Goals

• Understand importance of assessment
• Differentiate between assessment & scientific experiments
• Appreciate variety of approaches & topics
• Know where to look for resources
• Set assessment priorities
Program Assessment

- Assess needs
- Improve practice
- Increase use & satisfaction
- Monitor progress
- Select equipment, tools etc.
- Fill personnel requirements
- Monitor costs & benefits

Variety readiness &/or needs assessment templates available

ATP version available upon request

This is just page 1 of 23 page in-depth survey!
Assessment

• Scientific studies are needed
• Not everyone can/should do them
• In many cases good review literature will provide the answer
• Web sites, resource centers etc. can often provide information based on sound investigation
• Explore 1st & collaborate when possible

Research Example

• Teledermatology SF = In-person?
  308 dermatology cases from IP
  Digital photos 832 x 608, 24-bit
  3 dermatologists (intra & inter)
• 83% diagnostic concordance
• 62% very definite or definite
• Image sharp 83% good/excellent
• Image color 93% good/excellent
SMART – Planning Assessment Goals

S = Specific
   What will you achieve? How will you know when done?
M = Measurable
   How will you know when it meets expectations?
A = Attainable &/or Assignable
   Is it realistic? Who will do it?
R = Relevant
   Does it match your mission? Does it match your strategy?
T = Time-Bound
   How long will it take? Too much, too little, enough?

What are Your Goals?

• Patient-centered outcomes
   Clinical markers, progress markers, etc.
• Provider-centered outcomes
   Diagnostic accuracy, efficacy, efficiency, etc.
What are Your Goals?

• Business-centered outcomes
  Reimbursement, sustainability, etc.
• Technical outcomes
  Network expansion, faster, reliability, etc.
• Program-centered outcomes
  Participants, contacts, etc.

What to Find Out

• What populations will be served?
• Which communities are most in need?
• Which communities can you best reach & impact?
• Who are the users of services?
• What is needed & used?
• What are the barriers?
Types of Questions to Ask

- What drives your re-admission rates?
- What specialists/specialties missing?
- What are your/patient travel & referral patterns?
- What types of patients referring out & to whom?

How to Find Out

- Analyze demographics, health status, patterns of health care use
- Use secondary sources, literature
- Use national & local data bases
- Ask stakeholders
- Work with community-leaders, users
- Use questionnaires & focus groups
Evaluation Strategy

- **Indicators**: Realistic, concrete activities, products or other services measured by straightforward processes (frequency, amount of time or surveys). Steps required to achieve *Performance Targets & Outcomes*.

Evaluation Strategy

- **Performance Targets**: Concrete goals. Time limited (i.e., will achieve a 25% increase in provider contact during quarter 1) & based on individual *Indicator*. 
Evaluation Strategy

• **Outcomes:** Assessments of performance targets – met successfully or not. Based on statistical analysis of **Indicators & Performance Targets.**

