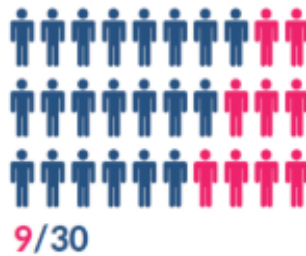
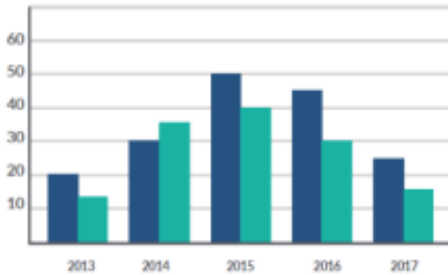
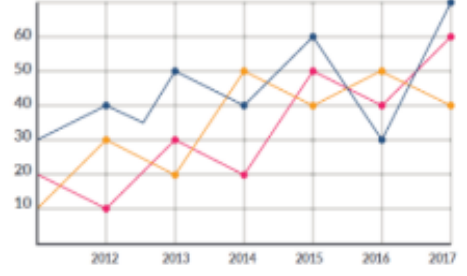
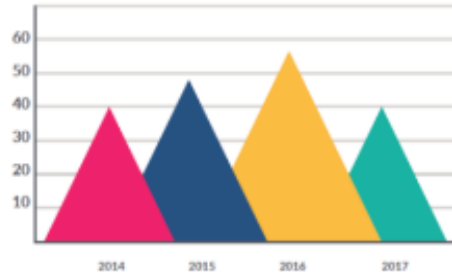


**Ingenium**  
Digital Health  
Advisors



# Measuring Telehealth Success

By Christian Milaster  
Founder & President of Ingenium Digital Health Advisors

# MEASURING TELEHEALTH SUCCESS

by Christian Milaster

Founder & President of Ingenium Digital Health



*Not everything that can be counted counts.  
Not everything that counts can be counted.*

— William Bruce Cameron

As the quote highlights, measuring success can be a tricky business. Not all metrics we *could* collect are meaningful and some relevant aspects of telehealth success are difficult to measure accurately.

In a recent conversation with a client of mine, the CEO of a mental health agency, we discussed his need for good measures for the C-suite to ascertain the health and success of their telehealth services. His goals? To gain more insight into this strategic priority and knowing whether, when, and where to allocate more resources.

As [many of my articles](#) have discussed, there are a multitude of components at play to make a telehealth service work. With telehealth being defined as “delivering care at a distance”, telehealth cannot be simplified to the mere video chat of a clinician with a patient.

Rather “telehealth” is the totality of the workflows and the workplaces, the technologies and the policies, the scheduling, and the billing.

But how do you measure success?

## Types of Performance Measures

We’ll get back to measuring success in a minute, but let’s first briefly cover the basics.

Ultimately we are talking about measuring the performance of a telehealth service. There are a number of types of performance measures, some of which are useful and some are essentially meaningless (i.e., they don’t count - see the quote above).



Here are the four most relevant types of measuring telehealth performance:

- **Input Measures** - resources, e.g., time, staff, money, spent on delivering the service
- **Output Measures** - quantifiable results, e.g., the number of visits or patients seen
- **Quality Measures** - characteristics of the results, e.g. patient or physician satisfaction
- **Outcome Measures** - impact and value generated, e.g., improved health, reduced ED visits.



The first two — Input & Output Measures — are relatively easy to come by and are what is most often measured. How many visits did we have? How many hours did staff spend on seeing patients? How much did we spend on telehealth licensing fees? How much revenue did we generate?

In one example of a telehealth outcome measure, one of the longest-running telehealth programs in the US continues to measure the number of miles saved by patients (and providers) that did not have to drive to their appointment. While quite an impressive metric (I think they are cumulatively well on their way to Mars), it bears by itself very little value. What can be derived from it, though, is

driving time saved (and the resultant personal or communal productivity gain), gallons of gasoline saved, statistical car accidents avoided, etc. Which are the more meaningful outcome measures.

The latter two types of performance measures — *Quality* and *Outcome* — are, however, much more relevant to assessing the success of a telehealth service, though they require a little bit more involvement to collect.

The most useful examples of Telehealth Quality measures include the satisfaction of patients and the satisfaction of providers and staff.

The outcome measures can also be about continuity of care or potentially avoidable utilization, such as an ER visit or an admission. Patient engagement is another outcome measure, as is the percentage of telemedicine visits that were reimbursed.

### How do you measure success?

In the most basic definition in the context of today's discussion, I simply define success as **meeting or exceeding a pre-defined goal**. Without targets, no success (or failure) can be declared.

Is 78 visits good? A Revenue of \$3,853? 3.8 televisits per provider per day? A Net Promoter Score of 47?

We don't know.

