

# PHILIPS

## NATIONAL STUDY ON THE FUTURE OF TECHNOLOGY & TELEHEALTH IN HOME CARE

---

Co-sponsored by

**National Association for Home Care & Hospice,  
Philips Home Healthcare Solutions  
and Fazzi Associates, Inc.**

April 2008



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## Acknowledgement

Conducting a study as large and as complex as the Philips National Study on the Future of Technology and Telehealth in Home Care required the support of numerous people and groups. Sponsors of the study would like to express our sincere appreciation to the following groups and individuals:

State Directors of the Home Care and Hospice Associations

Cindy Campbell, Fazzi Associates

Lindsay Doak, Fazzi Associates

Lynn Harlow, Fazzi Associates

Dr. Carl Townsend, Fazzi Associates

Mary St. Pierre, National Association for Home Care & Hospice

Jill Christians, Philips Home Healthcare Solutions

Karen Golden Russell, Philips Home Healthcare Solutions

Michael Lemnitzer, Philips Home Healthcare Solutions

The Over 1,000 Home Care Leaders  
Who Took the Time to Provide Input to the Study  
on the Study's Web Pre-Survey

The 976 Home Care Leaders Throughout the United States  
Who Graciously Agreed to Participate and Share Their Knowledge  
and Insights in Making This Study So Successful

## Philips Home Healthcare Solutions

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March 4, 2008

To the Home Care and Hospice Community:

Philips was pleased to sponsor a study of this magnitude that could provide insights to advance the home care industry. We believe that home health agencies will be a critical part of the solution to the U.S. healthcare crisis and ensure a continuum of care from the hospital to the home. Trends in society – an aging population, the increase in chronic diseases, a looming nursing shortage, and the desire by seniors to live independently in their home – all point to the need for better solutions to help the chronically ill and elderly enjoy a higher quality of life at home, with the support of easy-to-use technology that connects individuals to their care providers.

We were excited to work with Fazzi Associates, and to partner with the National Association of Home Care and Hospice (NAHC), in gathering input from home health agencies of all sizes and types across the U.S. and to share these findings at no cost to the field. The study's recommendations point to the central importance of integrating technology into clinical practice to ensure both quality patient care and operational efficiency, and in combining disease management and telehealth to achieve optimal clinical outcomes and financial performance.

Philips is committed to providing solutions for the home healthcare industry that embody our brand promise of 'sense and simplicity' – from Lifeline medical alert services that enable independent living at home to a growing portfolio of Remote Monitoring solutions that help clinicians manage patients with chronic conditions such as heart failure or pulmonary disease. Building on core competencies in cardiac care, Philips offers comprehensive Home Telehealth products and services, featuring wireless measurement devices and robust web-based clinical support for post-hospital discharge monitoring, as well as cardiac monitoring services, diagnostic arrhythmia and implanted device follow-up, from recently-acquired Raytel Cardiac Services. Philips hopes to partner with leaders in the home care field to help make a difference as the industry evolves and grows in the next few years. We graciously extend our appreciation to everyone who participated in this study.

Cynthia Pacheco, General Manager, Philips Telehealth Solutions

Mike Lemnitzer, Senior Director, Philips Telehealth Solutions



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Val J. Halamandaris, JD  
*President*

March 4, 2008

To the Home Care and Hospice Community:

The National Association for Home Care and Hospice was proud to sponsor this groundbreaking Philips National Study on the Future of Technology and Telehealth in Home Care. We are grateful to Fazzi Associates for helping us plan and execute this study. We believe that they did a truly amazing job of bringing us data which is important for the home care and hospice community as well as the Congress of the United States.

We are grateful to Philips for underwriting this most extensive study of telehealth to date. One finding that is particularly significant is that the utilization of telehealth by home care agencies also correlates directly with providing the highest quality of care. The study should provide a great deal of reassurance for patients and their families that home care is not only keeping up with the times, but is in the forefront in implementing the latest technologies.

We recommend this report to anyone who is interested in high quality home care and hospice services. The findings of this study point the way to the future.

Sincerely,

Val J. Halamandaris



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March 4, 2008

To the Home Care and Hospice Community:

Fazzi Associates was pleased and honored to be both a co-sponsor and the research firm responsible for the Philips National Study on the Future of Technology and Telehealth in Home Care.

Sponsored by Philips Home Healthcare Solutions and co-sponsored by the National Association for Home Care and Hospice, this study is critically important to the future of home care and hospice agencies. It addresses the questions that are most on the minds of agency leaders when it comes to looking at the role of technology and telehealth.

What is clear from the study is that the four major technologies – fiscal, billing and backroom technologies, point of care technology, electronic medical records and telehealth – are the foundation for the future of agencies. Generating insights and information on trends and experiences of agencies throughout the country provides leaders with a better knowledge on the realities and implications of these technologies.

It is also important to acknowledge and celebrate the incredible contribution that Philips has made to the home care and hospice community. Rather than conducting a private study, Philips opted to initiate a study and make results available to every agency in the country and to others concerned and committed to improving services to patients throughout the country. Philips' commitment to the future of home care and hospice reflects on the integrity and vision of this leading edge telehealth company.

The same can be said for the National Association for Home Care and Hospice. Led by Val Halamandaris and Mary St. Pierre, NAHC took a leadership role in promoting and encouraging agencies to participate in the study. Thanks to their leadership, over 1,000 leaders offered recommendations on issues that they felt should be addressed in the study and another 976 actually participated in the national survey.

Finally, we would like to thank the wonderful leadership provided by the National Steering Committee. Led by recognized leaders from every region of the country, their active involvement helped to ensure that we addressed the questions that mattered most.

To all of those involved in the process, our sincere thanks for making this study so successful and so helpful. And to agencies reviewing this report, our best wishes on using insights from this report in helping to shape your future technology and telehealth strategies.

Tim Ashe, Partner and Co-Director  
Fazzi Associates

Bob Fazzi, Managing Partner and Co-Director  
Fazzi Associates

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## Executive Report

The Philips National Study on the Future of Technology and Telehealth in Home Care is the largest technology and telehealth study in the history of home care. It addresses the role of technology and telehealth in service delivery by Medicare certified agencies to more than 4.2 million seniors each year.

Sponsored by Philips Home Healthcare Solutions and co-sponsored by the National Association for Home Care and Hospice (NAHC) and Fazzi Associates, the study took nearly a year to complete and involved agencies in every region and every state. Nine hundred and seventy-six (976) agencies representing every major segment of home care participated. Fazzi Associates, a national consulting, benchmark and research firm that specializes in home and community based services, coordinated the effort.

What makes this study particularly valuable is the fact that for agencies over \$1 million in Medicare revenue, a statistically representative sample was taken on a number of variables. These included a representative sample by size (\$1 to \$3 million, \$3 to \$6 million and over \$6 million in annual revenue), by ownership (freestanding versus hospital-based), by legal status (not-for-profit versus for-profit) and by area (rural versus urban). A sizeable sample (100 plus) of agencies under \$1 million in Medicare revenue were also surveyed. While not statistically representative, the sample closely approximated the make-up of this segment of the industry.

### **What Was the Approach to the Survey?**

From the beginning, the Philips Study was designed to incorporate the thinking, needs and expectations of leaders in the field. While four areas were covered (fiscal, billing and backroom technology, point of care technology, electronic medical records and telehealth), the primary focus was on telehealth related inquiries.

What is particularly noteworthy is how the study was approached. Rather than generating a list of questions and asking agencies to respond, the sponsors were intent on ensuring that the study explored questions and issues that were of greatest interest to agency leaders. The process involved strategies designed to maximize input and involvement of the entire field.

A National Steering Committee of highly respected agency leaders was recruited to oversee and guide the direction and focus of the study. Committee members came from every region of the country and represented the full range of agency types, i.e. urban and rural, hospital-based and freestanding, for-profit and not-for-profit, and all sizes in terms of revenue.

The year-long effort also included an open invitation to the entire field to suggest questions and topics that they wanted to see included in the study. More than 1,000 agency staff participated in a web based input survey. All recommended questions were then reviewed by the National Steering Committee at a two-day planning meeting in Chicago. Using this input, the committee developed the most comprehensive survey on technology and telehealth in the history of home care. It was tested, modified and validated prior to being conducted in the second and third quarters of 2007.

### **What Did the Philips' Study Focus On?**

Based on the findings from the national web survey and the input from the National Steering Committee, the survey was designed to address the four major home care technology areas. Most questions, however, pertained to telehealth related experience and activities. The four areas covered in the study included:

- Fiscal, Billing and Backroom Technology
- Point of Care Technology (clinical software and POC devices)
- Electronic Medical Records
- Telehealth and Remote Patient Monitoring Technology

What emerged was a far clearer perspective than ever before on the incredible growth, impact and acceptance of telehealth and technology in home care. Technology and telehealth have clearly moved to the forefront of service delivery in agencies throughout the country.

What also emerged was the realization that while there were four major technologies, the need for seamless integration of these technologies was becoming of greater importance to agency directors. When home care agencies began using the first set of technologies in the late 1980s (fiscal, billing and backroom technology), most of those purchasing a system were not thinking of how these technologies would integrate with point of care technology, let alone electronic medical records and telehealth. Later, as the need and advantages of integrating

backroom with point of care technology become more obvious, integration became of greater interest. Today, there are very few agencies who don't ask the question, "How does this technology integrate with the other three technologies?" when purchasing a new product.

### Who Was Surveyed?

The study focused on a representative sample of the industry. Researchers were able to identify the trends, experiences, buying decisions, strategies, results, etc. of all major segments of home care with Medicare revenues in excess of \$1 million. And, for the first time ever, a statistically valid representation of actual users of telehealth were identified and surveyed.

A total of 976 agency leaders were interviewed. Their candid responses and extensive insights helped to generate a report that provides the field with a full view and appreciation for the present and future use of technology and telehealth in the home care industry. Agencies involved in the survey included:

#### Ownership

<b>Freestanding</b>	685	70.2%
<b>Hospital-based</b>	291	29.8%
<b>Total</b>	976	100.0%

#### Legal Status

<b>For-Profit</b>	512	52.5%
<b>Not-for-Profit</b>	362	37.1%
<b>Other</b>	102	10.5%
<b>Total</b>	976	100.0%

#### Annual Revenue

<b>&lt;\$1M</b>	100	10.2%
<b>&gt;=\$1M and &lt;\$3M</b>	412	42.2%
<b>&gt;=\$3M and &lt;\$6M</b>	262	26.8%
<b>&gt;=\$6M</b>	202	20.7%
<b>Total</b>	976	100.0%

#### Geographic Area

<b>Rural</b>	297	30.4%
<b>Urban</b>	679	69.6%
<b>Total</b>	976	100.0%

It is interesting to note that 17.1% of the 976 respondents report using a telehealth system. While their views, levels of satisfaction and dissatisfaction differed, nearly all reported (89.1%) that despite the challenges, cost and barriers they faced in starting their program, given everything they knew today, they still would have purchased a telehealth system. An in-depth analysis of telehealth agencies is found in Section IV of this report.

## What Did the Study Focus On?

The study focused on the questions that were of greatest interest to those completing the web survey. Also included were targeted questions that the members of the National Steering Committee felt were critical to better understand the present and future trends in the four technologies.

Note: Because many of the significant differences were by size of agency, we have opted to present tables of most findings by revenue categories.

The findings are divided into four sections. The first section deals with three technologies: fiscal, billing and backroom technology, point of care technology and electronic medical records. Some of the findings are below. The remaining three sections focus on various aspects of telehealth and remote patient monitoring technology.

### **I. Fiscal, Billing and Backroom Technology, Point of Care Technology and Electronic Medical Records**

- 97.3% Agencies that have formal fiscal, billing and backroom systems.
- 21.6% Agencies that plan on purchasing a new system in next 12 months.
- 43.9% Hospital-based agencies planning a purchasing a system from a new vendor.
- 58.6% Agencies that have some form of electronic medical record system capable of recording, storing and accessing records on-site or from distance sites.
- 22.7% For-profit agencies that report that they plan on replacing or upgrading their system in the next 12 months.
- 40.0% Agencies with annual revenue over \$6 million stating that they will be replacing or upgrading their electronic medical record system with a new vendor.
- 79.1% Non-profit agencies responding that they have a POC system.
- 31.6% Agencies reported that it has taken more than 12 weeks to reach their former clinical productivity level after adopting a POC system. Note: 6.4% report that they have never reached it.
- 16.8% Agencies that are planning on replacing or upgrading their present system.

- 31.3% Agencies that are planning on going to a new vendor for their POC system.

One of the findings from the study that is important to note is the great confusion over the definition of electronic medical records. Some agencies adhere to the premise that any record that is stored electronically is an electronic medical record. Others feel that an electronic record is a record that is electronically transferred between various medical sites. Clarification and development of a uniform definition of electronic medical records in home care is certainly warranted, particularly in light of federal initiatives for all health providers to have electronic medical records by 2014.

For a more detailed of findings on these three technologies, see Section I.

## **II. Present Use of Telehealth Systems**

Because of the growing interest and adoption of telehealth services by agencies throughout the field, a great deal of effort was spent on identifying agency experiences and preferences related to telehealth. Section II provides an overview of the adoption rates of agencies using telehealth as well as information on what they use, what they like and future buying decisions. Among the findings related to use of telehealth systems include:

- 17.1% Agencies reporting that they use some type of telehealth system.
- 32.0% Agencies with over \$6 million in annual revenue that provide telehealth services.
- 26.8% Agencies responding that it took over 180 days to make a purchasing decision.
- 35.7% Agencies that lease rather than purchase their system.
- 90.0%+ Agencies that list the same three specific core components as part of their telehealth system.
- 16.2% Agencies that plan on replacing or upgrading their telehealth systems in the next 12 months.

Additional findings by agency size, ownership, legal status and area served can be found in this section.

### **III. Strategies to Get Buy-in by Key Constituencies for Telehealth Services**

When introducing a change in an agency, particularly a change that has financial cost as well as implications to service delivery, “how” leaders approach the change effort is important to the ultimate acceptance and success of this effort. The survey explored a number of questions of how leaders approached getting buy-in for these changes. Findings include:

- 41.3% Agencies stating they use specific strategies to educate and obtain manager and supervisory buy-in.
- 57.2% Agencies stating they used specific strategies to educate and get clinical staff buy-in.
- 2.1% Agencies that used cost savings as their primary strategy.
- 66.7% Agencies that used a “nurse champion” to help get clinical staff buy-in.
- 56.9% Agencies reporting that their nurses were very receptive to having a telehealth service after one year as compared to 36.6% at the beginning of the program.
- 63.3% Agencies reporting using specific strategies to get physician buy-in to the services.

This section also includes additional information on what strategies worked the best and which strategies were used less frequently.

### **IV. Experiences With Your Telehealth Service**

For agencies using telehealth services, among questions that most respondents on the web survey wanted answered was, “What was the actual experience of agencies using telehealth services? Did they save money? Did they improve quality? How did patients respond? Were patients satisfied or upset at having telehealth services?” These and a number of other questions were addressed in this section. Findings include:

- 83.9% Agencies stating that fewer than one in ten patients refused the system. Nearly two-thirds reported that fewer than one in twenty refused.
- 71.3% Agencies responding that telehealth services improved patient satisfaction. No agency reported that it reduced patient satisfaction.

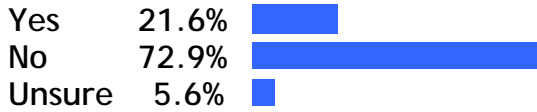
- 97.0% Agencies answering that they had criteria for which patients should use telehealth services.
- 49.7% Agencies reporting the use of telehealth services reduced the number of visits per patient.
- 45.2% Agencies for which telehealth services led to an increase in referrals.
- 0.6% Agencies stating telehealth services led to a reduction in referrals.
- 88.6% Agencies reporting that telehealth services led to an increase in quality outcomes.
- 76.6% Agencies stating that telehealth services led to a reduction in unplanned hospitalizations.
- 42.8% Agencies stating that telehealth services led to a reduction in cost. Another 48.2% reported it had no impact.
- 89.1% Agencies reporting that given everything they know today, they would still have started their telehealth service.

What is clear from the study is that technology is the future and that home care agencies throughout the country recognize and are embracing all four types of technology with telehealth services being an area of significant growth. The challenge for agencies is to move in a wise and methodical manner, one that allows agencies to make the right purchasing decisions, the right implementation decisions and the right decisions for the benefit of their patients. The Philips Study represents a positive step in providing leaders with solid information and the foundation for making more educated decisions.

## **Section I.**

# **Fiscal, Billing and Backroom Technology, Point of Care Technology and Electronic Medical Records**

## Are you planning on replacing or upgrading your billing system in the next 12 months?



### Findings:

Slightly over 20% of agencies regardless of size are considering replacing or upgrading their billing system.

### Considerations:

Complex, home health billing requirements are changing and require responsive billing practice to effectively manage receivables. Kenneth McNulty (CFO, VNA Boston) recently participated in a National Training on

**Are you planning on replacing or upgrading your billing system in the next 12 months?**

	Annual Revenue				Total
	<\$1M	≥\$1M and <\$3M	≥\$3M and <\$6M	≥\$6M	
Yes	66	74	37	28	205
	20.6%	21.0%	23.9%	22.8%	21.6%
No	232	264	111	86	693
	72.3%	75.0%	71.6%	69.9%	72.9%
Unsure	23	14	7	9	53
	7.2%	4.0%	4.5%	7.3%	5.6%
Total	321	352	155	123	951
	100.0%	100.0%	100.0%	100.0%	100.0%

Best Practice Strategies for Responding to the New PPS Regulations. Mr. McNulty advised providers that old benchmarks and targets and budget processes will no longer work under the PPS 2008. Mr. McNulty acknowledged the detailed use of OASIS and its billing impact. Recalculating the impact of the new PPS regulations for 2008 on projected revenue from scratch is a “must.” Some computer and benchmark vendors have created models that allow these calculations.<sup>1</sup> Billing systems and their comprehensive use vary widely.

