification requirements.

Example:

A student PA doing a remote clinical rotation requires a certain number of supervised hours to complete degree requirements; this trainee is supervised by his/her instructor via telemedicine.

Informal Supervision and Mentoring

Telemedicine is also useful for supervising or mentoring remote practitioners of various kinds, who may occasionally require supervision from physicians or other more senior specialists. This supervision may be required by professional practice regulations, or may be requested by remote practitioners on an as-needed basis.

Supervision/Mentoring: Supervision of clinicians that is NOT REQUIRED to meet formal educational requirements. This includes sessions required to meet regulatory practice requirements, as well as supervision/advice requested by remote practitioners.

Example 1

A nurse-midwife requires supervision from a physician as part of her on-going provision of services.

Example 2

Voluntary skill enhancement programs or new training activity for nurses aides.

Example 3

A clinic nurse sutures a patient wound, while being supervised by a hospital-based physician.