We can only measure success when we set ourselves a goal and then see if we can achieve it.

But even setting goals is fraught with challenges.

How do you know what a good goal is? How do you objectively and meaningfully set a goal?

### Action: The Ultimate Value of Measuring Performance

In my opinion there is only one valid business reason to justify the effort that goes into the collection, analysis, and reporting of metrics:

#### Clarity of Action.

What I advise all of my clients as we develop performance dashboards is to establish clarity around the following aspects for each metric:

**Ownership:** who is the executive owner and who is the operational owner of that metric?

**Definition:** how is the metric collected and analyzed? how often? how should it be reported?

**Expectations:** what are the targets for acceptable performance? for success?

**Actions:** what actions will be taken if the metric does not meet the target? what if it exceeds the target? what if it hits the target?

Especially the last distinction of pre-defining the action to be taken is what distinguishes a great organizational culture from a mediocre culture.

If there is no clear pre-defined action, the organization is wasting precious time and resources on the collection and analysis of the data, resulting in data fatigue. Any insights that could be gained from it are lost, since without clear action, not much attention is paid to the data.

Also, once you ask the question of "what actions will we take", so-called "vanity metrics" quickly disappear, because they often don't drive any meaningful action.

To use the example from above, a saving of "1 Million miles driven" is definitely a neat round number, but how would we know that it shouldn't be 2 Million miles? Or that some televisits should have occurred in person and thus led to negative health outcomes?

And where should we set our target and our resultant actions? 20,000 patient miles saved a month? Why not 18,000 or 24,000? And what actions will we take if we don't meet the target - recruit patients who live farther away? Or, worse, ask those who live closer to come in, so they don't count against our quota (i.e., maximizing miles saved per televisit)?

### Key Success Metrics for Telehealth

Now that we laid the groundwork for creating a Telehealth Success Dashboard, let's focus next on developing a framework of metrics to include the most valuable and meaningful input, output, quality, and outcome measures.

Along with the pre-defined targets and actions to accompany each metric, that is how every C-suite should manage their telehealth services to enable the delivery of extraordinary care.

## Measuring Telehealth Success

*If you don't know where you're going,  
you'll end up someplace else.*  
— Yogi Berra

As one of America's finest street philosophers quipped, knowing where you're going is quite important, unless you don't mind ending up where you did not want to be.

Unfortunately, many healthcare leaders are pretty much in the dark when it comes to the performance of their telehealth services. They oftentimes don't know where they are (no metrics), or if they know where they are (by looking at output measures), they often can't tell whether that is good or bad or whether they are where they are supposed to be.

As I laid out above, the most meaningful metrics focus on *quality* and on *outcomes*. But even input or output measures can be useful, if a reasonable goal was set, against which the metric can be compared.

For example, 423 video visits in a day may be good if the goal was to raise the average number of daily visits by 5% compared to last month, where the average was 400.

### A Solid Set of Success Measures

So what is a good, solid set of measures to track the performance of your telehealth services?

<ul style="list-style-type: none"> <li>• # of clinicians trained</li> <li>• # of patients tech-checked</li> <li>• # of equipment deployed</li> <li>• # of workflows defined</li> <li>• etc.</li> </ul>	<ul style="list-style-type: none"> <li>• # of video visits</li> <li>• # of telephonic visits</li> <li>• # of billable visits</li> <li>• saved miles driven</li> <li>• etc.</li> </ul>
<b>INPUT</b>	<b>OUTPUT</b>
<ul style="list-style-type: none"> <li>• physician satisfaction</li> <li>• staff satisfaction</li> <li>• patient NPS</li> <li>• technical quality</li> <li>• etc.</li> </ul>	<ul style="list-style-type: none"> <li>• no-show rate</li> <li>• ER utilization</li> <li>• practice loyalty</li> <li>• care plan engagement</li> <li>• etc.</li> </ul>
<b>QUALITY</b>	<b>OUTCOME</b>

### Satisfaction

First, I recommend starting with the satisfaction of clinicians, staff, and patients in the "Quality" quadrant. The mood and attitude of the clinicians can create a night and day difference in the

experience for the patients and will make or break your telehealth service.



I gauge satisfaction for physicians and staff by simply asking them (at least on a daily basis during their first days) to rate their overall experience with telehealth (on a 5-point [Likert scale](#)). For patients, I focus on the [Net Promoter Score](#), asking them how likely they are to recommend telehealth to others.

### Technology Performance

Another set of metrics that is important to track is to confirm that the technology is working.

Especially in our "work-from-home, direct-to-consumer, bring-your-own-device" world, healthcare organizations do no longer have control over the end-points or connectivity. It is thus critical to ensure that the technology is working for the patients and clinicians.

For patients I ask whether they could clearly hear and see the provider, whereas for clinicians I ask whether they experienced any technical problems (audio, video, etc.).