The longer an agency has used a billing system the more likely it is to want to upgrade or change its software. This is particularly true given evolving regulation

<sup>1</sup> Fazzi Associates, Inc., SHP Strategic Healthcare Programs, LLC “National Training on Best Practice Answers to the PPS Changes” September, 2007.

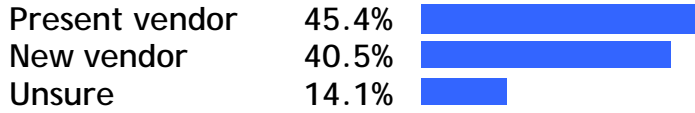
and reimbursement requirements. Among the issues that agencies are considering as part of this process include:

- The desire to change or upgrade billing software may stem from a combination of any of the following:
  - ▶ a wish for software that is more responsive to their need for data,
  - ▶ a wish for a more supportive vendor relationship,
  - ▶ a frustrated agency that has not fully understood how to use its software system to the full benefit of their organization.

Each reason is critical for agencies to explore before making changes to their IS infrastructure. If the agency is missing opportunities within the current use of software due to inadequate understanding of its own utility/capacity, the need to change software may be mitigated through comprehensive training in the current system. Digging into why a change is desired creates a resultant *context* for desired change. This understanding will assist identification of changes sought.

- Comprehensive software implementation planning must be evaluated when addressing the need for change. Representative users of the software should participate in both the evaluation of software potential and the implementation planning for any upgrades or changes.
- Scrutinizing operational workflow and the software system's support along the flow of work highlights efficiencies of various systems available. An agency shopping for new or updated software must be prepared to know its workflow in detail in order to shop for these efficiencies.
- Transition of billing systems requires fastidious attention to account detail. During software transition, anticipation of initial lowered productivity of billing staff and the possible impact to cash flow requires preparation.

## Do you plan on replacing or upgrading your system with your present vendor or a new vendor?



### Findings:

Slightly over 40% of agencies report that they plan on replacing their present system with a new vendor. A much lower percentage of smaller agencies (25.4%) report that they plan to seek a new vendor versus larger agencies where there is a higher potential of looking for a new vendor (57.1%).

### Considerations:

Changes in industry regulation have increased home health's focus on back office, billing functions and related vendor responsiveness and support. Evolved consumer needs for billing software have prompted significant,

Do you plan on replacing or upgrading your system with your present vendor or a new vendor?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Present	17	40	20	16	93
	25.4%	54.8%	54.1%	57.1%	45.4%
New	37	23	13	10	83
	55.2%	31.5%	35.1%	35.7%	40.5%
Unsure	13	10	4	2	29
	19.4%	13.7%	10.8%	7.1%	14.1%
Total	67	73	37	28	205
	100.0%	100.0%	100.0%	100.0%	100.0%

potential change in consumer loyalty. Over a quarter of home health agencies are planning on changing their software vendor with an additional 14% of agencies indecisive about staying with their vendor.

Home health agencies often investigate making a change in software vendor. The agency's cultural motivation for change should be examined. Among the questions that the agency should answer through this process include:

- Was dissatisfaction due to the product, or the products' support?
- Operationally, did the software provide efficiencies to the system?
- Has it been easy or difficult for staff to learn how to use the present system?
- Would it make more sense to explore improving the agency's capacity to use the present system rather than to purchase a new system?

In changing vendors, representative stakeholders in the billing process should be given the opportunity to evaluate RFP responses and test the software. Stakeholder (departmental/individual) input educates final decision makers and increases staff buy-in. Investment of these key individuals and departments in the process of change motivates cultural transition.

## Do you presently have some type of electronic medical record system input, store or retrieve medical data in the field or in your office?



### Findings:

There is clearly significant confusion over what constitutes Electronic Medical Records (EMR) in home care. Some agencies feel having Point of Care systems and being able to electronically record clinical information constitutes having an electronic medical record. Others have a more strict definition, i.e. ability to transfer records to physicians, hospitals, etc. In the future a shared definition must be adapted by the field.

Presently, 58.5% of home care agencies report having some form of electronic medical report with not-for-profits (69.3%) more often responding yes verses for-profits (50.6%).

### Considerations:

The National Health Information Infrastructure (NHII) is mandated to increase knowledge based networks of interoperable systems for healthcare in the United States. Stakeholders, such as state and federal governments, health care

	Legal Status			Total
	For-Profit	Not-For-Profit	Other	
Yes	254	235	84	573
	50.6%	69.3%	60.9%	58.5%
No	248	104	54	406
	49.4%	30.7%	39.1%	41.5%
Total	502	339	138	979
	100.0%	100.0%	100.0%	100.0%

payers and health care providers are tasked with the initiative of improving health care and overall health. An interoperable, complete EMR gathered at the point of

care drives this initiative.<sup>2</sup> The home health industry has responded, incrementally integrating EMR systems.

Industry's transition to an EMR supports quality initiatives for patient safety and optimal sharing of clinical knowledge. The impact of this transition is felt at many levels:

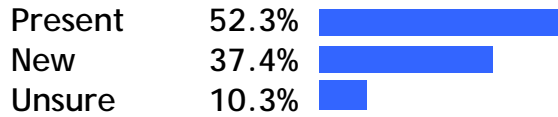
- **Clinical impact:** The free flow of health information between members of an interdisciplinary team is critical to the measurable success of home health practice. This information exchange may be greatly enhanced through EMR data sharing. Communication that is purposeful and dynamic enhances the ability to serve patients by better managing disease. Tracking clinical outcomes by clinician, by disease management protocol, etc. is enlightening and can provoke positive change in practice.
- **Agency impact:** When clinical and billing information flows through the operational work flow, efficiencies (and inefficiencies) of process can be found and improved. Agencies with electronic health records can scrutinize and identify operational processes that are redundant.
- **Big picture impact:** Standardization of health data is increasingly valued as members of the continuum of care adopt electronic health records. Questions being asked include; "Does the home health provider have system interface capacity with its key referral sources, or vertically integrated healthcare delivery systems? Who will decide what the standards are? Will home health be at the table in advancing these standards?"

Some home health agencies have already created system interface with hospitals, speeding referral information and increasing access to important patient information. Digitally gathered health information (such as vital signs gathered through home telehealth) is already being transferred to physician electronic health records. Unfortunately, this is not the case in most home care agencies. The vast majority of home health agencies receive digital information and manually enter it into another electronic record system. As standardization of health information increases, more and more agencies will clearly move to an electronic medical record system.

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<sup>2</sup> <http://aspe.hhs.gov/sp/NH11/FAQ.html>

## Do you plan on replacing or upgrading your EMR with your present vendor or with a new vendor?



### Findings:

The majority of agencies who will be upgrading their clinical EMR will do so through present vendors. The cost of discontinuing one system and initiating another may well contribute to this statistic. However, there is a significant number, up to 37.4% of the market, that may switch to a new vendor altogether.

### Considerations:

When upgrading the current system the following should be considered:

- What system advantages may be gained through applying available upgrades?
- Who will test the upgrades and assure proper function for the EMR?
- How will the upgrade be performed and what impact will that have to operations? What planning will be required to accommodate system upgrades (impact on user productivity, ability to perform their work, etc.)?
- Who will educate end users about the upgrade as appropriate?

If the agency is planning on changing vendors for their EMR, the following should be considered:

Do you plan on replacing or upgrading your EMR with your present vendor or with a new vendor?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Present	17	21	10	8	56
	42.5%	56.8%	66.7%	53.3%	52.3%
New	20	10	4	6	40
	50.0%	27.0%	26.7%	40.0%	37.4%
Unsure	3	6	1	1	11
	7.5%	16.2%	6.7%	6.7%	10.3%
Total	40	37	15	15	107
	100.0%	100.0%	100.0%	100.0%	100.0%

- Who will evaluate various system offerings? Field representation is strongly recommended as key members of this team.
- Cost benefit analysis of ending use of one system and initiating the use of another.
- Planning for continuation of dynamic documentation of patient status and how the clinical record will be maintained during a period of transition.
- As with system upgrades, planning for new system education and its impact to staff productivity should be planned into the cost benefit analysis.

## Do you presently have a Point of Care system that you use to collect patient data in the patient’s home?



### Findings:

Use of Point of Care (POC) has been steadily growing in home care. Today nearly two-thirds of all agencies use POC. Adoption rates by segments of home care, however, differ. For example not-for-profit agencies are far more likely to have adopted POC (79.1%) versus (44.7%) for-profit agencies. Most agencies (86.7%) use an outside vendor.

### Considerations:

POC documentation capacity and the use of the EMR at the point of care are two distinctly different issues. The answer to this question indicates the *potential* to perform documentation at the POC the majority of the time. Exposure to the industry indicates inconsistent realization of this potential. Documenting at the POC harvests clinical data that is fresh in the mind of the clinician and therefore, optimal. It also reduces redundant documentation practice (taking notes, then entering data later in the system).

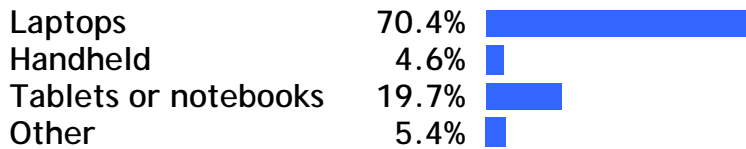
Do you presently have a Point of Care system that you use to collect patient data in the patient’s home?				
	Legal Status			
	For-Profit	Not- For-Profit	Other	Total
Yes	114	186	53	353
	44.7%	79.1%	60.2%	61.1%
No	141	49	35	225
	55.3%	20.9%	39.8%	38.9%
Total	255	235	88	578
	100.0%	100.0%	100.0%	100.0%

Optimal use of devices at the point of care would require:

- A cultural/company expectation that documentation occurs whenever possible at the POC.

- Educational processes that instruct clinicians how to meet the expectation of documenting at the POC, including navigation of software, time management skills, patient management of documentation expectations, etc.
- Leadership oversight of the documentation practice patterns of clinicians, including:
  - ▶ Understanding the common barriers to meeting POC documentation.
  - ▶ Engaging the end user in discussion of methods used or needed to mitigate the impact of barriers.
  - ▶ Working together with field staff to identify best practice patterns for POC capture of clinical information. Integrating best practice into new and ongoing orientation for staff reinforces the expectation for documentation practice and provides staff ongoing skills to meet that expectation.
  - ▶ Creating a culture of accountability relative to meeting the expectation of POC documentation.

## What type of hardware do your clinicians most often use in the field to collect the information with your Point of Care system?



### Findings:

In terms of type of hardware used, laptops are clearly the leader (70.4%). In terms of other systems, freestanding agencies have a higher adoption rate (24.1%) of tablets and notebooks than hospital-based programs (15.0%).

### Considerations:

Home health is using laptops predominantly to achieve clinical documentation in POC systems.

The hardware used by clinicians will definitely impact user satisfaction, system demands for servicing the equipment and cost.

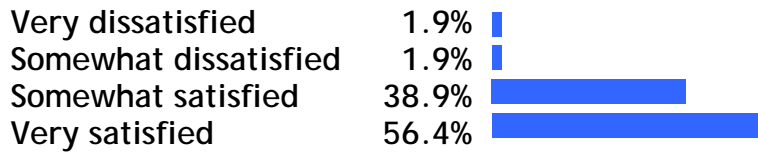
Consideration should be given to the following when choosing hardware for clinician use:

- How does the hardware perform in the agency's unique home health environment?
- Capacity for networking (wireless, hard-wired, etc.).
- Clinician input as to ease of use and ease of transport.
- Levels of maintenance required for different types of hardware.
- Cost of purchase vs. lease.
- Obsolescence provisions rendered by vendor.

**What type of hardware do your clinicians most often use in the field to collect the information with your Point of Care system?**

	Ownership		Total
	Freestanding	Hospital-based	
Laptops	122	139	261
	63.9%	77.2%	70.4%
Handheld	14	3	17
	7.3%	1.7%	4.6%
Tablets/notebook	46	27	73
	24.1%	15.0%	19.7%
Other	9	11	20
	4.7%	6.1%	5.4%
Total	191	180	371
	100.0%	100.0%	100.0%

## How satisfied are you with your Point of Care hardware?



### Findings:

The vast majority of agencies were clearly pleased with their Point of Care hardware. This holds true regardless of size, auspices, legal status or geographical location.

### Considerations:

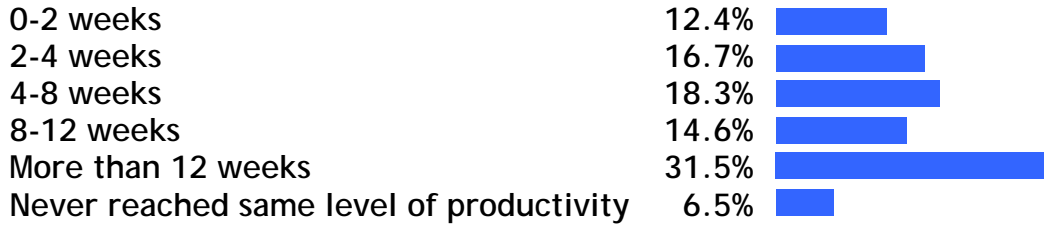
Satisfaction outweighs dissatisfaction with POC devices used in the field. “Somewhat dissatisfied” is more likely to occur if the agency has used its system for more than five years. The reverse corollary cannot be seen in those who are very satisfied, as longevity doesn’t appear to impact the result.

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Very Dis.	3	3	1	0	7
	2.9%	2.2%	1.3%	.0%	1.9%
Somewhat Dis.	0	4	2	1	7
	.0%	3.0%	2.6%	1.8%	1.9%
Somewhat Sat.	53	42	32	19	146
	52.0%	31.3%	42.1%	34.5%	39.8%
Very Sat.	46	85	41	35	207
	45.1%	63.4%	53.9%	63.6%	56.4%
Total	102	134	76	55	367
	100.0%	100.0%	100.0%	100.0%	100.0%

Satisfaction with the devices will be impacted by:

- Ease of use. As clinicians age, do the devices they use facilitate ease of use (e.g. are screens large enough to see, buttons too small to use quickly, etc.)?
- Portability.
- Stability of the system.
- Connectivity capacity.
- Reliability of the hardware.
- Battery life.

## How long did it take clinicians to become proficient in use of POC hardware to return to their previous level of productivity?



### Findings:

While many vendors suggest that it takes little time to learn their systems, what the field really wanted to know was “What is the reality?” Nearly one third of all respondents reported that it took over 12 weeks, with 6.5% reporting that they have never returned to previous productivity levels.

### Considerations:

Adopting a Point of Care documentation system will have an impact on productivity of clinicians for a variable amount of time. When adopting POC documentation, a home health agency must prepare for the initial impact. Capacity to serve patients must be anticipated in relation to this impact. The industry, overall, must learn best practices to identify methodology to mitigate anticipated negative impact to productivity.

Consideration should be given to the following:

**How long did it take clinicians to become proficient in use of POC hardware to return to their previous level of productivity?**

	Area		Total
	Rural	Urban	
0 to 2 weeks	13	33	46
	8.4%	15.2%	12.4%
2 to 4 weeks	25	37	62
	16.2%	17.1%	16.7%
4 to 8 weeks	32	36	68
	20.8%	16.6%	18.3%
8 to 12 weeks	22	32	54
	14.3%	14.7%	14.6%
More than 12 wks	51	66	117
	33.1%	30.4%	31.5%
Never reached	11	13	24
	7.1%	6.0%	6.5%
<b>Total</b>	<b>154</b>	<b>217</b>	<b>371</b>
	100.0%	100.0%	100.0%

- How well trained are the POC educators in the agency? Are they well versed in the software and hardware use and capacity?
- How does training occur on POC use? Combinations of didactic and field training are utilized by agencies for optimal benefit. This extends the reach of instruction to the field. Preparation of field teachers for optimal software use at the point of care will impact learner response. Allowing the learner to receive classroom training, observe and field test use, then return to the didactic setting for reinforced learning has been anecdotally reported to solidify training and practice behaviors up front.
- The integration of software/hardware navigation with time management of documentation at the point of care should be considered in both didactic and field education. *Time management* skill-sets that coincidentally optimize productivity and the integrity of documentation are often overlooked in POC implementation programs.
- The initial training of clinical staff on POC use is often valued by an organization more than the ongoing follow up and supervision of staff in the use of POC documentation. Few areas of healthcare delivery are as challenged by “bedside” (POC) education as is the home health arena. The capacity for field teachers and frontline managers to evaluate appropriate use of POC technology has been hampered by competing priorities of work.

## What other technology do you use?

### Findings:

As part of this study we looked at numerous other technologies to see how they have been adopted by agencies. The following chart shows 11 technologies and the percentage of agencies using them. Most of the technologies were used by less than half the agencies.

	Yes	No
Emergency Response	40.2%	59.8%
Two Way Radio	3.0 %	97.0%
Cell Phone	91.3%	8.7%
GPS Tracking	6.2%	93.8%
Interactive Voice Recognition with Patients	1.3%	98.7%
Interactive Voice Recognition with Staff	1.4%	98.6%
Beeper	57.8%	42.2%
Zoe Fluid Status Monitor	2.7%	97.3%
PT/INR Blood Thinning Medication Check	46.2%	53.8%
Optimal Scanning of Forms	13.7%	86.3%
Telehealth Systems	17.1%	82.9%

### Considerations:

Connectivity of the consumer to health care systems is on the rise, as is the prevalence of seniors living alone. The US Census Bureau (2000) projected that 28% of the over 65 population lives alone. As this population has aged, the value and adoption of some systems, particularly personal emergency response systems, (PERS) has increased.