<table>
<thead>
<tr>
<th>Item No.</th>
<th>Item</th>
<th>Definition</th>
<th>Measurement</th>
<th>Considerations</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1.1</td>
<td>Patient satisfaction</td>
<td>Patients' subjective satisfaction and experience with the TMH service provided. The perception of the patient's satisfaction during the TMH visit with the availability of technology, patient-provider communication, and performance of nursing care via this approach. Does the patient believe that the service met her/his health needs? Would patient refer others to this service?</td>
<td>There may be overlap with other constructs such as “satisfaction with Usability of Technology.” Satisfaction does not necessarily imply or promise competence. It could be compared to the care in the hospital or other environment. Use of validated measures of TMH satisfaction because measures exist. Measures satisfaction with experience as well as with technology.</td>
<td>Table 1. Lexicon of Assessment and Outcome Measures for Telenutritional Health (TMH)</td>
</tr>
<tr>
<td>2.2.1</td>
<td>Provider satisfaction</td>
<td>The extent to which the provider values the health condition or clinical diagnosis of patients.</td>
<td>The following survey may serve as an option for measuring patient satisfaction with the health care received.</td>
<td>The top 10 barriers to using TMH must be considered. Individually, include both referring PCPs and TMH units.</td>
</tr>
<tr>
<td>2.3.1</td>
<td>Coordination of care</td>
<td>Coordination measurement consists of both the number of medical documents and the number of different participants involved in the care plan (e.g., consultant-primary care provider, consultant, patient, provider, etc.) and the type of health interaction (nursing and medical).</td>
<td>The nature of the coordination, external relationships with other health care providers, and the nature of the coordination can all impact care coordination.</td>
<td>Table 1. Lexicon of Assessment and Outcome Measures for Telenutritional Health (TMH)</td>
</tr>
<tr>
<td>2.3.3</td>
<td>Integration of care</td>
<td>Integration of care is the effective communication of multiple components within a health system in order to decrease redundancy, delay, and cost.</td>
<td>Measurement of the integration of care includes the type of the healthcare system, the nature of the coordination, and the nature of the care coordination.</td>
<td>The nature of the coordination, external relationship with other health care providers, and the nature of the care coordination can all impact care coordination.</td>
</tr>
<tr>
<td>2.4.1</td>
<td>Usability</td>
<td>The ease (performance, comfort, fit, usefulness) of patients to communicate digitally with their providers. Includes technology availability, utilization, costs, and satisfaction with the TMH service.</td>
<td>Measurement should include provider satisfaction with technology availability, utilization, costs, and satisfaction.</td>
<td>Unless overall “satisfaction” is measured as a composite of the interaction between provider technology, there may be some limitations to this measure. Use of validated measures.</td>
</tr>
<tr>
<td>2.4.3</td>
<td>Report</td>
<td>Self-reported level of direct and indirect experiences with TMH.</td>
<td>Reports and subjective ratings of comfort.</td>
<td>The perceptions of the patient about the technology should also be included.</td>
</tr>
</tbody>
</table>
2.1.4 Regimen
Preconception, often negative, association with illness, illness, pregnancy, therapy, technique, etc., that may interfere with the
provision or acceptance of care.

Informed consent is the condition of support between the patient(s) and the
professional(s).

geoengineering, etc., differences and experiences. Try to link cli-
nical outcomes which could be evaluated separately.

2.1.1 Monitoring activities
Assessment of an individual's or organization's abilities to
change and adopt TMI services. This is different
from preparations, which is an assessment of individual
and organizational ability to adopt TMI services.

include changes for medications and treatment, structural self-
efficacy (confidence), mass theoretical
model-based measures (type of change, proven strategies for change, structural self-efficacy).

Defining the risks and benefits of each stage. Relationship
between individual and institutional readiness, and
success. How generalized are individual and institutional
monitoring? Self-efficacy can be measured, but necessary.

2.2.1 No shows
A patient or relative who does not attend service, or is
more than 15 minutes late.

Presents of no shows as compared to a
flattened site-specific comprehensive in-
patient group. No shows defined as 15
minutes late or more to appointment. No
shows need to be identified as either
clinically relevant or a systems issue
(delivering care, not in the office, etc.).

Deceased status of no shows, i.e., was at fault of transportation,
lost ability to maintain schedule, etc. They show up late
and have to be rescheduled, to be discussed with
management. Ensure the reason for the no shows e.g., technology
failed or not used, the use of technology (vs. trained)
make it easier to keep the appointment, etc.

2.2.2 Accuracy of assessment
How well the quality of TMI assess the reliability
and validity of the assessment when compared with the
indicators of behavioral health care
outcomes for the system an
organization.

comparison of standard measures of improvement (reliability, validity) of TMI vs.

Proxy measures to track provider conduct with reliability of
assessments through tracking utilization of hours and counts
comparing TMI with in-person services as percent one.

2.2.3 Symptoms cont-
unous
Change in identified clinical
symptom over time.

Use of measures of symptom change that are appropriate and psychometrically
sound (validity, reliability data published in the literature). Need to be appropriate
for the population being treated.

Here is the information documented as it is meaningful.
include measures used, cutoff criteria, assessment, which are they are comparing outcome to.
Effect size of change over time.
Symptom outcomes are part of a larger array of out-
come metrics that need to be considered. Consider adding

2.3.1 Completion of treatment
Degree to which approp-
ate measures, milestones and comple-
tion of treatment plans were
accomplished within the prescribed
time frames.