### Output Measures

A less valuable, though still the most frequently used set are **output measures** which can include the number of video visits and telephonic visits, tracking billability, or saved miles driven.

To make the collection and tracking of these measures valuable, they need to be measured against a target and actions must be pre-defined to deal with deviations from the target.

### Input Measures

**Input measures** mostly assess the organization's readiness for telehealth and oftentimes focus on process measures, such as training, equipment setup, etc.

## Outcome Measures

The most valuable but arguably the hardest set of metrics to come by are the **outcome measures**.

Once telemedicine is working and adoption is rising, numerous population health outcomes can be tracked, such as fewer hospitalizations, better managed health as tracked by key health indicators (such as A1C levels for diabetics), or even significantly fewer no shows to appointments.

### When to declare success

So, when and how do you declare success?

As I mentioned, metrics are most valuable when they are compared against a target, an expectation. When clearly defined and agreed-on objectives are set and subsequently met, you can declare success.

If not, then at least you can declare progress and continue to work on identifying and eliminating the root causes of underperformance.

Ultimately, it is important that the targets for each metric are set and are either aligned with the organization's overall strategic objectives or are set in consensus with those who can impact them.

Only then will success in telehealth feel like success to all.

## Telehealth Creates Strategic Success

*"Sound strategy starts  
with having the right goal."  
— Michael Porter*

Most healthcare organizations have been thrust into the use of Telehealth in response to the Covid-19 crisis and many of them are quietly waiting for things to "go back to normal".

That, however, would be a big mistake, as Telehealth can significantly contribute to organizational strategic success.

### The Times They are A-Changin'

In January 2020, John Halamka, a physician and renowned digital health thought leader joined the Mayo Clinic in Rochester, Minnesota to lead

Mayo's digital transformation. Now, six months into the job, Mayo's 10 year plan to take full advantage of digital transformation has been accelerated to not even one year.

As he said in a recent [Becker's Hospital Review article](#), "We're going to have more demand for telemedicine, telehealth, hospital-level care in the home, wearables and the ability to apply machine learning and artificial intelligence to new data sources for cure plans."

Covid-19 has not only changed the way we work, teach, and socialize. In my assessment, the pandemic is spurring healthcare's most rapid, fastest change ever in the history of medicine.

Neither antiseptic surgery — discovered and refined by Lister and inspired by the findings of Pasteur — nor the use of anticoagulants in cardiology; all of these innovations had many opponents (just like telehealth does now) and it took decades for those changes to find even a 50% adoption rate.

### The Modern Healthcare Consumer

What is different from those past innovations in healthcare is that this time the patient — or rather, the Modern Healthcare Consumer — has a seat at the decision table. For the past 15 years, empowered by Google and spoiled by the convenience of the Smartphone, the modern patient is taking matters in their own hands when it comes to making decisions about their health.

The Modern Healthcare Consumer, being comfortable with technology and striving for convenience just like in all other areas of their lives, is demanding more comfort, more transparency, faster access to the innovations not from 15 years ago but 15 months ago.

Thus to sustain any healthcare delivery organization's business model — whether that's a physician practice, a rural health system, a mental health agency, or an academic medical center — the organization must pay attention to the growing "convenience competition" that is targeting the Modern Healthcare Consumers' eyeballs and wallet.

But this is not an article about staving off the innovative disruptors.



What I am focusing on is something much more substantial, more broad: the ability for Telehealth (“delivering care at a distance”) and other Digital Health Solutions to significantly help any healthcare organization to achieve all of its strategic objectives, to enable the sustainability of its business.

### A Blueprint for Healthcare Strategy

Many healthcare organizations, in one way or another, these days are using a variation on the Studer Group’s categories for healthcare strategy:

HEALTHCARE STRATEGY FRAMEWORK	
Service	Quality
People	Finance
Growth	Community

Provide an increasingly great service, improve quality, find and keep great people, improve the finances, achieve growth in volume and be a good citizen in their communities.

What is interesting to realize is how much telehealth and telemedicine services can help organizations move the needle into the right direction across all of those six areas as outlined in this table.

Telehealth Creates Strategic Success		
Service	Quality	People
Improved Convenience “One-stop shopping” Additional Service Lines	Timelier Access Improved Care Transitions Improved Continuity of Care	Attract & Retain Talent Practice on Top of License Work Schedule Flexibility
Finance	Growth	Community
Increased Revenue Reduced Cost (e.g., ReAdx) Reduced Penalties	Expanded Geographic Reach Competitive Advantage Increased Pt. Retention	Reduced Travel Chronic Dx Management Health Education

### Better service, better patient retention

As illustrated by Dr. Halamka’s quote, the demand for telehealth and digital health services is only going to increase, it will not go back to pre-Covid-19 volumes.

And why should it? At least 80% of outpatient visits, if not more, do not require a hands-on examination, at least not by a physician.