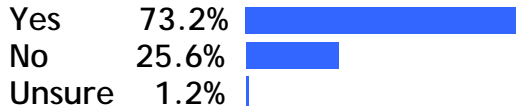
In terms of personal emergency response systems, agencies should consider:

- Is there a market for the agency to extend product offerings to include PERS; (has the agency completed a competitive market analysis)?

- Does the agency have the marketing vehicle to support and sell PERS to its clients?
- What is the cost/benefit for the agency considering offering of PERS? At what volume of sales would the agency realize a profit?
- Would the offering of PERS support the agency's competitive profile in the market? Does it complement existent Private Duty services?

There is clearly significant potential that should be considered by agencies for this and other technology.

## Do you use a patient satisfaction system that uses benchmark data to compare your agency's performance with others?



### Findings:

More than 70% of respondents (73.2%) reported that they used a patient satisfaction system that uses benchmark data to compare performance. This response was consistent across all category breakdowns. Further, the majority of respondents (45.9%) claimed to use their own internal survey when measuring patient satisfaction.

### Considerations:

Healthcare and its regulators are increasing focus on quality and related patient satisfaction. The Home Health Quality Improvement National Campaign (<http://www.homehealthquality.org/hh/>) has prompted a national goal to keep patients home

**Do you use a patient satisfaction system that uses benchmark data to compare your agency's performance with others?**

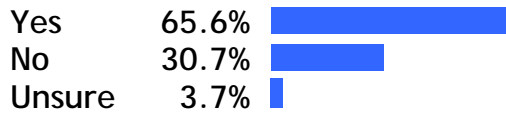
	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	246	264	116	89	715
	73.4%	73.5%	73.4%	71.2%	73.2%
No	86	90	41	33	250
	25.7%	25.1%	25.9%	26.4%	25.6%
Unsure	3	5	1	3	12
	0.9%	1.4%	0.6%	2.4%	1.2%
Total	335	359	158	125	977
	100.0%	100.0%	100.0%	100.0%	100.0%

while improving their clinical outcomes and *patient satisfaction*. At the kick-off meeting of this campaign in Baltimore (01/07) high ranking officials of CMS stressed the need to address and improve our patients' satisfaction with rendered care. Measuring that satisfaction is the first step. Within this measurement there are many considerations:

- Patient satisfaction data in the absence of comparative (benchmark) analysis is limited in its scope of information. In the absence of benchmark data the agency cannot measure how it performs compared to the market at large.

- Ease of use of the patient satisfaction tool is critical to its adoption. Do the questions focus on key drivers of patient satisfaction? Can the home care staff read and use these tools to identify areas of targeted improvement focus?
- Will agency data in a benchmarked system remain confidential for the agency?
- Is the agency tool for measuring patient satisfaction approved by JCAHO and other accreditation bodies?
- The home health industry is increasingly competitive. Knowing how the agency is perceived in the mind of the consumer is critical within this growing market. Ramifications are many:
  - ▶ What is the impact of patient satisfaction on sales?
  - ▶ What should be changed to improve patient satisfaction?
  - ▶ What changes may have the greatest impact on market share?
  - ▶ What will happen to your market if your competitors are making related changes in their service provision and you are not?

## Do you use a data service that provides national benchmarking on OASIS?



### Findings:

The majority of respondents (65.6%) reported that they used a data service that provides national benchmarking on OASIS. This was consistent across all market segmentations. The two systems reported to be used most frequently were Outcome Concept Systems and Strategic Healthcare Programs.

### Considerations:

OASIS is at the heart of Medicare-certified home care practice.

Driving a meaningful plan of treatment, Medicare revenue, clinical outcome identification and related pay for performance (P4P) initiatives, the OASIS and its impact may not be overstated.

Do you use a data service that provides national benchmarking on OASIS?

	Annual Revenue				Total
	<\$1M	≥\$1M and <\$3M	≥\$3M and <\$6M	≥\$6M	
Yes	216	238	102	86	642
	64.5%	66.1%	64.6%	68.3%	65.6%
No	106	110	48	37	301
	31.6%	30.6%	30.4%	29.4%	30.7%
Unsure	13	12	8	3	36
	3.9%	3.3%	5.1%	2.4%	3.7%
Total	335	360	158	126	979
	100.0%	100.0%	100.0%	100.0%	100.0%

Agencies who want to “own” their practice look to benchmarking to further understand their data.

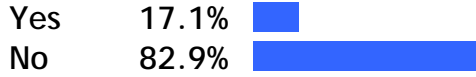
- Home Health Compare scores are reported and do benchmark OASIS data. They do not compare the agency, however, to best practice. Benchmarked data reports may offer this capacity.

- Does the agency have the capacity to not only compare their practice to regional and national averages, but also compare their data against the best agencies nationwide?
- Holding up a mirror to agency performance may reveal user issues with the OASIS dataset itself. Erroneous data capture often leads to less than optimal outcomes. Drilling down to the elements which are problematic may lead to targeted educational offerings. Distinguishing OASIS user error from disease management/clinical issues is critical when evaluating agency performance.
- Scrutinizing OASIS performance assists agencies in reaching best practice status in both profit and quality.
- Clinicians and their representative agencies are often overwhelmed with the regulation and operational practices required. It is not surprising that agency administrations are using national benchmarking tools to meet the expectation of improving quality.

# **Section II.**

## **Present Use of Telehealth Systems**

## Do you presently use a telehealth system?



### Findings:

The adoption rate of telehealth systems has been of interest to many. In reviewing the statistically representative sample from the Philips’ Study, we found that 17.1% of the agencies presently use some level of a telehealth system. It appears that there is greater adoption rate of large agencies versus small. Agencies whose Medicare budget size was less than \$1 million were found to have an adoption rate of 9.0% while those with budgets greater than \$6 million had a rate of 32.0%.

### Considerations:

The integration of home telehealth technology into practice is accelerating a vision of technology-integrated, “connected health” initiatives. Within an industry challenged by constricted resources and

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	30	57	40	40	167
	9.0%	15.8%	25.3%	32.0%	17.1%
No	305	303	118	85	811
	91.0%	84.2%	74.7%	68.0%	82.9%
Total	335	360	158	125	978
	100.0%	100.0%	100.0%	100.0%	100.0%

expanded expectations for quality care delivery, home telehealth is increasingly being recognized as an invaluable tool. Barriers of perception and culture for many have slowed the integration of home telehealth into agency practice:

- *Perception of cost.* Predicting return on investment (ROI) is not well understood in home health. Often the initial cost is seen as “non-reimbursable.” In the eyes of CMS, however, home telehealth has been “paid for” under episodic reimbursement for management of disease. In a recent,

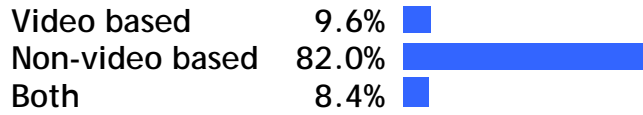
comprehensive study of agency ROI, a 48% ROI was noted through cost-savings (achieved with home telehealth in 192 studied episodes).<sup>3</sup>

- *Cultural barriers to practice adoption.* Clinicians who are uncomfortable with or resistant to technology have created predictable barriers to practice change. Such clinicians may see home telehealth technology as a direct threat to their own practice. Interestingly, when agencies champion the technology as better serving sick people, clinician adoption is predictably improved.
- *A lack of knowledge of integration of home telehealth into a comprehensive clinical model.* Home telehealth has remained in a special “silo” in many agencies’ practice. The quality benefits of the technology are not fully realized and the cultural sticking points inhibiting further adoption are evident.
- Initial introduction of home telehealth is not always followed by *ongoing education and incentives* to further home telehealth use.

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<sup>3</sup> Tsiames & Neander, Caring, July, 2007

## Does your telehealth system consist of video-based equipment?



### Findings:

Most telehealth used by home care in non-video. Over 80% of respondents (82%) reported using non-video based equipment in their telehealth system. The breakdown of rural and urban agencies showed that 20.4% of rural agencies used video based equipment, while only 5.1% of urban agencies used the same.

### Considerations:

Familiarity with home telehealth for many agencies stems from familiarity with one product. The impact of successful vendor “branding” as well as the industry’s perception of home telehealth is evident in

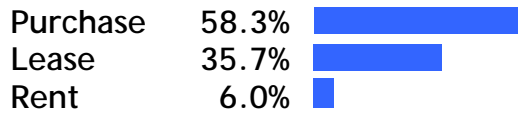
	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Video Based	7	5	1	3	16
	23.3%	8.8%	2.5%	7.5%	9.6%
Non-Video	23	49	32	33	137
	76.7%	86.0%	80.0%	82.5%	82.0%
Both	0	3	7	4	14
	0.0%	5.3%	17.5%	10.0%	8.4%
Total	30	57	40	40	167
	100.0%	100.0%	100.0%	100.0%	100.0%

its patterns of use to date. As the industry expands, the use of differentiated clinical tools will also expand.

- Agencies who invested in home telehealth may have started with one purpose and limited their product use to disease management. They may not see the need to expand product diversity.
- Cost efficiencies may be achieved through vendors when greater numbers of units are purchased or leased.

- Implementation, training and integration into clinical practice require time. Achieving diversified delivery options such as the use of telehealth systems may be perceived as too burdensome for providers already inundated with changing regulation and labor forces.
- Many providers do not fully understand the capacity of diverse home telehealth systems to meet disease management initiatives. All devices are not suited to all commonly served disease types. While CHF may well be served through remote monitoring, clinical treatment of depression by a tele-behavioral health nurse may require bi-directional video capacity. The ability of a WOCN to visualize a wound requires more than store and forward technology for vital signs. Envisioning home telehealth as an evolved tool for clinicians expands the vision of the technology's potential.
- As the telehealth field evolves, the use of multiple telehealth and remote patient options become more valuable. Multiple options ranging from a personal response system to traditional telehealth to video monitoring will ultimately be more responsive to the individual needs of patients.

## What financial option did you select when acquiring your telehealth system?



### Findings:

Over half of the respondents (58.3%) selected to purchase their telehealth systems while 35.7% chose to lease their systems. Ninety percent of agencies with revenue below \$1 million purchased their systems, while other revenue breakdowns were more consistent with the overall findings. In addition, 73.5% of rural agencies chose to purchase, compared to a smaller 52.5% of urban agencies.

### Considerations:

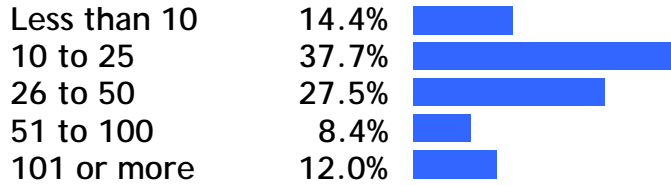
The decision to lease or buy home telehealth equipment has been impacted by many factors. The industry appears fairly evenly split on their decision.

- Lease agreements may offer obsolescence provisions to upgrade equipment if lease agreements continue.
- Purchase of telehealth equipment by some providers was achieved through grant dollar provisions, prohibiting ongoing lease commitments. A great deal of home telehealth in agencies was supported financially through obtaining special grants or appropriation dollars for targeted programs.
- Many lease agreements eventually end up in a purchased product over time.

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Purchase	27	25	23	23	98
	90.0%	43.9%	57.5%	56.1%	58.3%
Lease	3	27	14	16	60
	10.0%	47.4%	35.0%	39.0%	35.7%
Rent	0	5	3	2	10
	0.0%	8.8%	7.5%	4.9%	6.0%
Total	30	57	40	41	168
	100.0%	100.0%	100.0%	100.0%	100.0%

- Leasing or renting equipment may be seen as desirable by an industry not fully committed to the use of home telehealth. There is an “out”.
- Home telehealth equipment depreciation is still not allowable on Medicare cost reporting. This may have had an impact on the financial decision to lease or purchase and is an issue of great concern to both providers and vendors.

## How many telehealth units do you presently have?



### Findings:

The majority of respondents (37.7%) reported to having 10 to 25 telehealth units within their telemonitoring system. Those reporting to have 26 to 50 units were the second highest response with 27.5%. These numbers were fairly consistent with agencies in all annual revenue categories, showing that larger agencies don't necessarily have more telehealth units.

### Considerations:

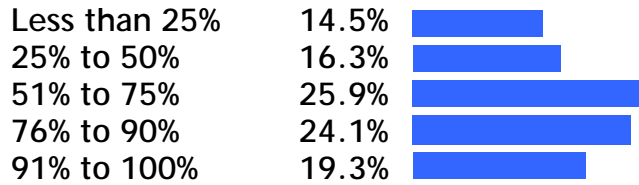
As the home health industry learns about the benefit of home telehealth use, and understands how to optimize its use for cost-savings the numbers of devices used should rise. Newer entrants to the market are more inclined to purchase greater numbers of units.

	Annual Revenue				Total
	<\$1M	≥\$1M and <\$3M	≥\$3M and <\$6M	≥\$6M	
< 10	3	14	4	3	24
	10.0%	24.6%	10.0%	7.5%	14.4%
10 to 25	17	21	13	12	63
	56.7%	36.8%	32.5%	30.0%	37.7%
26 to 50	7	17	11	11	46
	23.3%	29.8%	27.5%	27.5%	27.5%
51 to 100	0	1	7	6	14
	0.0%	1.8%	17.5%	15.0%	8.4%
101 or more	3	4	5	8	20
	10.0%	7.0%	12.5%	20.0%	12.0%
<b>Total</b>	<b>30</b>	<b>57</b>	<b>40</b>	<b>40</b>	<b>167</b>
	100.0%	100.0%	100.0%	100.0%	100.0%

- Cost and the less than optimal use of home telehealth programs have created, for some, a perception of high expense with limited ROI, prohibiting further purchase.

- The homecare industry has just scratched the surface of equipment use and application. Trying home telehealth meant you were a forward thinking agency, and fully implementing it into your clinical model has been rare.
- Larger organizations appear to be investing in home telehealth, providing greater purchasing power. The industry continues to be made up of both large and small providers with increases in market consolidation. The numbers of units for small providers will be fewer.
- Initial and ongoing grant funding for smaller providers have limited dollars allocated to “telehealth projects”, thereby limiting the numbers of devices available to the agency.
- Possible cultural views of home telehealth as a silo in care provision have sequestered use of home telehealth, inherently limiting its breakout into general practice.
- Consideration of the percentage of patients using telehealth, by diagnosis, would be telling with respect to this overall question.

## On average, what percent of your telehealth units are in use?



### Findings

The majority of respondents reported having more than half their units in use, with 25.9% reporting having 51 to 75% in use at any one time and 24.1% reporting 76 to 90% in use. Nearly a third (33.3%) of agencies below \$1 million and 26% of rural agencies reported to using less than 25% of their units on average.

### Considerations:

Significant waste of clinical resources lies in home telehealth equipment sitting on shelves. Certain segments of home care, in fact, are clearly underutilizing the use of their equipment. Just over 40% of hospital-based organizations, for

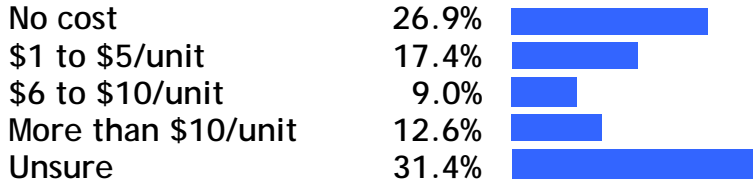
**On average, what percent of your telehealth units are in use?**

	Annual Revenue				Total
	<\$1M	≥\$1M and <\$3M	≥\$3M and <\$6M	≥\$6M	
< 25%	10	7	5	2	24
	33.3%	12.3%	12.8%	5.0%	14.5%
25% to 50%	0	12	7	8	27
	0.0%	21.1%	17.9%	20.0%	16.3%
51% to 75%	10	17	11	5	43
	33.3%	29.8%	28.2%	12.5%	25.9%
76% to 90%	3	14	10	13	40
	10.0%	24.6%	25.6%	32.5%	24.1%
91% to 100%	7	7	6	12	32
	23.3%	12.3%	15.4%	30.0%	19.3%
<b>Total</b>	<b>30</b>	<b>57</b>	<b>39</b>	<b>40</b>	<b>166</b>
	100.0%	100.0%	100.0%	100.0%	100.0%

example, report that less than 50% of their equipment is in use at any one time. Under use of systems can have a negative impact on agency administrative and clinical staff that see and ask why so many units are sitting on shelves. There are a number of things that can be done to increase the use of telehealth systems in agencies. They include:

- Education on the availability and appropriate use of home telehealth equipment.
- Improving expectations of staff to use home telehealth.
- The early identification of home telehealth patients (upon referral if possible).
- Champions who educate their colleagues on the patient benefits and ease of adoption of home telehealth.
- Helping staff overcome fear of equipment set up or use.
- Support systems to make set up and use less burdensome to homecare clinicians.
- Addressing concerns that using telehealth will increase the work of the clinician.
- Awareness of the positive impact on clinical outcomes possible through tighter monitoring using home telehealth.
- Increase awareness of how the proper approach can lead elderly patients to better respond to home telehealth technology.

