

ARIZONA
TELEMEDICINE
PROGRAM



Telemedicine ROI – Is It Worth It?

Elizabeth A. Krupinski, PhD

Associate Director of Evaluation ATP

Co-Director SWTRC

**Professor & Vice Chair for Research Department of Radiology
& Imaging Sciences Emory University**

YES!

But may need to think of ROI in different ways



Developing TH (Business) Plan

Define goals

**Review existing
conditions**

**Determine if/why/how
goals attainable**

**Plan for reaching
goals**

Determining basics

SWOT analysis

ID TH Goals

Readiness assessment

What services

TH Conditions

Market analysis

Assess regulatory

If/how/why attain

Develop Strategy

Integration

Reaching goals

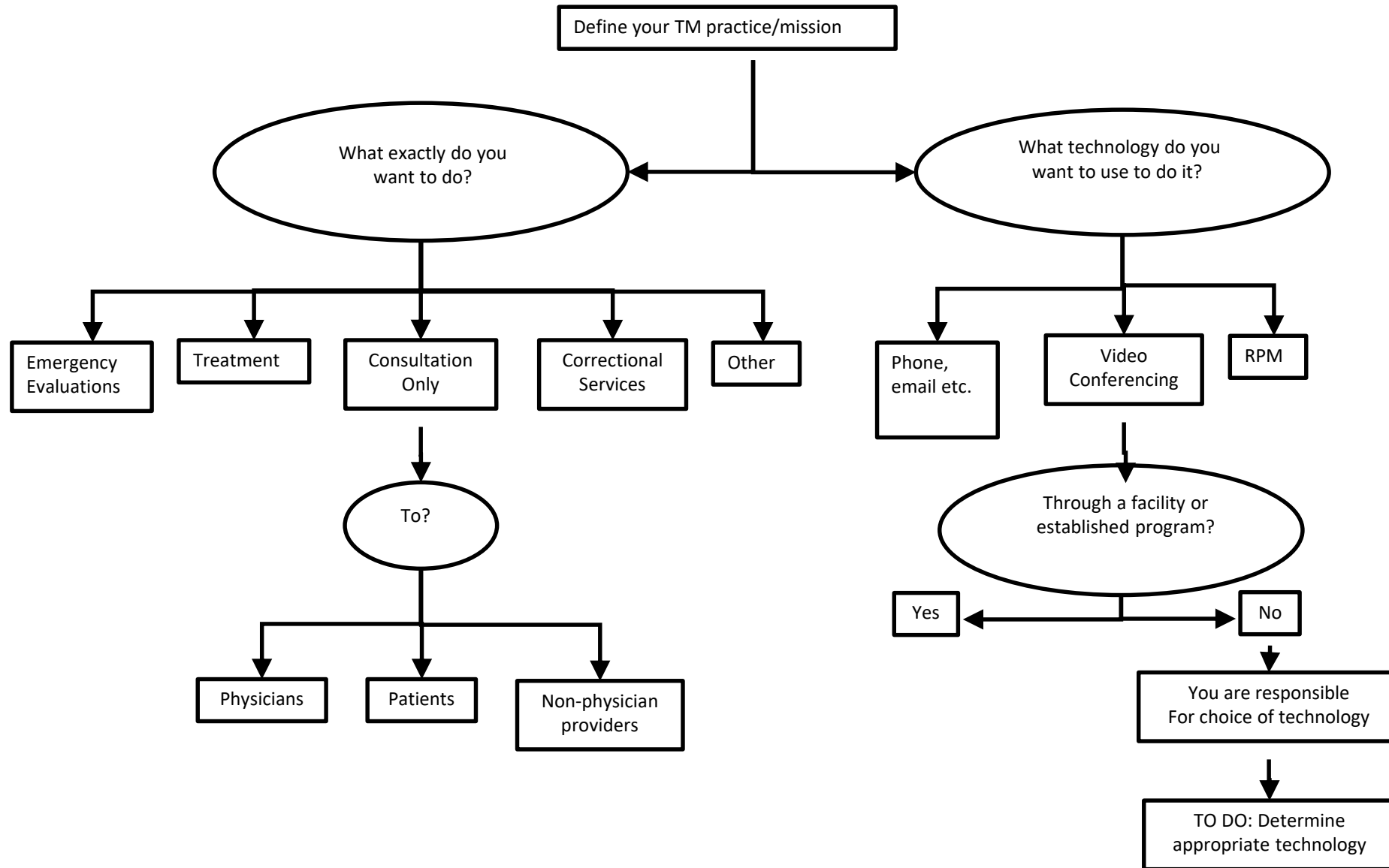
Cost-Benefit analysis

Business plan

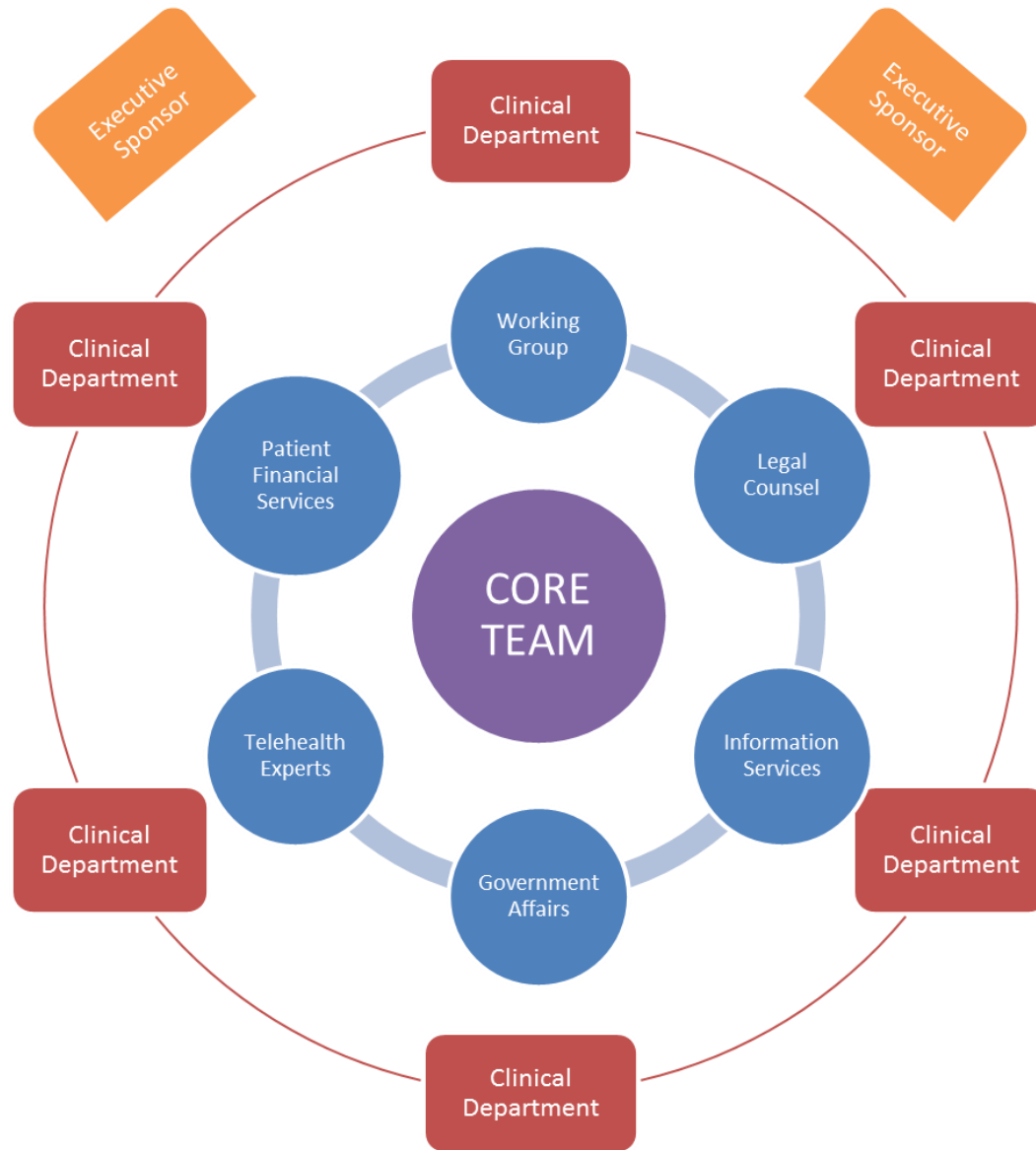
What are your goals?

- Patient satisfaction
- Patient costs
- Reduce no shows
- Extend clinical reach
- Reduce (re)admissions
- Reduce physician costs
- Patient education
- Improve outcomes
- Physician satisfaction
- Access to specialty care
- Avoid transfers