Satisfaction with treatment outcomes and symptom resolution as
a cohort as well as other outcomes such as Quality of Life,
appearance and function, satisfaction with care or psychosocial outcomes (mental health, social function).

Third party pays for both Global Assessment of Func-
tioning to achieve progress and completion, although this
will evolve with the outcomes to DIIDIC criteria.

2.3.2 Quality of Care
Quality of care represents the
process of delivering services and
includes both the tech-
nical and interpersonal aspects of
treatment. Technical as-
pects include assessment with treatment
liaisons, fidelity to evidence-based
treatments, and system performance
measures (e.g., HHS23). In-
volvement quality includes
patient rapport, therapeutic
efficacy, and cultural compas-
sion.

Quality is defined as the process rather than the outcome of
care. Beyond clinical outcomes are measured using other
variables and because high-quality care does not necessarily
lead to good outcomes. Quality of TMI services should be measured against benchmarks rather than the quality of in-
person services which is often subjective. When TMI ser-
dives are compared to in-person services, it will critical to
choose a similar clinical setting and patient population.

2.3.3 Treatment Utiliza-
tion
Use of TMI services com-
pared with all other health
services relative to specific
disease processes.

Measurements on number of TMI and
non-TMI visits within a health care sys-
tem to include data on visit duration, frequency, and problem addressed.

Measurements on symptom resolution (i.e., improvement, system tracked [i.e., disease,
outcome, cumulative change in referrals and utilized] of TMI vs. non-
TMI. Utilization should be correlated with symptom reduction of specific dis-
tress processes.

Comparison of digital contacts (phone, e-mail, Web) and its impact on service utilization as well as elimination
of time spent in physical locations. Remote healthcare systems (systematic data
on digital contacts). Collect data on both internal utilization
within a system but as possible external service utilization
from outside agencies and providers. As possible framing of
improvements of TMI services collect common data on pres-
and post implementation service utilization data.

2.3.4 Number of Services
Degree of access to additional services which are derived
from enrollment in TMI.

2.3.5 Number of Serv-
ices
Degree of access to additional
safety services offered (e.g., medica-
tion management, social services, etc.,
radio, media, etc., group therapy, frequency, in the use of clinical care options and
mental health services.

Used for pre-implementation, ROI for program expansion, quality, patient provider satisfaction.

2.3.6 Number of Services
(also referred as)
The individual level goal for the TMI encounter that is

Types of services, complexity of services, time spent with patients, number of
Coding accuracy, Coding manage and follow up to ensure coding is being done correctly, i.e., no matter or data coding.
| 2.3.3 Wait Times | Wait time is a temporal dimension of access that represents the slider between whom the patient needs to receive services and when they can actually receive services. | Operational time, time to next available appointment, referral scheduling, and time the patient actually presents for care. For TMH requiring a referral, wait time could be measured as the difference in the referral date and the date the patient was seen. May want to measure wait time separately to see if the preferred provider versus any provider. It is important to realize that improving other dimensions of access (e.g., lowering costs or streamlining TMH services) could result in increasing wait times due to decreased demand. Health systems should measure wait times to all classes (not just TMH classes) to determine how resources could best be utilized to maximize variability in wait times across classes. Other important measures of temporal access include wait time in clinic and convenience of office hours. |
| 2.3.4 Length of Stay | How much time the patient spends in primary care. This could include time spent with the provider. | Average total clinical encounter time, average total administrative time (e.g., setup time, out-of-office contact such as email, web, phone, letters). Needs to be discussed. Patient, staff, and system input required. Variations in services may necessitate with frequency of appointments. Differences in healthcare utilization cause fluctuations in overall access. |
| 2.3.5 Distance to Service | Geographical separation or functional barriers between patient and provider. | Distance, time, route, time to appointment. This includes structural barriers, workflow. |
| 2.3.6 Likelihood to access care | Likelihood to use TMH. | Measurement should include the following concepts: familiarity (first use), acceptability (cultural and technical), acceptability (cultural and technical), acceptability (cultural and technical). When possible this should include baseline comparison against both available and unavailable treatment as usual (e.g., no-person trial) likely to be used through self-report questionnaire. |
| 2.3.8 Cultural access | Access to healthcare services that align with cultural expectations. | The degree to which an individual perceives the mode of delivery and related processes to align with cultural beliefs and expectations. This should include cultural understanding of technology and expectations of interpersonal communication. It should also consider how technology may be meaningful to cultural expectations, e.g., providing access to some cultures or providers for communications with a provider outside of one's cultural group. |
| 4.1 Economic evaluation | Economic evaluation that accounts for non-equivalent economic models. | In general, these definitions do not apply to most of the cost structures. This may be inappropriate as costs are incurred and perceived differently. There are several costs factors that were identified to be important to measure objectively. Until final definitions are set, such cost factor should be operation scaled and reported. Consideration should also be given to what is meant or similar cost of care as usual (provider time). |