## What is your approximate monthly cost for data transmission?



### Findings:

While over one third of respondents (34.1%) claimed to not know their approximate monthly cost for data transmission, 26.9% reported no cost. Hospital-based agencies reported the lowest costs, with 35.2% reporting no cost and 13.0% reporting \$1 to \$5 per unit.

### Considerations:

An enhanced need to understand cost structures related to home telehealth is critical to knowing the ROI rendered by the use of home telehealth. Clearly agencies are not fully aware of cost considerations.

- Costs to be considered are variable depending on the

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
No cost	3	17	14	11	45
	10.3%	29.3%	35.0%	27.5%	26.9%
\$1 to \$5/unit	3	13	6	7	29
	10.3%	22.4%	15.0%	17.5%	17.4%
\$6 to \$10/unit	3	9	1	2	15
	10.3%	15.5%	2.5%	5.0%	9.0%
> \$10/unit	7	5	5	4	21
	24.1%	8.6%	12.5%	10.0%	12.6%
Unsure	13	14	14	16	57
	44.8%	24.1%	35.0%	40.0%	34.1%
Total	29	58	40	40	167
	100.0%	100.0%	100.0%	100.0%	100.0%

agreement with the vendor. If an agency is paying per encounter with a third party managing the data, cost will greatly differ from an agency solely responsible for providing the data transmission.

- Costs will vary depending on the type of home telehealth delivery, video vs. store and forward remote monitoring.
- Costs should include, though not be limited to:
  - ▶ Related salaries of staff and related statutory and non statutory benefits.
  - ▶ Transportation costs: mileage reimbursement to staff for installation, de-installation and maintenance; equipment delivery costs.
  - ▶ IS support costs as they relate to equipment and software specific to home telehealth program, telecommunications cost.
  - ▶ Marketing costs of the home telehealth program.
  - ▶ Administrative overhead allocation to the program.

As agencies begin to cost-out the total cost of their program, they must be aware of each of these costs.

## What are some of the components of your telehealth system?

### Findings:

Telehealth systems are made up of numerous components, some used by agencies and some not. To get a better understanding of components that are actually used by agencies in the field, we asked them which components they used.

The chart provides a listing of specific components and the percentage of agencies by size that use that component.

Percent of agencies responding "yes" to use of component:

	Annual Revenue				Total
	<\$1M	≥\$1M and <\$3M	≥\$3M and <\$6M	≥\$6M	
Blood pressure monitors	100.0%	96.6%	100.0%	100.0%	98.8%
Electronic stethoscopes	23.3%	36.2%	35.0%	35.0%	33.3%
PT/INR	23.3%	24.1%	25.0%	31.7%	26.0%
Glucose meters	33.3%	52.6%	47.5%	58.5%	49.4%
Pulse Oximeters	100.0%	87.7%	92.5%	92.5%	92.2%
Scale	100.0%	94.7%	94.9%	92.7%	95.2%
Temperature	33.3%	64.9%	62.5%	65.9%	58.9%

### Considerations:

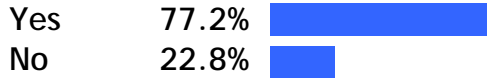
What is clear from the study is that there are common telehealth components that most agencies use while other components are used by less than half the agencies. For example, most agencies report that they use blood pressure monitoring, pulse oximeters and scales while other components (PT/INR, stethoscopes, and glucose meters) are used by barely half of the respondents. Three additional components that are normally not standard in most systems are of some interest to agencies. These are medication management dispensing (51.2%), remote wound management (40.5%) and emergency response services (43.7%).

The reasons that some of the telehealth components are used by most agencies is obvious.

- **Blood Pressure Monitoring:** Regular monitoring of BP in the natural setting of the patient's home is a critical adjunct to managing hypertension and heart disease. About 65 million American adults suffer from hypertension or high blood pressure. Middle-aged Americans face a 90% chance of developing hypertension during their lifetimes. Hypertension kills more than 46,000 Americans annually and is systemically linked to heart disease, diabetes and chronic illness. It is a silent killer, and many sufferers are not seeking treatment or are not compliant with their treatment. Of all people with high blood pressure, 11% are not on therapy and 25% are on inadequate therapy.
- **Pulse Oximeters:** Pulse oximetry has been part of a "historical package" of remote monitoring telehealth systems. It is not surprising to see its use in high percentages of telemonitored patients. Frequently monitored patients include those impacted by cardiac and respiratory disease. The oxygenation status of the patient is an obvious measure to include within these patient populations.
- **Scales:** Weight is an early indicator of exacerbation of Congestive Heart Failure (CHF). CHF is a commonly served diagnosis in home health care, a diagnosis notorious for revolving door emergent care and frequent re-hospitalization. The entrée of remote patient monitoring into the home health arena targeted this low hanging diagnostic fruit; using scales to support determination of health status. Incremental changes in weight over time are very important parameters when evaluating progression of disease. Subtle changes in weight, when accrued over a week to two week period may be dramatic. Many times home health patients have been instructed to notify the RN when weight gain exceeds a certain amount within a short period of time; the insidious trend may be missed.

The home health industry is learning new and evolving ways to integrate home telehealth technology into practice. Philips, for example, offers a 1-lead ECG / rhythm strip recorder which allows agencies to more confidently monitor their home bound clientele with a history of cardiac dysrhythmias. Other examples may be seen in the evolution of providing remote monitoring, (store-and-forward) of vital signs to providing dynamic EKG monitoring of exercise provided during a physical therapy rehab visit for a knee-replacement patient with co-morbid heart disease. Changes are clearly occurring in this area.

## Have you had your telehealth program for more than one year?



### Findings:

A large percentage of respondents (77.2%) reported that they had been using their telehealth program for more than one year. The largest percentage of agencies using telehealth systems more than one year old were rural (88.0%), hospital-based (83.3%) and not-for-profit (81.3%). The segment with the highest percentage of respondents who had not used their system for more than one year were for-profit agencies with 28.9%.

### Considerations:

The majority of respondents who have home telehealth have had it for more than a year. Nearly 15% of users are early entrants to the use of home telehealth.

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	23	44	31	31	129
	76.7%	77.2%	77.5%	77.5%	77.2%
No	7	13	9	9	38
	23.3%	22.8%	22.5%	22.5%	22.8%
Total	30	57	40	40	167
	100.0%	100.0%	100.0%	100.0%	100.0%

Questions that naturally arise when you look at the use of telehealth systems over a period of time include:

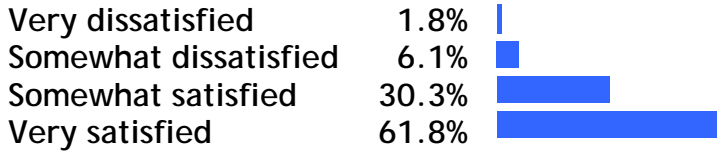
- Is it possible that a culture resistant to home telehealth will remain resistant? What it will take to tip the culture of home health to more rapid adoption?
- Will the impact of Pay for Performance financial incentives for reduction in avoidable rehospitalization and emergent care motivate the urgency of adoption? Will further financial incentives be applied to the use of home telehealth by payers and policy makers?
- What is the impact of home health media on exposing industry leadership to valued clinical change in practice? Is this media reaching the majority of non-

users of home telehealth? Is the information digestible to the receiver, or does it presume a basic understanding of the home telehealth product delivery?

- Given the evidence of home telehealth's clinical efficacy, at what point might the industry see a new *community standard of practice which requires the use of remote monitoring and home telehealth*? Health care providers are held to certain standards of practice by their regulatory and accrediting arms. As this standard evolves with technology integration, how will practice change and motivation be enhanced? At what point, for example, would a home health agency be considered as not providing an acceptable standard of practice for CHF management without home telehealth?
- Can home health providers who do not currently use home telehealth afford to wait for the aforementioned "tipping point" to be achieved in perceived standards of practice? The home health market is increasingly competitive with the outcomes of care placed in the public domain through Home Health Compare.

Discussion and exploration of these issues has the potential of helping to enhance the recognition and acceptance of telehealth by agency staff at all levels.

## How satisfied are you with your primary telehealth system?



### Findings:

The majority of respondents (61.8%) reported being “very satisfied” with their primary telehealth system while 30.3% were somewhat satisfied. The most dissatisfied segment were rural agencies with 12.0% reporting to be “somewhat dissatisfied.”

### Considerations:

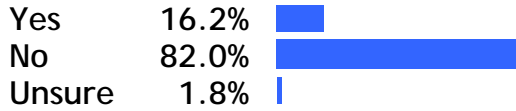
The industry appears to be satisfied with its vendors; certainly their loyalty would indicate this. That satisfaction is noted to erode slightly over time.

- New accounts are more likely to receive intense customer attention than older accounts.

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Very Dis.	0	2	1	0	3
	0.0%	3.5%	2.6%	0.0%	1.8%
Swhat Dis.	3	4	1	2	10
	10.0%	7.0%	2.6%	5.1%	6.1%
Swhat Sat.	7	18	13	12	50
	23.3%	31.6%	33.3%	30.8%	30.3%
Very Sat.	20	33	24	25	102
	66.7%	57.9%	61.5%	64.1%	61.8%
Total	30	57	39	39	165
	100.0%	100.0%	100.0%	100.0%	100.0%

- The telehealth vendors are naturally inclined to want to make “champions” of the industry and its participants. Attention to customer education needs and ongoing evolution of service appears strong.
- The vendors need the industry champions to sell further market penetration.

## Are you planning on replacing or upgrading your primary telehealth system in the next 12 months?



### Findings:

A significant majority of agencies (82.0%) reported that they were not planning to replace or upgrade their primary telehealth system in the next 12 months. These numbers ran consistent across the board, with the majority wanting to stay with their current system.

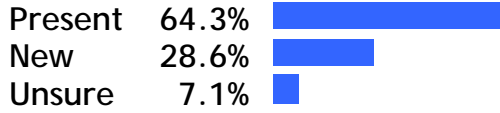
### Considerations:

The home health industry is undergoing significant regulatory change with the onset of an evolved Prospective Payment System implemented January of 2008. Changing and upgrading telehealth programs, while anticipated to some extent, does not seem to be a high priority.

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	7	4	7	9	27
	23.3%	7.0%	17.9%	22.0%	16.2%
No	23	51	32	31	137
	76.7%	89.5%	82.1%	75.6%	82.0%
Unsure	0	2	0	1	3
	0.0%	3.5%	0.0%	2.4%	1.8%
Total	30	57	39	41	167
	100.0%	100.0%	100.0%	100.0%	100.0%

- Whether this lack of desire to change is due to customer loyalty or a lack of understanding the evolution of the telehealth market is uncertain.
- Exposure to the changing products and services addressed within the home telehealth market is limited for many agency administrators.
- Uncertainty regarding agency financial standing under the new PPS may be impacting financial decisions to further invest in new device technology.

## Do you plan on replacing or upgrading your telehealth system with your present vendor or a new vendor?



### Findings:

The majority of agencies (64.3%) plan to stay with their present vendor when the time to replace or upgrade their system comes. The strongest loyalty factor in this area was with freestanding agencies, of which 75% were planning on remaining with their current vendors. Not far behind that were urban agencies with 71.4% claiming the same.

### Considerations:

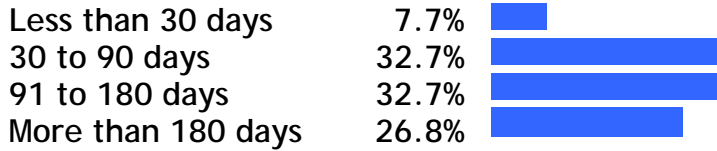
For those who are considering a system change or upgrade (a small number), a vendor change appears to be a significant possibility.

- Vendor opportunity to educate and capture potential consumers about the expanding capacity of their products is strong.
- Those who have ventured into telehealth with an open view of its evolution may need differing products to meet their perceived demands of use.
- One type of telehealth equipment may not meet all needs of the diverse patient base dependent on home health services.

Do you plan on replacing or upgrading your telehealth system with your present vendor or a new vendor?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Present	7	2	4	5	18
	100.0%	40.0%	57.1%	55.6%	64.3%
New	0	2	2	4	8
	0.0%	40.0%	28.6%	44.4%	28.6%
Unsure	0	1	1	0	2
	0.0%	20.0%	14.3%	0.0%	7.1%
Total	7	5	7	9	28
	100.0%	100.0%	100.0%	100.0%	100.0%

## What was the time frame between your agency’s decision to purchase a telehealth system and the time of implementation?



### Findings:

The majority of respondents were evenly split between a 30 to 90 day period (32.7%) and a 91 to 180 day period (32.7%) between their agency’s decision to purchase a telehealth system and the time of implementation. Not far behind (26.8%) were those who spent more than 180 days. Only 7.7% spent less than 30 days. This remained fairly consistent across all segmentations. While 10.6% of freestanding agencies claimed to have spent less than 30 days deciding, only 1.9% of hospital-based agencies did the same.

### Considerations:

Industry time to implement home telehealth reflects an industry on a learning curve.

Factors that might influence the length of time between the decision to purchase and implementation include:

- How well the

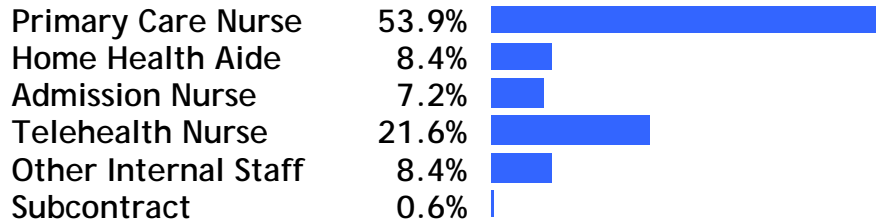
agency was initially prepared to launch its home telehealth program service. Did the basic understanding of the technology and related communication plans around the launch get developed after the purchase of the equipment?

What was the time frame between the last telehealth system you purchased and the time of implementation?

	Annual Revenue				Total
	<\$1M	≥\$1M and <\$3M	≥\$3M and <\$6M	≥\$6M	
< 30 days	0	6	4	3	13
	0.0%	10.5%	10.0%	7.5%	7.7%
30 to 90 days	7	23	14	11	55
	22.6%	40.4%	35.0%	27.5%	32.7%
91 to 180 days	17	14	12	12	55
	54.8%	24.6%	30.0%	30.0%	32.7%
> 180 days	7	14	10	14	45
	22.6%	24.6%	25.0%	35.0%	26.8%
Total	31	57	40	40	168
	100.0%	100.0%	100.0%	100.0%	100.0%

- Were inclusion and exclusion criteria well defined for users or was this developed after purchase?
- Learning how to deploy the technology and trouble shoot that set up are initially time consuming for new users of the technology.
- The impact of hiring and training designated staff to support the program (e.g. monitor nurses) on the implementation time.
- Physical infrastructure changes needed to support the program use (phone line placement, computer placement, storage areas, etc.).
- Impact of developing the related policies and clinical procedures for use of home telehealth within the agency.
- Whether or not champions of the technology were identified early on and given a voice within the agency presentation of the technology.
- How the technology was rolled out to clinical users. How was education delivered? What were the expectations of users with regard to adoption of the technology?

## Who is most likely to install a telehealth monitor in a patient home?



### Findings:

When asked who was most likely to install a telehealth monitor in a patient’s home, the majority of respondents (53.9%) responded that the primary care nurse handled this responsibility. The only other significant response was “telehealth nurse” with 21.6%. Hospital-based agencies held the largest majority with 60.7%, delegating this responsibility to the primary care nurse. The for-profit agencies, 11.8% (the only other significant representative sample in this section) reported that “other internal staff” installed their monitors. This number was much lower in other categories.

### Considerations:

Over 80% of deployment of home telehealth equipment is performed by skilled professional nursing staff.

Consideration should be given to the following:

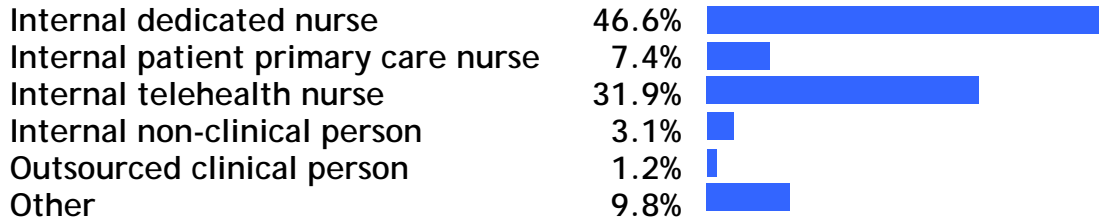
- The deployment of home telehealth equipment has

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Prim. Nurse	20	32	22	16	90
	69.0%	57.1%	53.7%	39.0%	53.9%
HHA	0	3	5	6	14
	0.0%	5.4%	12.2%	14.6%	8.4%
Ad. Nurse	3	4	1	4	12
	10.3%	7.1%	2.4%	9.8%	7.2%
Tele Nurse	3	12	10	11	36
	10.3%	21.4%	24.4%	26.8%	21.6%
Other Staff	3	5	2	4	14
	10.3%	8.9%	4.9%	9.8%	8.4%
Subcontract	0	0	1	0	1
	0.0%	0.0%	2.4%	0.0%	0.6%
<b>Total</b>	<b>29</b>	<b>56</b>	<b>41</b>	<b>41</b>	<b>167</b>
	100.0%	100.0%	100.0%	100.0%	100.0%

created predictable barriers to adoption with clinicians who are technology adverse.