A 12-minute visit with a physician typically takes patients at least 6 times as much time in making it to the appointment, checking in, waiting and

then the whole thing in reverse. A visit “from the comfort of your home” cuts out as much as 80% of that predominantly unproductive time.

Just recently my annual visit with my primary care provider, via telemedicine, took me 37 minutes (including 12 minutes of wait time that I used productively on email). I talked to his nurse and the scheduler on the phone and to the physician via video, successfully covering the five topics I wanted to address.

In another example a colleague of mine had a 3-month frozen shoulder injury follow up appointment via telemedicine that only took 3 minutes and maybe, if even, 10 minutes of her time.

With experiences like these, why would anyone want to go back to in-person care for every visit?

Our lives are so busy, even during Covid-19, that we often put off medical care until it becomes urgent. While going to the doctor in some cases is never “fun”, the additional dread of the logistics surrounding a traditional visit causes many people to delay care.

Through Telehealth many smaller healthcare organizations can also facilitate access to specialty services, providing patients with a “one-stop shopping’ experience. In addition, telehealth opens the door for additional, virtual service lines, e.g., genetic counseling or specialized PT.

### More Engagement, better Outcomes

When care is quickly accessible, when it is convenient, numerous studies have shown a significant reduction in high cost utilization (such as ED or hospital admissions), and with that the quality of care improves measurably.

Many health outcomes are influenced by the degree to which a patient is engaged in their care. Easy, direct access to the physician and staff via a highly relatable communication mechanism such as video chat has also shown to increase patients’ participation in their care plan.

Telehealth not only offers opportunities for timelier access to care (before exacerbation), but also allows for better care transitions and with geographic distance no longer being a barrier, providing opportunities for improving the continuity of care.

## Finances and Growth

On the revenue and profit side, with reimbursements for telehealth being for the most part on par with in-person care, a number of telehealth services can lead to an increase in revenue. This could be through new service lines provided by a remotely located specialist or through arrangements with other regional networks.

When quality metrics are tied to rewards and penalties (such as for 30-day readmission), small, targeted investments into telemedicine can achieve significant savings.

Furthermore, when the majority of outpatient visits can be conducted at a distance, the definition of a geographic area that a healthcare organization can serve can be significantly expanded. And with growing competition (even from the patients' insurers offering telemedicine services to their members), investing in telehealth is a good strategy to avoid revenue erosion.

Finally, with the cost of new patient acquisition typically being high, especially in markets where patients have choices, offering a convenient, modern way to receive the care when they need it where they want it can go a long way towards patient loyalty and retention.

## People and Community

But telehealth does not only have a positive impact on patients or on the bottom line. The people side of an organizations' strategy can benefit just as well from telehealth. Many providers and staff have realized for a few years now that experience and good skills in all things digital health are critical for their future care.

As many have discovered across all industries,

distance work also allows for a much greater flexibility, further increasing job satisfaction when trying to align work and family schedules. Investing in Telehealth thus can help to attract and retain talent.

The launch of a new telehealth services also presents a unique opportunity to define how healthcare could be delivered most optimally, so that everyone can practice "on top of their license". That redefinition alone can significantly increase physician and staff satisfaction which in turn leads to better patient outcomes.

Last, but certainly not least, telehealth services empower any healthcare organization to truly be a supporter of the surrounding communities, especially those with severely limited access to care or transportation (often both). The internet offers opportunities for health education and innovations. And advances in monitoring technology now allow for an easy-to-deploy solution to support people with chronic diseases, even in the absence of a local clinic or home nursing services.

## To Sustainability and Beyond

Telehealth is not merely a video chat software to give to physicians and say "here, talk to your patients, it's safer". Telehealth has long been regarded by many experts primarily as a clinical tool – a means to deliver care to patients where they want and need it.

Telehealth, when applied correctly, is a strong tool in the tool chest of healthcare organizations' leadership. It is a tool that leadership can use to move the needles of organizational strategy into the right direction across all strategic objectives

## ABOUT CHRISTIAN MILASTER

Christian Milaster is an expert in optimizing the delivery of care through Digital Health & Telehealth.

Christian is the founder and president of Ingenium Digital Health Consulting and the Executive Director of Healthcare Shapers USA. Born, raised and educated in Germany as an Engineer, Christian has worked at IBM Global Services and studied healthcare delivery for 12 years at the Mayo Clinic in Rochester, Minnesota. Since 2012 he has been a strategy, design, and implementation advisor at the intersection of Care Delivery and Technology to numerous health systems, behavioral health agencies, community health organizations, urgent care organizations, etc.



IngeniumDigitalHealth.com | (657) INGENIUM (464-3648)  
[christian.milaster@ingeniumadvisors.net](mailto:christian.milaster@ingeniumadvisors.net)