| 2.4.2 Value proposition | Comparison of clinical and other health service outcomes by overall resource allocation. | Standardized and reported taxonomy of resources allocated and outcomes measured. Resource allocation can help to identify cost outcomes. There is an consensus that the best determinants for economic evaluation is TMH. |
| 2.4.3 Travel direct | Direct cost associated with provider and/ or patient travel to care site. | All direct costs should be identified, operationalized, and reported for comparison. |
| 2.4.4 Travel indirect | Indirect costs associated with provider and/ or patient travel to care site. | All indirect costs should be identified, operationalized, and reported for comparison. |
| 2.4.5 Technology direct | Direct patient and provider costs associated with the technology utilized to deliver healthcare services. | Indirect costs are often calculated as a result of technology acquisition, specialized licenses, and administrative support. |
| 2.4.6 Technology indirect | Indirect costs associated with technology utilized to deliver healthcare services. | Indirect costs are often calculated as a result of technology acquisition, specialized licenses, and administrative support. |
| 2.4.7 Public vs. private | Payor Perspective. | Whether a project, program, or system aligns with public or private funding. This is an extreme measure for a program perspective. Additional resources should be allocated based on the financial perspective of the project. |
| 2.4.9 Cost avoidance | Current/ historical costs compared to the time to specific improvement/ innovation. | These are currently non-industry standards for care avoidance measures. Cost avoidance should be given increasing attention such as in hospitalization, town, and other costs. These should be operationalized and reported as possible. |
| 2.4.9 Mixed obligations | Indirect Cost. Mixed obligations. | Should be measured as part of overall indirect costs. Where possible a baseline assessment should be conducted against care as usual. As an example, resource for ascertainment is that TMH impacts indirect costs build, thus requiring a comparison. |
| 2.4.10 External | External costs. | Various resources associated with the provision of adequate access to TMH services. Studies on external network should include direct benefits to support resources and broad benefits to societal infrastructure. When conducting research a positive or negative directional ascertainment should be identified to a project. |

| 2.4.1 Personnel (admin, | Personnel costs associated with the provision of TMH services. | Personnel costs associated with the provision of TMH services. |
| 2.4.2 Supplies | Direct cost of ancillary supplies required for TMH care. | Direct cost of ancillary supplies required for TMH care. |
Utilize & Report Results

- Reassess goals & objectives
- Identify strategies
- Identify unintended outcomes
- Analyze lessons learned
- Establish overall outcomes
- Develop written report
- Disseminate results
Resources

• NLM Evaluation guides
  https://nnlm.gov/neo/training/guides
• Agency Healthcare Research & Quality
• Telehealth Resource Centers Resources
  https://www.telehealthresourcecenter.org/
• Society for Education & the Advancement of Research in Connected Health
  https://searchsociety.org/

Resources

• American Telemedicine Association Practice Guidelines
  - Variety of clinical specialties + overall core guidelines
  - Human factors in TH quick guides (eye contact & lighting)
  - Metrics for assessing TH

Contact me for copies
Telehealth Resource Centers
We Are Here For You!

www.southwesttrc.org
Conclusions

• Evaluation is essential to TM
• Can approach from variety of ways
• Builds confidence in TM practice
• Builds confidence in users
• Opens new doors & new uses of TM

Thank you!

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