- Concurrently, there are increased demands on clinicians to raise productivity of visits per day.
- Early deployment of the equipment relative to hospital discharge can facilitate a safer transition from the relatively controlled setting of the hospital to the relatively uncontrolled setting of the home.
- Equipment deployment need not be performed by a skilled professional. Having the equipment up and functional before the admitting clinician arrives may assist the nurse or therapist in achieving visit objectives in a more effective manner. In this scenario, consideration must be given to:
  - ▶ Well-defined inclusion and exclusion criteria identified at Intake.
  - ▶ Obtaining a separate consent for the equipment set up and use.
- Note: One large agency respondent reported that it uses specially trained high school and college students to put systems into the home. These students are trained in both the technical (very small) aspects of hooking up the system and in customer service. The respondent reported that these students have had a very positive impact on both acceptance of the system by patients and patients' level of satisfaction.

## Who is the primary person who monitors the data being transmitted from the patient?



### Findings:

Nearly half (46.6%) of respondents used an internal dedicated nurse to monitor the data being transmitted from the patient. An internal telehealth nurse was used by 31.9% of respondents. Agencies with less than \$1 million in annual revenue were the most likely to use an internal telehealth nurse with 44.8% claiming to do so, followed by agencies with more than \$6 million in annual revenue (41.0%).

### Considerations:

As the home health industry adapts to home telehealth integration, it also learns a new language of job title. The data appears to support the use of “internal dedicated nurses” and “internal telehealth nurses” the majority of the time.

- Outsourced telemanagement does not appear to be a common vehicle of practice.
- The use of internal patient primary care nurses, at approximately 10% reflects an integration of practice patterns. This impacts scheduling and the

**Who is the primary person who monitors the data being transmitted from the patient?**

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Ded. Nurse	13	29	19	15	76
	44.8%	52.7%	47.5%	38.5%	46.6%
Prim. Nurse	0	4	4	4	12
	0.0%	7.3%	10.0%	10.3%	7.4%
Tele. Nurse	13	13	10	16	52
	44.8%	23.6%	25.0%	41.0%	31.9%
Non-Clinical	0	3	1	1	5
	0.0%	5.5%	2.5%	2.6%	3.1%
Outsourced	0	0	1	1	2
	0.0%	0.0%	2.5%	2.6%	1.2%
Other	3	6	5	2	16
	10.3%	10.9%	12.5%	5.1%	9.8%
Total	29	55	40	39	163
	100.0%	100.0%	100.0%	100.0%	100.0%

consistency of monitoring availability. This mix does, however, avoid the often predictable silo-pit into which monitor nurses and field staff sometimes fall.

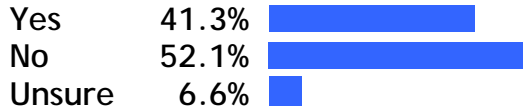
- Home telehealth may require simple monitor reading and standardized protocol response formats. Conversely, the home telehealth encounter may be a complex, bi-directional visit made by a highly skilled professional. The expanding use of home telehealth may put an electro-physiologist behind a monitor while a physical therapist exercises an EKG-monitored knee replacement patient with co-morbid heart disease.

Consistency within the nomenclature of roles and associated responsibilities will be realized as the use of home telehealth expands and standardization is achieved.

**Section III.**

**Strategies to Get Buy-in  
by Key Constituencies for  
Telehealth Services**

## Were there specific strategies that you used to get your management and supervisory staff's buy-in to starting a telehealth system?



### Findings:

While the majority of respondents (52.1%) did not have a specific strategy used to get their management and supervisory staff's buy-in when starting a telehealth system, a significant minority (41.3%) did. These numbers were consistent in all breakdown categories.

### Considerations:

The home health industry's cultural acceptance of home telehealth is often impacted by inconsistent strategic planning to capture the buy-in of its leaders.

- Optimal positioning a product or service in the mind

of those using and marketing the system is the foundation of basic marketing. In its absence, less than optimal "sales" may be predicted.

- The leadership of an organization sets the cultural tone of the organization. Inconsistency in its commitment or perceived enthusiasm will trickle down to the reporting employees.

Were there specific strategies that you used to get your management and supervisory staff's buy-in to starting a telehealth system?

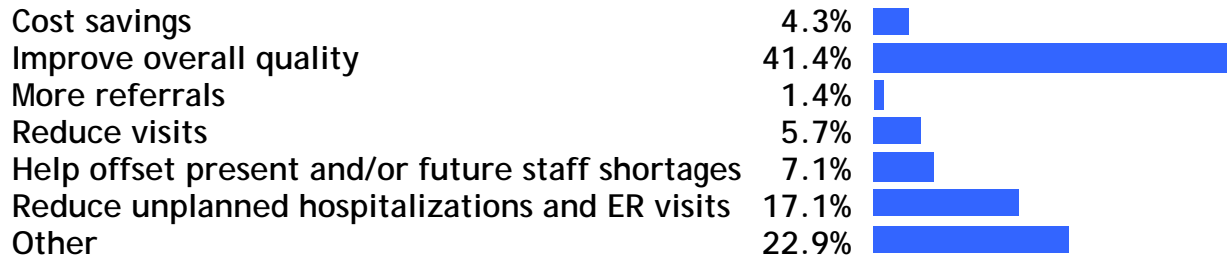
	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	3	22	20	24	69
	10.0%	38.6%	51.3%	58.5%	41.3%
No	27	31	15	14	87
	90.0%	54.4%	38.5%	34.1%	52.1%
Unsure	0	4	4	3	11
	0.0%	7.0%	10.3%	7.3%	6.6%
Total	30	57	39	41	167
	100.0%	100.0%	100.0%	100.0%	100.0%

- A communication plan that empowers leaders to effectively manage a changing healthcare environment and the perceptions of their staff when change is introduced is critical. Leadership theory stresses this concept at all levels up the employment ladder. "What was true in the past and true today will be more true than ever in the years ahead. Employee involvement, commitment, motivation and satisfaction are the cornerstones of total quality management efforts and are clearly essential to the success of the organizations."<sup>4</sup>
- Inconsistency of buy-in from agency leaders will increase the potential of mixed motivation of their reporting clinicians.

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<sup>4</sup> Fazzi, Robert, Management Plus, Maximizing Productivity through Motivation, Performance, and Commitment. Irwin Publishing, NY, NY, 1994. pp33-34

## What was the single most important strategy you used to get buy-in by your management and supervisory staff?



### Findings

The single most important strategy used to get buy-in by management for the majority of respondents was to improve overall quality (41.4%). Second was to reduce unplanned hospitalizations with a 17.1% response rate.

Surprisingly only 4.3% reported cost savings as being their most important strategy. A large number of respondents from for-profit agencies (29.6%) selected reduction in unplanned hospitalizations as their single most important strategy; a percentage significantly higher than the average.

**What was the single most important strategy you used to get buy-in by your management and supervisory staff?**

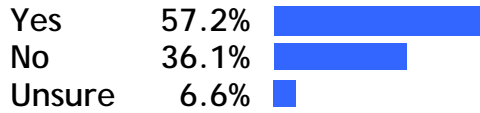
	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Savings	0	1	1	1	3
	0.0%	4.5%	4.8%	4.2%	4.3%
Quality Imp.	0	10	10	9	29
	0.0%	45.5%	47.6%	37.5%	41.4%
↑ Referrals	0	1	0	0	1
	0.0%	4.5%	0.0%	0.0%	1.4%
↓ Visits	0	2	1	1	4
	0.0%	9.1%	4.8%	4.2%	5.7%
Staff Short.	0	2	3	0	5
	0.0%	9.1%	14.3%	0.0%	7.1%
↓ Hosp/ER	3	3	2	4	12
	100.0%	13.6%	9.5%	16.7%	17.1%
Other	0	3	4	9	16
	0.0%	13.6%	19.0%	37.5%	22.9%
Total	3	22	21	24	70
	100.0%	100.0%	100.0%	100.0%	100.0%

## **Considerations:**

The message of “improving overall quality” dominates the single most important strategic approach taken by the home health industry, yet the meaning of “overall quality” may be widely interpreted by different people.

- An improvement in overall quality will be perceived differently by a financial manager, clinical manager, operational manager and performance improvement manager. Speaking to those variant managers with targeted communication will impact how they engage in hearing the message.
- The broad expanse of benefits achievable through the use of home telehealth impact variant levels of agency performance. Capturing the potential of this impact is initiated in the strategy to engage those who will make it happen.
- Managing the perception of leadership when engaging their commitment and resultant actions toward change is imperative.
- *Defining* overall quality improvement attainable through the use of home telehealth is recommended in a targeted communication plan. All of the aforementioned categories of choice are valid motivators for the passionate leadership of home telehealth initiatives.

## Were there specific strategies that you used to get your clinical staff’s buy-in to starting a telehealth system?



### Findings:

While the majority of respondents did not use a specific strategy to get management buy-in, the majority (57.2%) did implement a strategy for getting clinical staff buy-in. Subcategories that held the highest percentage of clinician buy-in strategies included urban (63.6%), freestanding (61.4%) and not-for-profit (63.8%) agencies.

### Considerations:

More than a third of the agencies surveyed did not have or were not sure if they had a targeted strategy to maximize staff buy-in to change in practice. More recent users of home telehealth are only a little more likely to engage specific strategies to enhance staff buy-in.

Were there specific strategies that you used to get your clinical staff’s buy-in to starting a telehealth system?

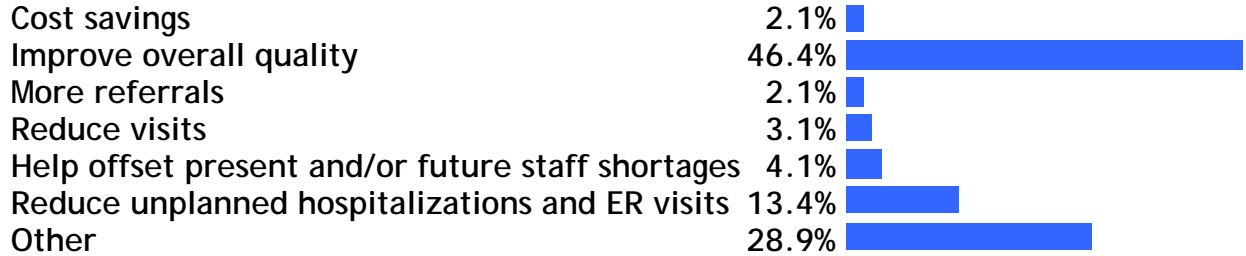
	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	10	30	26	29	95
	33.3%	52.6%	66.7%	72.5%	57.2%
No	17	23	11	9	60
	56.7%	40.4%	28.2%	22.5%	36.1%
Unsure	3	4	2	2	11
	10.0%	7.0%	5.1%	5.0%	6.6%
Total	30	57	39	40	166
	100.0%	100.0%	100.0%	100.0%	100.0%

- In home care, one of the most valuable and costly resources is highly skilled clinicians. Home care is undergoing constant change, driven by new regulations, changing patient characteristics, technologies and innovations. Engaging the mind and passion of the skilled clinician when delivering the message is integral to effective change management.
- Change management refers to the processes and techniques used to manage the people aspect of change. The goal of successful change management in

home telehealth is to achieve the most successful outcomes when a new technology or process is *introduced* into the agency.

- The objective of using change management in telehealth starts with its introduction to the folks who will use it. Assisting clinicians to adapt to and adopt the desired change will hopefully provide greater benefit to their clients. Inconsistent roll out of perception impacts the adoption of change. Related inconsistently in the return on investment and realized patient benefits is predictable.

## What was the single most important strategy you used to get buy-in by your clinical staff?



### Findings:

Almost half (46.4%) of respondents reported that improvement in overall quality was the single most important strategy in getting clinical staff buy-in. The second highest response was reduction in unplanned hospitalizations with 13.4%. More urban (16.2%) than rural (9.5%) agencies reported reduction in unplanned hospitalizations as their single most important clinician buy-in strategy. Further, more respondents from

freestanding agencies (17.4%) than from hospital-based agencies (7.4%) chose reduction of unplanned hospitalization as their single most important clinician buy-in strategy. Cost savings was not seen as a priority strategy for any group.

### Considerations:

The salient trend in strategic positioning of home telehealth is to stress the overall quality of related patient care

**What was the single most important strategy you used to get buy-in by your clinical staff?**

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Savings	0	1	0	1	2
	0.0%	3.2%	0.0%	3.4%	2.1%
Quality Imp.	0	17	16	12	45
	0.0%	54.8%	59.3%	41.4%	46.4%
↑ Referrals	0	0	1	1	2
	0.0%	0.0%	3.7%	3.4%	2.1%
↓ Visits	0	2	0	1	3
	0.0%	6.5%	0.0%	3.4%	3.1%
Staff Short.	0	0	2	2	4
	0.0%	0.0%	7.4%	6.9%	4.1%
↓ Hosp/ER	3	4	2	4	13
	30.0%	12.9%	7.4%	13.8%	13.4%
Other	7	7	6	8	28
	70.0%	22.6%	22.2%	27.6%	28.9%
Total	10	31	27	29	97
	100.0%	100.0%	100.0%	100.0%	100.0%

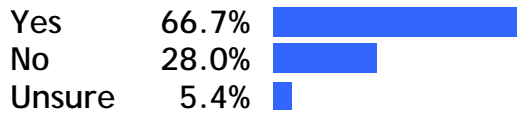
that can be achieved. "Overall quality improvement" means different things to different clinicians. Viewing what has and has not been used is informative and may reflect an impact on the potential of increasing the adoption of home telehealth.

- The reduction of visits which may be achieved is not a message targeted to clinicians. In response to changes under Prospective Payment, clinicians already perceive that they are performing fewer, more labor-intensive visits. The aforementioned data may speak to avoiding the additional, *perceived* stress incurred by reducing these visits further. Interestingly, the more targeted, focused use of visits to achieve optimal clinical outcomes is related to the message of decreasing visits (which may be viewed solely as financial in its benefit from a clinician's perspective). Related impact on mitigating the impact of staffing shortages is also notable.
- The benefit of agency stability through growth of referral sources is not a current strategy adopted by agencies, yet may appeal to employees seeking job security in a changing market.
- Cost-savings is starting to creep up in its message to clinicians. The clinicians' impact on fiscal advocacy for the patient and agency is undeniable in the age of OASIS and Medicare certified home health. Enhancing this understanding of the clinicians' responsibility can only enhance related understanding of the value of home telehealth.
- Appealing to the reduction in unplanned rehospitalization and/or ER visits is increasing as the market increases the value placed on these statistics. Pay for Performance (P4P) demonstration projects in home health place the highest incentives on reducing unplanned hospitalization and emergent care. The use of home telehealth has resulted in a:
  - ▶ 40% reduction in emergency room visits.
  - ▶ 63% reduction in hospital admissions.<sup>5</sup>

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<sup>5</sup> Veterans' Administration Findings- Published in: *Disease Management*, Volume 5, Number 2, 2002

## Did you use a “nurse champion” to help model and encourage buy-in by clinical staff?



### Findings:

Over 65% of respondents (66.7%) reported that they used a “nurse champion” to help model and encourage clinical staff buy-in. The largest percentage with nurse champions included respondents from not-for-profit agencies with 75% responding to have used them. Most other segmentations were representative of the total average.

### Considerations:

The use of this model has been increasingly adopted in home health strategy over time. Where only 53.8% of respondents using home telehealth for more than five years had nurse champions, 81.7% using home telehealth for one to three years did use nurse champions. The industry is learning.

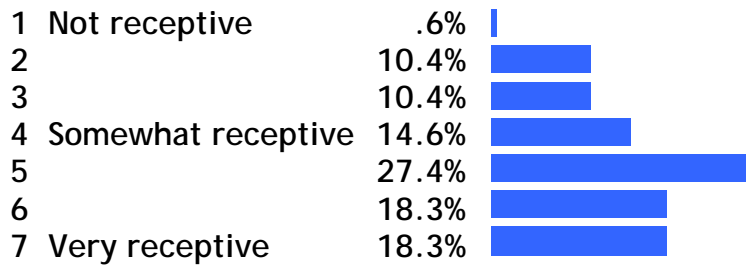
Did you use a “nurse champion” to help model and encourage buy-in by clinical staff?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	20 66.7%	35 60.3%	27 67.5%	30 75.0%	112 66.7%
No	7 23.3%	21 36.2%	11 27.5%	8 20.0%	47 28.0%
Unsure	3 10.0%	2 3.4%	2 5.0%	2 5.0%	9 5.4%
Total	30 100.0%	58 100.0%	40 100.0%	40 100.0%	168 100.0%

- Peer support in the form of a user champion reinforces acceptance and buy-in “where the rubber meets the road”.
- Growth of home telehealth programs has increased when dedicated clinicians embraced the program wholeheartedly. These champions have been credited with doing everything possible and necessary to make the home telehealth program successful.

- The use of clinical “champions” for home telehealth requires support of those champions. Like all clinicians embracing the changes required for home telehealth, these clinicians are working out the cultural and physical kinks of care delivery change. Troubleshooting equipment, having skills to address patient, referral source and their colleagues’ questions are tools needed by these champions to meet the expectation of their role.
- Providing clinician champions a voice within the organizations’ communication network enhances the penetration of their message into the culture at hand.
  - ▶ Are champions of telehealth featured at staff meetings?
  - ▶ Are clinical stories of successful patient advocacy presented by clinical champions of home telehealth in newsletters or in person to their colleagues?
  - ▶ Do the champions of home telehealth technology focus on the multiple benefits of home telehealth?

## When you first began using home telehealth, how receptive were your care managers (nurses) to using the system?



### Findings:

It is important to look at this question in relationship to the next question, “After one year of using the system, how receptive were your care managers (nurses) to using the system? On a scale of 1 to 7, 1 being not receptive and 7 being very receptive, the majority of respondents rated the receptiveness of their care managers (nurses) use of the system a 5. Closely behind were ratings of 6 and 7, both with 18.3%. Twenty percent of respondents from rural agencies gave the rating of 2, or not very receptive, while almost the same percentage of respondents from urban agencies (19.3%) gave a rating of 7, very receptive.

### Considerations:

The use of home telehealth over time has clearly influenced the receptivity of staff with regard to its use.

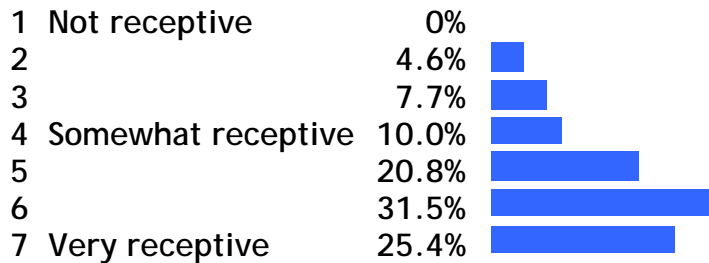
- Fear of the unknown impact of home telehealth on an individual’s practice inhibits receptivity.

**When you first began using home telehealth, how receptive were your care managers (nurses) to using the system?**

	Annual Revenue				Total
	<1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
1	0	0	1	0	1
	0.0%	0.0%	2.6%	0.0%	0.6%
2	7	4	2	4	17
	23.3%	7.1%	5.3%	10.0%	10.4%
3	3	6	3	5	17
	10.0%	10.7%	7.9%	12.5%	10.4%
4	0	11	8	5	24
	0.0%	19.6%	21.1%	12.5%	14.6%
5	3	14	14	14	45
	10.0%	25.0%	36.8%	35.0%	27.4%
6	7	11	5	7	30
	23.3%	19.6%	13.2%	17.5%	18.3%
7	10	10	5	5	30
	33.3%	17.9%	13.2%	12.5%	18.3%
Total	30	56	38	40	164
	100.0%	100.0%	100.0%	100.0%	100.0%

- Unrecognized benefits of home telehealth technology will negatively impact the active championing of the technology by the clinical “grassroots.”
- Penetration of the home health market’s literature and educational programs with home telehealth success stories has heightened awareness and related acceptance. How is this information being brought to the grassroots of home health practitioners? How can this modeling be used within individual agencies and clinical teams to enhance acceptance?
- Are those who determine the roll-out or expansion of home telehealth practice maximizing industry knowledge to continue to support further receptivity to home telehealth?
- The potential of home telehealth to be used in expanded home health, palliative care, hospice programs is significant. Lessons learned from gaining receptivity may be applied to accelerating these exciting changes within additional product lines and disease management initiatives.
- Staff buy-in helps agency home telehealth programs pay for themselves. Initial introduction to the programs is only the beginning; longer ongoing incentives to evolve the programs, refine and expand them, is critical.

## After one year of using the system, how receptive were your care managers (nurses) to using the system?



### Findings:

Of the respondents who reported to have been using their telehealth systems for more than one year, a total of 56.9% stated that their care managers (nurses) were receptive (31.5%) and very receptive (25.4%). Over half (53.0%) of for-profit agency care managers were receptive or very receptive. Hospital-based agencies had the least receptive care managers at 22.2%. An important note is that after using telehealth, there is a greater level of receptivity by agency staff.

### Considerations:

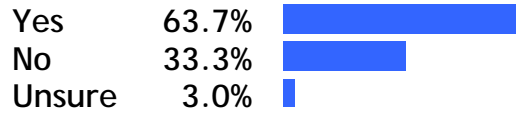
The later entrants to the use of home telehealth appear as receptive (and sometimes more receptive) to its use. The positioning of telehealth in mind of the “nurse consumer” has evolved over the past five years. The message and method by which it is introduced has evolved with the evidence of its clinical worth. Increased support comes from a number of factors:

After one year of using the system, how receptive were your care managers (nurses) to using the system?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
1	0	0	0	0	0
	0.0%	0.0%	0.0%	0.0%	0.0%
2	3	1	2	0	6
	13.0%	2.3%	6.3%	0.0%	4.6%
3	3	4	2	1	10
	13.0%	9.1%	6.3%	3.2%	7.7%
4	0	7	3	3	13
	0.0%	15.9%	9.4%	9.7%	10.0%
5	3	7	10	7	27
	13.0%	15.9%	31.3%	22.6%	20.8%
6	7	12	8	14	41
	30.4%	27.3%	25.0%	45.2%	31.5%
7	7	13	7	6	33
	30.4%	29.5%	21.9%	19.4%	25.4%
Total	23	44	32	31	130
	100.0%	100.0%	100.0%	100.0%	100.0%

- There is an increased exposure of home telehealth and its success stories in home health media.
- Data to support sustained clinical outcome improvement is increasing as home telehealth research findings are reported.
- The exposure of clinicians to technology integration into practice is on the rise. From Point of Care (POC) lab testing such as PT/INR to POC electronic medical records, technology is more visible in practice. Acceptance is incrementally increased.
- One question must be asked. If 7.1% of the nurses who have had a home telehealth system for over five years are absolutely resistant to its use, are they even participating in the program? Do their patients receive the benefits of home telehealth? Is home telehealth an expectation of their practice? Is the problem the nurses or agency leadership?
- What is the impact on nurse acceptance of the front-line manager and his/her perception or acceptance of home telehealth? Does this leader know *how* to successfully lead through change?

## Were there specific strategies that you used to get your local physician’s buy-in to referring their patients to your telehealth service?



### Findings:

Over 60% of respondents (63.7%) said that they used specific strategies to get their local physician’s buy-in for referring patients to their telehealth service. While this majority breakdown remained consistent across the segmentations, there is a difference between urban (69.2%) and rural (51.0%) respondents who used this strategy.

### Considerations:

Physician champions for home telehealth are also created through enhanced physician understanding of the benefits of home telehealth technology adoption. The majority of agencies developed a strategy to engage the physician in this process.

Were there specific strategies that you used to get your local physician’s buy-in to referring their patients to your telehealth service?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	17	35	29	26	107
	56.7%	60.3%	72.5%	65.0%	63.7%
No	13	21	10	12	56
	43.3%	36.2%	25.0%	30.0%	33.3%
Unsure	0	2	1	2	5
	0.0%	3.4%	2.5%	5.0%	3.0%
Total	30	58	40	40	168
	100.0%	100.0%	100.0%	100.0%	100.0%

Overall, the longer an agency used home telehealth, the more they appeared to value this strategy. (An exception may be seen in agencies using home telehealth for greater than five years. Perhaps these early adopters were less able to provide meaningful data to capture and create physician champions of home telehealth.)

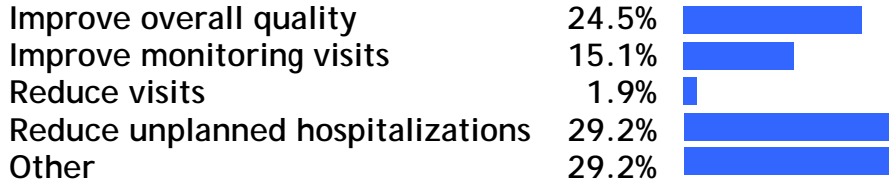
- Physicians must support the ordered intervention of home telehealth. Without their understanding of the technology or buy-in to its results, the

greater the potential barrier to home care clinicians integrating telehealth into their treatment plan.

- If the physician is a critical link in the chain, what does he/she need to hear? How can the message be positioned for their maximum buy-in?
- From the physician's viewpoint, is there an anticipation of more work, or a greater efficiency?
- Some physicians may have experienced more work associated with monitored patients. This experience may well have been impacted by the presence or absence of an initial strategy of physician engagement. Depending on the refinement of a proactive clinical protocol for use, the work of reacting to clinical data findings is variable. Calls that "chase" predictable clinical changes are more frequently made than with refined protocols. Refined protocols for telemanagement of disease report more salient recognition of trends outside of anticipated clinical findings. Proactive physician orders for clinical protocols which respond to changes in clinical status (such as pushing IV Lasix for specific incremental weight increase), help manage clinical risk. Reactive physician orders often manage clinical risk by sending patients to the hospital.
- Establishing a relationship with the physician to enhance support of the technology requires varying levels of strategy. Developing a strategy to build the relationship between the physician and use of home telehealth has many benefits. The agency benefits through optimal responsive use of clinical data. The physician benefits through feeling appropriately utilized relative to time and expertise and gaining greater insight into their patient's status. The patient ultimately benefits when the home health care team, inclusive of the physician, works collaboratively to best manage their disease.

Note: There are increasing numbers of physician practices considering using telehealth. This may represent a new form of competition for agencies in the future, particularly for those who have opted not to initiate a telehealth practice in an area where others have done so.

## What was the single most important strategy you used to get buy-in by physicians?



### Findings:

The two most important strategies that respondents used to gain physician buy-in was focusing on the potential of telehealth system to reduce unplanned hospitalizations (29.2%) and to improve overall quality of care (24.5%). We saw the strongest response for reducing hospitalization rates from the for-profit agency respondents, with 34% choosing this as their single most important strategy. Very few people (1.9%) chose reducing visits as their top response.

### Considerations:

What single strategy most engaged physicians? “Improving overall quality” and “reduce unplanned hospitalizations” are only surpassed in strategy by the nebulous concept of “other.”

- Primary market research is compelled to learn how best to position home telehealth in the mind of the physician.
- Market strategy compels agencies to perform primary market research on selected physician groups. How else can they determine what exactly must

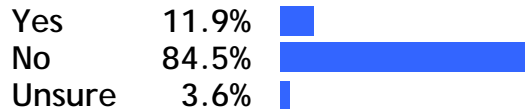
What was the single most important strategy you used to get buy-in by physicians?

	Annual Revenue				Total
	<\$1M	≥\$1M and <\$3M	≥\$3M and <\$6M	≥\$6M	
↑ Quality	0	12	7	7	26
	0.0%	35.3%	23.3%	26.9%	24.5%
↑ Monitoring	3	3	4	6	16
	18.8%	8.8%	13.3%	23.1%	15.1%
↓ Visits	0	1	1	0	2
	0.0%	2.9%	3.3%	0.0%	1.9%
↓ Hosp.	13	6	8	4	31
	81.3%	17.6%	26.7%	15.4%	29.2%
Other	0	12	10	9	31
	0.0%	35.3%	33.3%	34.6%	29.2%
Total	16	34	30	26	106
	100.0%	100.0%	100.0%	100.0%	100.0%

be addressed in the marketing message *to* them. Ask the question, "Here is something that can work your way on behalf of your patients; how do you envision this? What would you like to see?" To find out what is in the mind of the physician, you have to ask them their opinion. Positioning the service to meet the perceived and real needs will predictably increase physician buy-in.

- A developed strategy for increasing physician buy-in takes into account the full representation of the primary market research mentioned above.
- All health care professionals are compelled to manage clinical risk. Home telehealth may be viewed with fear of increased risk or as a better manager of risk, depending on its integration into practice.
- Physicians are also subject to an evolving pay-for-performance reimbursement system. Improving their clinical outcomes through the use of home telehealth "wins" for the patient, the home health provider and the physician, under these scenarios.

## Did you use a “physician champion” to help model and encourage buy-in by physicians throughout your service area?



### Findings:

A large majority of respondents (84.5%) stated that they did not use a physician champion to help model and encourage buy-in from other physicians. All respondents (100%) from agencies generating less than \$1 million in annual revenue claimed they didn't champion and 88.2% of those from for-profit agencies claimed the same.

### Considerations:

It is clear that the majority of agencies have not used a physician champion approach to build their program relationship with other physicians in their service area. Looking in a “marketing mirror” may be difficult at times; how much market potential may have been lost given this approach?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	0	7	8	26	20
	0.0%	12.1%	20.0%	65.0%	11.9%
No	30	48	31	12	142
	100.0%	82.8%	77.5%	30.0%	84.5%
Unsure	0	3	1	2	6
	0.0%	5.2%	2.5%	5.0%	3.6%
Total	30	58	40	40	168
	100.0%	100.0%	100.0%	100.0%	100.0%

- Successful marketing addresses the positioning of the product. The perception of that product in the mind of the consumer is critical. What will enhance or detract from the optimal positioning of home telehealth in the mind of a physician?

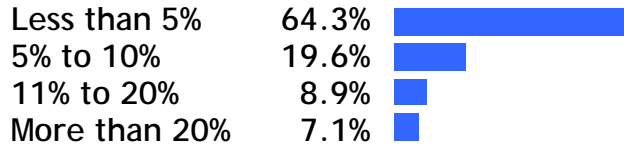
- Availability of physician time and agency time to support a “physician champion” relationship must be carefully managed. Efficiencies in communication and effectiveness of the resultant public relations may make or break this time demand and its perceived worth.
- Physicians are contacted by lots of marketers within the healthcare sphere; exposure to marketing efforts is high. What contact will yield the most substantial result?
  - ▶ Clinical data that reveals pertinent, valid findings of clinical effectiveness goes a long way within the science of medicine.
  - ▶ Anecdotal, peer level support of that clinical data may further validate the message in the mind of the physician. Physician to physician communication of features/benefits as well as their own experience ties the message to a perceived, credible source who “gets the realities” of the physician’s practice.
  - ▶ Differentiation of the marketing message may be achieved within a physician to physician network. Of the 14.6% of surveyed agencies who do have physician champions, how many are successfully penetrating the markets of the other 81.8%?

Note: All agencies have Medical Directors. Efforts should be made to involve them at some level in strategizing how to best approach the physician community. Key to the success of this effort is to educate and gain the buy-in of the Medical Director.

# **Section IV.**

## **Experiences With Your Telehealth Service**

## What percent of your patients who qualify for telehealth refuse to use telemonitoring services?



### Findings:

Very few patients qualifying for telehealth refused to use the telemonitoring system. Almost 65% (64.3%) said that this was less than 5% of their patients and nearly 20% (19.6%) said that this was only 5% to 10% of their patients. These numbers were even higher with hospital-based agencies with 72.2% responding that fewer than 5% of their patients refused the service (compared to 60.5% of freestanding agencies claiming the same).

### Considerations:

Only a small percentage of home health patients refuse to use telemonitoring services. The variance within the presentation of the remote monitoring system, its advantages and ease of use will undoubtedly impact the receptivity of the patient.

- As to why patients

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
<5%	27	34	21	26	108
	90.0%	59.6%	52.5%	63.4%	64.3%
5% to 10%	0	11	13	9	33
	0.0%	19.3%	32.5%	22.0%	19.6%
11 to 20%	0	6	5	4	15
	0.0%	10.5%	12.5%	9.8%	8.9%
>20%	3	6	1	2	12
	10.0%	10.5%	2.5%	4.9%	7.1%
<b>Total</b>	<b>30</b>	<b>57</b>	<b>40</b>	<b>41</b>	<b>168</b>
	100.0%	100.0%	100.0%	100.0%	100.0%

refuse telehealth systems in their homes, two reasons were most cited. The first had to do with how comfortable they were with the equipment. Just over 30% of those who refused the equipment reported being afraid of it. The second most common reason cited related to how intrusive the equipment

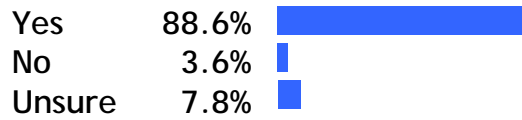
was. Just under 30% (27.7%) of the agencies reported that patients often refused equipment because of the feeling that it is intrusive.

- Successful *marketing to the patient* addresses the positioning of the product. The perception of that product in the mind of the consumer is critical. If the clinician doesn't believe that elderly patients can use home telehealth, their patients probably won't believe it either. If patients believe that the technology will help them better manage their illnesses, the patients/caregivers are more likely to respond with acceptance and enthusiasm.
- Are telehealth program inclusion/exclusion criteria clearly identified to the agencies referral sources and receiving Intake department? Early identification of the appropriate and inappropriate patient for home telehealth should reduce refusal or lack of acceptance.
- "Significant improvement in Quality of Life" was noted in a report relaying the success of the Veterans' Administration Findings of the use of home telehealth.<sup>6</sup> This finding supports the low percentage of patient refusal.

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<sup>6</sup> Veterans' Administration Findings- Published in: *Disease Management*, Volume 5, Number 2, 2002

## Did your telehealth service have an impact on improving the overall quality of services provided to patients?



### Findings:

This is probably one of the most important questions asked during the survey. A full 88.6% of those surveyed reported that telehealth programs improved the overall quality of services provided to patients. Only 3.6% felt it had no impact with 7.8% reporting that they were still not sure.

### Considerations:

When it comes to questioning the value of telehealth programs, there are three questions that are most frequently cited as the key questions that determine whether investment in telehealth services is warranted. Two are cost savings and patient satisfaction. The third pillar is impact of telehealth on quality.

Did your telehealth service have an impact on improving the overall quality of services provided to patients?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	27	51	34	35	147
	90.0%	89.5%	87.2%	87.5%	88.6%
No	0	4	1	1	6
	.0%	7.0%	2.6%	2.5%	3.6%
Unsure	3	2	4	4	13
	10.0%	3.5%	10.3%	10.0%	7.8%
Total	30	57	39	40	166
	100.0%	100.0%	100.0%	100.0%	100.0%

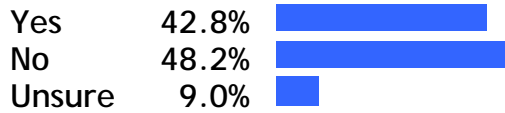
In terms of quality, 76.8% had a formal way of measuring the clinical and quality impact of telehealth services. It is no surprise given that 51.6% reported that measuring overall quality was the most important goal when implementing the program. And, it worked.

Regardless of the size of agency, legal status, ownership or area served, the vast majority of agencies report that the use of telehealth services clearly improves quality. In fact, on two of the major measures being used by CMS – unplanned hospitalization and visits to the emergency room – the study found that agencies using telehealth services report a reduction in the incidence related to both measures.

- 76.6% report a reduction in unplanned hospitalizations.
- 77.2% report a reduction in emergency room visits.

What is clear is that through appropriate monitoring of patients, agencies are in a much better position to be aware of changes taking place in patients' health status. This allows agencies to intervene when necessary while also providing agencies with the information needed to reassure a patient who might be afraid but who is more stable than they had originally thought.

## Did your telehealth service have an impact on helping you reduce the overall cost of services?



### Findings:

While most agencies reported that reducing cost was not their primary goal when starting a telehealth service (improving quality was their number one goal), cost reduction was still of major concern. Responses were nearly evenly mixed between those who reported that it led to reduced cost (42.8%) and those who reported it had no impact at all (48.2%). The other 9.0% stated that they did not have the information to make an accurate assessment.

### Considerations:

One of the biggest barriers for agencies interested in starting telehealth services is cost. Unless funded by outside sources, there is a capital expenditure commitment that agencies must make. For some agencies, entrance into the telehealth arena is difficult.

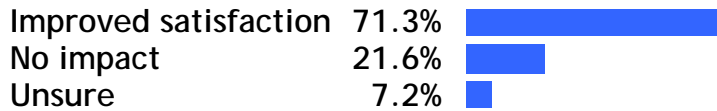
Did your telehealth service have an impact on helping you reduce overall cost of services?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	13	24	18	16	71
	44.8%	42.1%	46.2%	39.0%	42.8%
No	13	30	17	20	80
	44.8%	52.6%	43.6%	48.8%	48.2%
Unsure	3	3	4	5	15
	10.3%	5.3%	10.3%	12.2%	9.0%
Total	29	57	39	41	166
	100.0%	100.0%	100.0%	100.0%	100.0%

CMS's response is that agencies can make up the difference through cost savings.

Given the fact that 42.8% of agencies reported that they were able to reduce costs, it is clear that it is possible. The fact that 48.2% report that they have not yet reduced costs makes it clear that there are operational, clinical and structural challenges that must be addressed in order to take full advantage of the cost saving opportunities provided by telehealth services.

## What impact has your telehealth service had on the satisfaction levels of patients who receive telehealth services?



### Findings:

The majority of respondents (71.3%) who use patient satisfaction monitoring services said that their telehealth service improved their levels of satisfaction. This number was even higher with for-profit agencies where 81.3% of respondents claimed the same.

### Considerations:

Patient satisfaction is much more likely to improve than not when telehealth services are employed.

- Patients are often surprised by the ease of use of the technology and the effectiveness of the technology.

**What impact has your telehealth service had on the satisfaction levels of patients who receive telehealth services?**

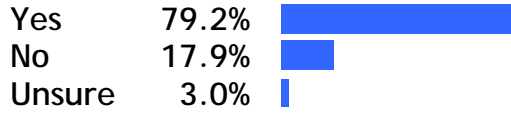
	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Improved	27	39	26	27	119
	90.0%	68.4%	65.0%	67.5%	71.3%
No Impact	3	15	10	8	36
	10.0%	26.3%	25.0%	20.0%	21.6%
Unsure	0	3	4	5	12
	0.0%	5.3%	10.0%	12.5%	7.2%
Total	30	57	40	40	167
	100.0%	100.0%	100.0%	100.0%	100.0%

- Research suggests patients will remain satisfied with home telehealth “as long as telemedicine does not entirely replace the traditional, face-to-face visits patients have with their doctors and as long as privacy safeguards are maintained.”<sup>7</sup>
- The evolution of healthcare service concurrent with person-centered care initiatives speak to the need to empower patients and their caregivers with tools to actively participate in the management of their health and illness.

<sup>7</sup> <http://www2.kumc.edu/telemedicine/research/patientsatisfaction.htm>

- Connecting the patient to the healthcare system in a tangible, visible manner usually accomplishes the following:
  - ▶ Improved access to care.
  - ▶ Satisfaction with the technology.
  - ▶ Satisfaction with the related communication which may occur as a result of the telehealth monitoring.
  - ▶ Increased patient/caregiver involvement in managing their disease, rendering an increased sense of control.

## At discharge, are some patients or family members reluctant to have the telemonitoring system removed?



### Findings:

Almost 80% of respondents (79.2%) claimed that their patients or family members were reluctant to have the telemonitoring system removed at discharge. These numbers were consistent across all segmentations. For-profit agencies had the highest number of reluctant patients or family members with 81.6% stating that this was the case.

### Considerations:

A true reflection of the patient satisfaction achieved with home telehealth; patients predominantly do not want to let the equipment go when the home health episodes are over.

- Policy makers and providers face the ethical challenge of

At discharge, are some patients or family members reluctant to have the telemonitoring system removed?

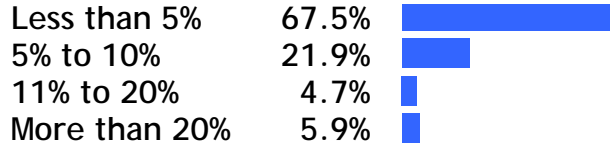
	Annual Revenue				Total
	<\$1M	≥\$1M and <\$3M	≥\$3M and <\$6M	≥\$6M	
Yes	27	39	33	34	133
	90.0%	67.2%	82.5%	85.0%	79.2%
No	3	17	5	5	30
	10.0%	29.3%	12.5%	12.5%	17.9%
Unsure	0	2	2	1	5
	0.0%	3.4%	5.0%	2.5%	3.0%
Total	30	58	40	40	168
	100.0%	100.0%	100.0%	100.0%	100.0%

removing clinically efficacious home telehealth equipment when skilled intermittent homecare services are ending. As data continues to support significant cost-savings to the healthcare system, the use of telehealth equipment may evolve further reimbursement support.

- Affording the patient the option to keep the equipment is highly dependent on their ability to pay for the service.

- A percentage of patients or caregivers who did not want to give up home telehealth equipment may be willing to pay for that equipment privately. The market response paves the road in some demographics for private pay product line development.
- Some Medicaid waiver programs are paying for the use of home telemonitoring outside a skilled episode of home health. Providers of home healthcare and home telehealth may or may not be aware of potential funding sources for their patients' continued care access and their potentially increased revenue stream.
- Other entities beyond home healthcare find this an inviting "market space", given the growth demographic at hand. Disease management companies are working with payers to promote the continued, long term use of home telehealth in both disease management and wellness maintenance. Employers may also engage ongoing use of these devices to reduce their costs of healthcare coverage.
- Forward-thinking home health providers are positioning themselves as a one-stop-shop for care along the continuum of need.

## What percentage of your patients or family members would actually pay for the service on a monthly basis after discharge?



### Findings:

Even though the majority of respondents claimed that their patients were reluctant to have the telehealth system removed at discharge, two thirds of the agencies (67.5%) stated that less than 5% of their clients would actually pay for these services. A number of rural agencies (10.2%) did report that more than 20% of their clients would likely pay for keeping the telehealth services active.

### Considerations:

Over 90% of home care patients are estimated to *not be willing* to actually pay for telemonitoring services. Within a perceived culture of healthcare entitlement, this may not seem surprising. Given the desire of patients to keep their equipment, coupled with the clinical efficacy of the telemonitoring/

**What percentage of your patients or family members would actually pay for the service on a monthly basis after discharge?**

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Less than 5%	20	45	25	24	114
	66.7%	77.6%	62.5%	58.5%	67.5%
5% to 10%	7	7	11	12	37
	23.3%	12.1%	27.5%	29.3%	21.9%
11% to 20%	0	3	2	3	8
	.0%	5.2%	5.0%	7.3%	4.7%
More than 20%	3	3	2	2	10
	10.0%	5.2%	5.0%	4.9%	5.9%
<b>Total</b>	<b>30</b>	<b>58</b>	<b>40</b>	<b>41</b>	<b>169</b>
	100.0%	100.0%	100.0%	100.0%	100.0%

telehealth within certain diseases, this market trend begs further scrutiny.

- What were the varying price points set on an offer to provide home telehealth services privately?

- To whom was the service marketed? Adult children of elderly home health recipients may be more amenable to paying for the service offering for their parent than the patient.
- Private pay markets are expanded when adding payers and patient groups. Some managed care companies are contracting with Disease Management groups for telemonitoring of patients. Some employment groups are doing the same for wellness management.
- The market demographics will vary by region, indicating geographic and cultural areas supportive of private healthcare expenditure. Waiver funded programs under Medicaid or in allocated grant funding for specific populations may also offer private market revenue streams to those providing the service.
- The efficiency of the home telehealth service provision and the effectiveness of its impact are highly variable within different delivery systems. Cost structures and related price points for service purchase will vary significantly. As the industry better understands its practice, efficiencies within the practice should be recognized and employed, lowering costs. Lower cost translates into potentially larger consumer markets.
- In 2005, 2,993,014 individuals received Medicare services. Far more received Medicaid services. If just 5% of those Medicare recipients or their family members paid for telehealth services, that would be nearly 150,000 people. Many of these people are in the same demographic areas. With the Medicare numbers growing at an exponential rate, there is clearly emerging opportunities for agencies in some geographic areas for these types of services.

## What was the payor mix of respondents?

### Findings:

The survey found that the majority of patients served by home care agencies using telehealth services were patients covered through traditional Medicare. Nearly half of respondents (47.9%) stated that more than 76% of all their patients were Medicare patients. The majority of respondents also reported that the percentage of Medicaid patients served was less than 25%.

What was the payor mix of respondents?							
	None	1% to 5%	6% to 25%	26% to 50%	51% to 75%	>76%	Total
Medicare	1	0	7	23	56	80	167
	.6%	.0%	4.2%	13.8%	33.5%	47.9%	100.0%
Medicare Managed Care	38	61	46	15	2	7	169
	22.5%	36.1%	27.2%	8.9%	1.2%	4.1%	100.0%
Medicaid	21	58	65	11	12	0	167
	12.6%	34.7%	38.9%	6.6%	7.2%	.0%	100.0%
Hospice	114	18	22	8	2	4	168
	67.9%	10.7%	13.1%	41.8%	1.2%	2.4%	100.0%
Private Pay	38	78	42	8	1	0	167
	22.8%	46.7%	25.1%	4.8%	.6%	.0%	100.0%
Other	76	49	37	6	1	1	170
	44.7%	28.6%	21.8%	3.5%	.6%	.6%	100.0%

### Considerations:

Predominantly Medicare-certified, the home telehealth market in certified agencies hinges on Medicare episodic reimbursement under the Prospective Payment System (PPS).

- Under PPS, episodic productivity and cost savings are achieved through optimal achievement of goals within the most efficient use of resources. The choice of how to manage patient care is the agency's, within regulatory guidelines. Home health care has the freedom of employing telehealth in the home setting, within physician ordered parameters, under Medicare. Extracted from the Center for Telehealth and E-Health Law webpage: "In a 2004 report from the U.S. Department of Commerce, it was estimated that

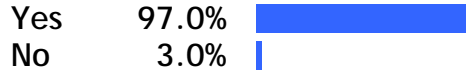
- 64.4% of America's health care is insured through private payers. Private insurance can cover telehealth services either on a voluntary basis or as a result of a state legislative mandate." The website alluded to a missed assumption that private payers don't purchase home telehealth. It was noted that... "38 programs in 25 states currently receive reimbursements from private payers. Three programs receive reimbursement for store and forward, and seven programs receive reimbursement for facility fees. While the market assumption is that private payers do not reimburse for telemedicine, in reality over 100 private payers currently reimburse for telemedicine." <sup>8</sup> Competitive for the patient, Managed Medicare providers seek market differentiation based on optimal care provision. The adoption of home telehealth within accepted, reimbursed programs may optimize this desirable trait.
- Telehospice is a relatively new concept for most hospice providers. The applicability of home telehealth to the hospice market is strong. Given the cost and complexity of hospice care, clinical staff shortages are not uncommon, especially in some geographic areas. Enhancing the reach of an on call nurse or the productivity of an assessing clinician, home telehealth has been proven valuable. Different applications of home telehealth have been successfully used in telehospice. Remote monitoring for symptom management in end stage CHF has reduced emergency room visit costs under hospice reimbursement and facilitated the patients' ability to stay home. Direct video consult has assisted on call triage clinicians in determining whether an in-person visit is required (especially helpful in rural areas or with a shortage of available clinicians).
  - Given the constriction of state funds and the increase in healthcare demand, Medicaid programs are a logical "fit" for the application of home telehealth. CMS' web site notes that "Medicaid reimbursement for services furnished through telemedicine applications is available, at the state's option, as a cost-effective alternative to the more traditional ways of providing medical care."<sup>9</sup> It is also noted on the CMS site that at least 18 states are allowing reimbursement for services provided via telemedicine.

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<sup>8</sup> <http://www.telehealthlawcenter.org/?c=129>

<sup>9</sup> <http://www.cms.hhs.gov/Telemedicine>

## Do you have criteria for deciding which patients would be appropriate for using a telehealth unit?



### Findings:

Almost all respondents (97%) said that they had a criterion for deciding which patients would be appropriate for using a telehealth unit. Of these respondents, 77.5% said they had a risk assessment tool that they use to determine patient need.

### Considerations:

While most agencies demonstrate having criteria for deciding which patients would be appropriate for using home telehealth, not all have risk assessment tools to further enhance screening for the application of home

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	30	54	38	39	161
	100.0%	94.7%	97.4%	97.5%	97.0%
No	0	3	1	1	5
	0.0%	5.3%	2.6%	2.5%	3.0%
Total	30	57	39	40	166
	100.0%	100.0%	100.0%	100.0%	100.0%

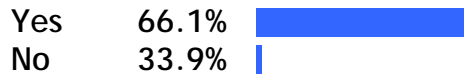
telehealth. Of all agencies that have telehealth systems, 77.5% have risk adjustment tools although many report various levels of satisfaction with their tool.

- The development of a good business plan seeks the following clarification:
  - ▶ What is the product?
  - ▶ For whom is it intended?
  - ▶ Under what conditions?
  - ▶ What will it cost, who will pay for it?
  - ▶ How will it make money?
  - ▶ What are barriers to entry?

These general questions are applicable to inclusion/exclusion criteria for home telehealth and if asked, may save a great deal of time and cost in the future.

- Recognition of the home telehealth at the earliest entry point in service delivery enhances the clinical opportunity to optimize the patient's transition to home. The key period of transition from the controlled setting of the hospital to the uncontrolled setting of the home may now be illustrated with a dynamic flow of clinical data. Having criteria or a risk adjustment tool can help enhance this process.

## Is your telehealth program part of a chronic disease management program?



### Findings:

With nearly all respondents (97%) saying that they had criteria for determining to whom to provide telehealth services, it is no surprise that two-thirds of respondents (66.1%) report that their telehealth services are part of a chronic disease management program.

### Considerations:

In many ways, it is not a surprise that agencies are focusing on using their telehealth units on patients with chronic diseases.

According to a study by the Milken Institute (An Unhealthy America: The Economic Burden of

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
Yes	23	34	25	29	111
	76.7%	58.6%	64.1%	70.7%	66.1%
No	7	24	14	12	57
	23.3%	41.4%	35.9%	29.3%	33.9%
Total	30	58	39	41	168
	100.0%	100.0%	100.0%	100.0%	100.0%

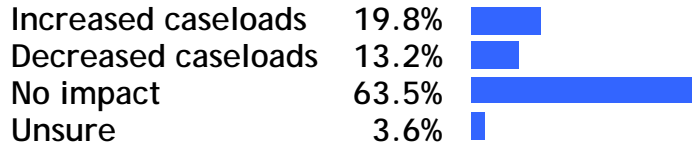
Chronic Disease, Charting a New Course to Save Lives and Increase Productivity and Economic Growth, October 2007), more than half of Americans suffer from one or more chronic diseases.

In a 2007 study released by the Health Care Financing Review (2007 Statistical Supplement, Table 7.6, Persons Using Medicare Home Health Agency Services, Visits, Total Charges, Visit Charges, and Program Payments, by Principal Diagnosis Within Major Diagnostic Classifications (MDCs): Calendar Year 2005), it was reported that the number of patients and visits provided by home care agencies to Medicare clients was significantly growing. The top four chronic diagnoses, numbers of people served and total cost of services by home care agencies is as follows:

<b>Diagnosis</b>	<b>Number of Patients</b>	<b>Visits</b>	<b>Total Cost/ Diagnosis</b>
CHF	170,000	3,573,000	\$433,864,000
COPD	73,000	1,481,000	\$179,368,000
Diabetes	261,000	14,188,000	\$1,462,254,000
Hypertension	116,000	2,323,000	\$297,456,000

What makes matters worse is that patients with chronic diseases have more hospitalizations, have more visits to the emergency room, are more costly than the average patient and have a higher risk of being institutionalized. Focusing on these high risk, high cost patients clearly makes good business and quality sense.

## What impact has your telehealth program had on the caseloads of clinical staff involved with the program?



### Findings

The majority of respondents (63.5%) reported that their telehealth program had no impact on the caseloads of clinical staff involved with the program. Rural agencies reported the least impact with 70% responding that they did not see an impact. Only 8% of rural agencies reported that their telehealth program decreased caseloads, versus 16.2% of urban agencies.

### Considerations:

Home telehealth provides the potential ability to increase the number of patients clinicians are able to manage. The data reveals a predictable mix of some clinicians increasing caseload and others decreasing caseload. The mixed-bag of response reflects the variable use and variably-effective integration of the technology into a clinical model.

**What impact has your telehealth program had on the caseloads of clinical staff involved with the program?**

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
↑ Caseload	7	10	9	7	33
	23.3%	17.5%	22.5%	17.5%	19.8%
↓ Caseload	3	11	4	4	22
	10.0%	19.3%	10.0%	10.0%	13.2%
No Impact	20	33	26	27	106
	66.7%	57.9%	65.0%	67.5%	63.5%
Unsure	0	3	1	2	6
	0.0%	5.3%	2.5%	5.0%	3.6%
<b>Total</b>	<b>30</b>	<b>57</b>	<b>40</b>	<b>40</b>	<b>167</b>
	100.0%	100.0%	100.0%	100.0%	100.0%

- Additional revenue may be achieved if the number of patients managed by the clinician is higher. In a study of 32 agencies using remote monitoring,

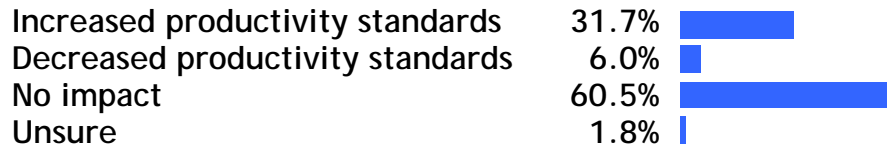
caseloads for telemonitored patients was reported to increase, on average, 42%.<sup>10</sup> The results of this study suggest differing:

- ▶ types of home telehealth use
  - ▶ clinical models
  - ▶ operational models
  - ▶ clinician technique and competency.
- Caseload capacity will be impacted by many factors.
    - ▶ A monitor nurse or clinical specialist performing remote visits may engage a larger caseload. No traveling between visits and targeted encounters extend the reach of the clinician and increase productivity.
    - ▶ A field clinician using visits and trended telehealth data can provide targeted home visits in addition to telephonic follow up and intervention. Measuring productivity within this model of care delivery is a change for traditional home health providers.
    - ▶ Reduced visits per episode may be achieved in home telehealth patients, as visits are planned on an as-needed, vs. “best guess” basis (with supportive telephony). If a clinician has fewer visits per patient, it is logical that they may be able to support a higher caseload of patients safely.
    - ▶ Work capacity is impacted by work flow and individual skill-sets, such as:
      - Dynamic integration of monitored data and related visit planning
      - Effective time management skills
      - Geographically efficient assignment of cases for integrated visiting staff
      - Reduction of mandated office time.

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<sup>10</sup> Remington Report Supplement. July/August, 2006, pp.12

## What impact has your telehealth program had on the productivity standards of the nurses involved with the program?



### Findings

The majority of respondents (60.5%) reported that their telehealth program had no impact on the productivity standards of nurses involved in the program; however, 31.7% did say that it increased productivity. For-profit agencies saw the largest increase in productivity with 45.3% responding an increase. Only 21.5% of not-for-profit agencies reported an increase in productivity and 68.4% said they saw no impact.

### Considerations:

A significant industry challenge, positively impacting clinician productivity is achieved a little over a quarter of the time within telehealth programs. Little decrease in productivity is evident and more than 60% of the market do not report any impact.

- Variant gains in productivity through the use of home telehealth are revealed depending on the role of the practitioner. Providing healthcare at a distance through bidirectional video

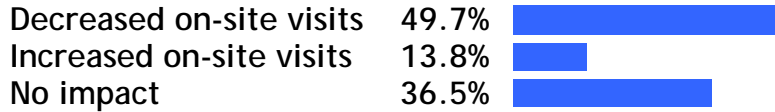
**What impact has your telehealth program had on the productivity standards of the nurses involved with the program?**

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
↑ Productivity	17	20	8	8	53
	56.7%	34.5%	20.5%	20.0%	31.7%
↓ Productivity	3	3	2	2	10
	10.0%	5.2%	5.1%	5.0%	6.0%
No Impact	10	33	28	30	101
	33.3%	56.9%	71.8%	75.0%	60.5%
Unsure	0	2	1	0	3
	0.0%	3.4%	2.6%	0.0%	1.8%
Total	30	58	39	40	167
	100.0%	100.0%	100.0%	100.0%	100.0%

contact may significantly increase the consultative ability of a wound care specialist, nutritionist, etc.

- For the home visit nurse who works in conjunction with a well-integrated remote monitoring clinician, productivity may be positively impacted via:
  - ▶ Dynamic integration of monitored data and related visit planning.
  - ▶ Effective time management skills.
  - ▶ Reduction of mandated office time.
  - ▶ Integrated use of telecommunications with home visits.
  - ▶ Geographically efficient assignment of cases for integrated visiting staff.
  - ▶ Optimal connectivity (such as “air-cards”) to the EMR.
- Masking potential benefits are common productivity pitfalls:
  - ▶ Mandated frequent “in-office” time for document exchange, scheduling, or gathering supplies.
  - ▶ Less than efficient geographic scheduling.
  - ▶ Non-virtual use of technology, requiring additional drive time.

## What impact has your telehealth program had on the number of on-site visits for patients monitored?



### Findings:

Almost half of respondents (49.7%) reported that telehealth decreased the number of on-site visits for patients monitored, while 36.5% said it had no impact, and 13.8% said it increased on-site visits. This remained fairly consistent across all segmentations.

### Considerations:

Home health is learning how to integrate home telehealth programs into an optimal clinical model. Though the majority of agencies revealed a decrease in the number of visits in telemonitored episodes, almost 14% reported an increase in visit numbers per episode.

What impact has your telehealth program had on the number of on-site visits for patients monitored?

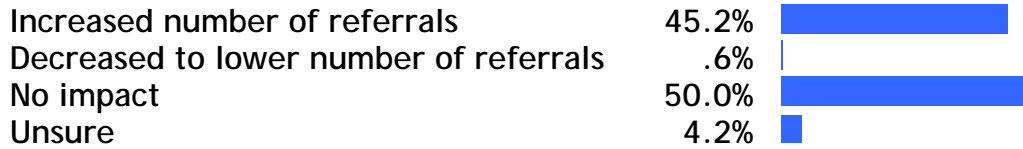
	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
↓ Visits	10	29	23	21	83
	33.3%	50.0%	59.0%	52.5%	49.7%
↑ Visits	10	6	4	3	23
	33.3%	10.3%	10.3%	7.5%	13.8%
No Impact	10	23	12	16	61
	33.3%	39.7%	30.8%	40.0%	36.5%
Total	30	58	39	40	167
	100.0%	100.0%	100.0%	100.0%	100.0%

An evolved model has the ability to “right-adjust” the number of visits toward efficient achievement of clinical objectives.

- The integration of telehealth into the mind of the nurse or therapist is variable. If telehealth lives in a “silo” within the agency, the field clinician and the telehealth clinician may be operating on two different stages. Visits prompted by aberrant telehealth signals may be additive to a pre-conceived plan of treatment if successful integration is not achieved. Rituals of frequency and duration planning are entrenched.

- The clinical data parameters for each patient are unique to his/her condition. Clinical protocols suggest guidelines for care. Protocols may be provided by vendors as well as the Quality Improvement Organization (QIO) for Home Health in their Telehealth Guidelines ([www.medqic.org](http://www.medqic.org)).
- Optimal visit frequency cannot be “canned” by protocol, though it can be guided. Within the dynamic flow of patient information, decisions may be made to withhold otherwise planned visits as they are not indicated given clinical data stability. Substituting telephonic care management achieves:
  - ▶ reinforced behavior modification related to disease management
  - ▶ optimal clinical outcome performance while reducing unnecessary visit cost.

## What impact has the telehealth program had on the number of referrals to your program?



### Findings:

Half of respondents said that their telehealth program had no impact on the number of referrals they received while 45.2% said it increased the number of referrals. Very few (.6%) saw a decrease in referrals. The largest segment to see an increase in referrals was for-profit agencies, with 58.7% reporting an increase.

### Considerations:

Over 45% of agencies report an increase in referrals to their telehealth program as a result of the program.

- Home healthcare is a competitive market, subject to market consolidation. The positioning of the agency in the

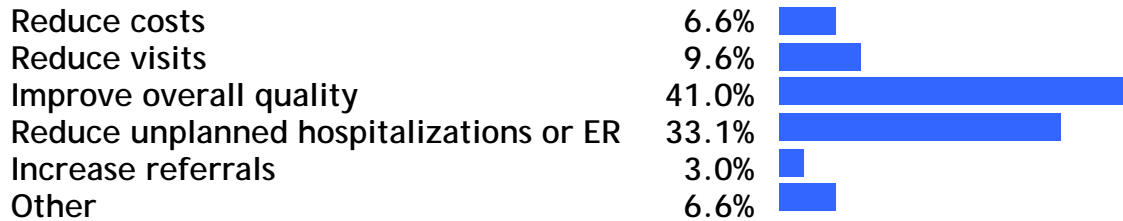
What impact has the telehealth program had on the number of referrals to your program?

	Annual Revenue				Total
	<\$1M	>=\$1M and <\$3M	>=\$3M and <\$6M	>=\$6M	
↑ Referrals	13	28	18	17	76
	43.3%	48.3%	45.0%	42.5%	45.2%
↓ Referrals	0	1	0	0	1
	0.0%	1.7%	0.0%	0.0%	0.6%
No Impact	17	26	20	21	84
	56.7%	44.8%	50.0%	52.5%	50.0%
Unsure	0	3	2	2	7
	0.0%	5.2%	5.0%	5.0%	4.2%
Total	30	58	40	40	168
	100.0%	100.0%	100.0%	100.0%	100.0%

minds of its consumers (including referral sources) is critical to growth and market penetration. Successful home telehealth programs may gain market advantage through the following mechanisms:

- ▶ Achieving improved clinical outcomes.
  - ▶ Achieving cost-savings which may allow reinvestment in further technology advances to practice.
  - ▶ Achieving higher patient satisfaction and staff satisfaction.
  - ▶ Reporting pertinent, trended clinical data to the physician, sometimes in an interoperable digital format with the physicians' electronic health record (optimal, though unfortunately not yet common).
- Home telehealth programs may expand referral bases for traditional and non-traditional home health services.
    - ▶ Specialty practice groups such as cardiologists, pulmonologists, endocrinologists, etc. may be targeted given the ability of the agency to monitor clinical status and deliver meaningful, trended data.
    - ▶ Similarly, managed care organizations, managed Medicare and managed Medicaid programs may seek disease management of certain high risk populations with chronic disease.
    - ▶ Private pay referrals may be gleaned for continued disease management as well as management of the "worried-well."

## What was your most important goal when you first created your telehealth program?



### Findings

The most important goal when creating a telehealth program for 41% of the respondents was to improve overall quality. That was closely followed by reducing unplanned hospitalizations or ER visits, with 33.1%. These figures remained fairly consistent across all segmentations and were clearly the two most important objectives. Rural agencies did have an increase in the number of respondents who chose quality (55.1%) over reduction of unplanned hospitalizations (30.6%).

### Considerations:

An enduring goal of home telehealth has been to improve the quality of care while reducing unplanned hospitalizations or ER visits.

- As home telehealth expands in its use, data continues to support statistically significant

	Annual Revenue				Total
	<\$1M	≥\$1M and <\$3M	≥\$3M and <\$6M	≥\$6M	
↓ Cost	0	7	2	2	11
	0.0%	12.3%	5.1%	4.9%	6.6%
↓ Visits	3	6	3	4	16
	10.3%	10.5%	7.7%	9.8%	9.6%
Improve Qlty	13	21	18	16	68
	44.8%	36.8%	46.2%	39.0%	41.0%
↓ Hosp.	10	17	11	17	55
	34.5%	29.8%	28.2%	41.5%	33.1%
↑ Referrals	0	3	2	0	5
	0.0%	5.3%	5.1%	0.0%	3.0%
Other	3	3	3	2	11
	10.3%	5.3%	7.7%	4.9%	6.6%
Total	29	57	39	41	166
	100.0%	100.0%	100.0%	100.0%	100.0%

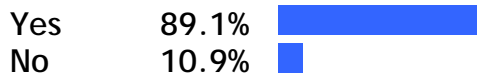
reduction in emergent care and avoidable rehospitalization. Agencies equipped to bring the hospital home in response to anticipated, disease related clinical findings maximize this impact.

- In agencies in which home telehealth is poorly understood yet integrated into practice, emergent care and hospitalization rates may actually *increase*. An example may be seen in the reactive reporting of clinical parameters in the absence of proactive response protocols (such as standing orders for diuretic dose increase for incremental weight increase in the CHF patient).
- The *clinical context of use* of home telehealth should be analyzed to maximize desired goal achievement. Use case scenarios and preparation to meet the associated patient needs are suggested in program development. Integrating the tools to meet clinical expectations into team practice within the agency will optimize success.
- As the variety of home telehealth programs grow, the integration of these programs into overall agency objectives will also expand. Providers of home telehealth should stay tuned for changing opportunity to serve their objectives. Telehealth has many different meanings; the following is an example:
  - ▶ The Navajo Nation recently announced it will use Telemedicine-equipped balloons flying at near space altitudes to assist in the management of diabetes care. (These balloons carry transceivers and create a constellation over the Navajo Nation. They send information back in parachute packages which can be located using GPS.)<sup>11</sup>

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<sup>11</sup> <http://www.telemed.org/vendors/news.asp>

## Given what you know today, would you still invest the time and resources you put in to make your telehealth program a reality?



### Findings:

The simple answer is an overwhelming yes. Given all of the time, resources, frustrations and challenges that agencies went through in starting their program, an overwhelming percentage of agencies (89.1%) reported that regardless of what they endured, they would do it again. And 10.9% reported that they would not. Clearly, for most agencies, the long journey to develop a viable telehealth program was clearly worth it.

### Considerations:

There are three facts worth noting.

First, the number of agencies with a telehealth program is growing.

Today, over 17% of all agencies have a telehealth program. With larger agencies, the percentage is even higher, closer to one-third of all agencies with over \$6 million in annual revenue. Telehealth is clearly becoming more important than ever in home care.

Second, it is clear from the government’s perspective that new and improved technologies are one answer to the health care crisis. In a speech that Secretary of Health and Human Services Mike Leavitt made at Stanford University (May 2005), he stated that better technology can help to rescue a health care system that is

Given what you know today, would you still invest the time and resources you put in to make your telehealth program a reality?

	Legal Status		Total
	For-Profit	Not-For-Profit	
Yes	65	74	139
	86.7%	91.4%	89.1%
No	10	7	17
	13.3%	8.6%	10.9%
Total	75	81	156
	100.0%	100.0%	100.0%

saturated with inefficiency." In home care, telehealth is the leading edge of the new technology.

Third and probably the most compelling statement of all, comes from Val Halamandaris, President and CEO of the National Home and Hospice Care Association and one of the co-sponsors of this study. In the July 2007 issue of *CARING* magazine, Halamandaris stated that, "Home telehealth improves the quality of care, saves lives, reduces trips to the hospital emergency room... and telehealth saves money. In the very near future, I believe telehealth will be required of every home care agency in the United States."

What is clear is that telehealth is growing in numbers, growing in influence and most importantly, growing in its impact on the lives of millions of patients received services in the United States.

## Random Sampling Methodology

**Criteria for Participation.** The overall population of home health agencies to be contacted to participate in the study were defined by the following criteria:

1. Any agency that had complete data on all 10 Home Health Compare measures based on the most recent Home Health Compare data released in June, 2007.
2. Any agency that reported annual revenue based on the most recent Medicare Cost Report data released.

Over five thousand (5,248) home health agencies met this criteria.

**Agency Characteristics Studied.** Within the overall population, representative samples were needed to report valid findings on the following groups:

1. Agencies with annual revenues of:
  - a. More than \$1 million and less than \$3 million
  - b. More than \$3 million and less than \$6 million
  - c. \$6 million or more
2. Rural agencies
3. Urban agencies
4. Hospital-based
5. Freestanding
6. For-profit
7. Not for-profit
8. Government/other
9. Agencies using telehealth technology

**Determining Sample Size.** Because the total population list identified agencies by each of the above characteristics with the exception of telehealth agencies, we were able to use the *Finite Population Correction* formula to determine the representative sample sizes needed. The expected survey completion rate of 33% told us the total number of contacts needed to achieve a representative sample for each segment of the total population. Random number tables were used to draw random samples for each segment of the total population to be studied. The combined randomly selected contact list for all segments totaled over 3,000 agencies (3,100).

***Telehealth agencies.*** The representative sample of telehealth agencies needed for the survey was calculated after the initial round of surveying when the survey results revealed what percentage of respondents used telehealth technology. To insure a representative sample for this group we inflated the random sample of telehealth respondents to the highest percentage supported by the margin of error (+/- 5%) for the survey. The data collection period was extended to achieve the number of completed surveys from telehealth agencies necessary for the representative sample.

***Agencies with annual revenues under \$1 million.*** The randomly selected contact list included 300 agencies with annual revenues under \$1 million. Because use of telehealth technology in this segment is low compared to higher revenue agencies, we did not attempt a representative sample. We determined that 100 completions would provide an acceptable estimate of technology use by these smaller organizations.

***Survey Administration.*** Research Data Design of Portland Oregon made contacts by telephone to each of the potential respondents in the randomly selected sample. Surveys were administered by telephone and were completed over a six week period.

Nearly a thousand (976) agencies or 32% of the random sample contacted completed the survey. Representative sample sizes needed for all segments were met.