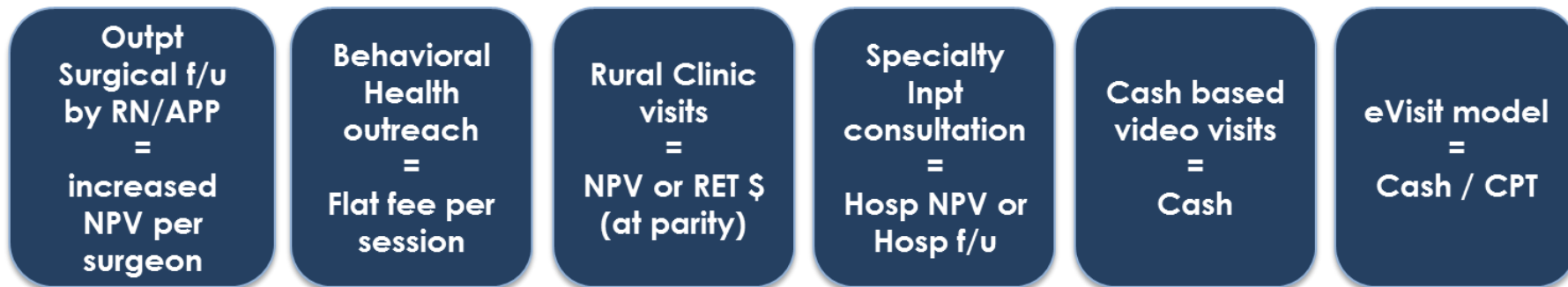


OPERATING MODEL



TELEMEDICINE BUSINESS CASE

- Telemedicine has a 3-5 year average ramp to ROI, with early years heavy on cost and focused on infrastructure development and integration.
- Successful growth requires strategic prioritization *and* operational commitment.
- Telemedicine technology needs to be seamless – we have not yet invested in technology to be successful.
- Revenue / business case will vary with use cases that we promote – see below for examples:



SEPTEMBER 2019

A Framework for Evaluating the Return on Investment of Telehealth

Jacqueline Marks, Manager

Jared Augenstein, Senior Manager

Anthony Brown, Consultant

Sol Lee, Summer Analyst

Manatt Health Strategies, LLC

Table 1. ROI Considerations for Different Types of Providers

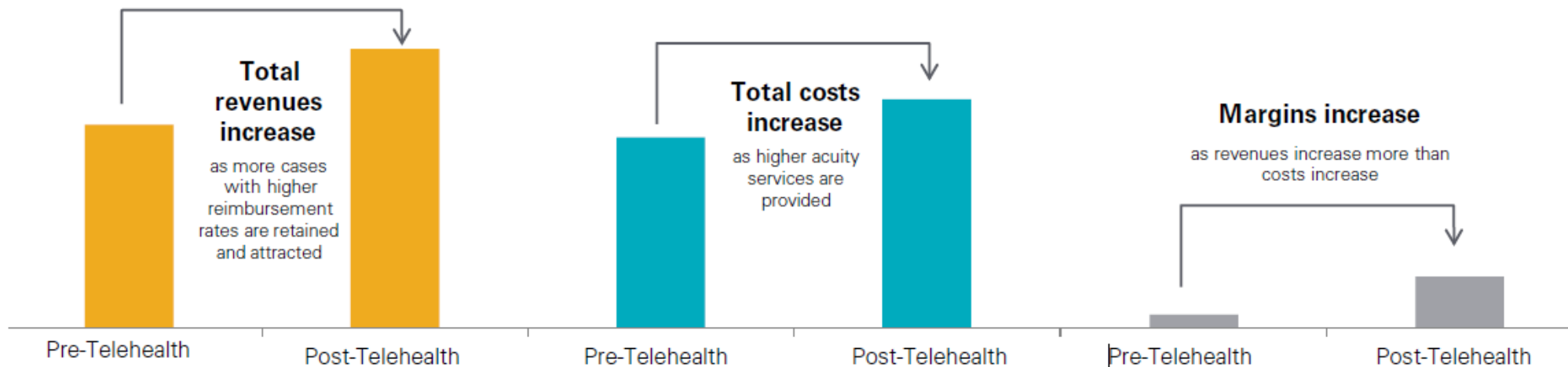
Institution Type	Potential Considerations
<p>Academic medical centers</p>	<ul style="list-style-type: none"> • Can we extend specialty and subspecialty expertise beyond our four walls via telehealth? • Can we employ telehealth tools to improve care coordination, patient engagement and ongoing health management? • How do we combine telehealth with advanced analytics and artificial intelligence (AI) to offer person-alized medical services? • Can we offer a telehealth platform and services to hospitals, providers and patients outside our system?
<p>Integrated health systems</p>	<ul style="list-style-type: none"> • Can we extend our telehealth platform across the hospitals, clinics and other sites in our system as a means of providing the right care in the right place at the right time? • Can we utilize telehealth services to reduce per-member health expenditures? • Can we integrate virtual care across the continuum of healthcare delivery to increase capacity and grow membership? • Can we leverage AI-driven triage tools to navigate patients to the most appropriate site or method of care?
<p>Community hospitals</p>	<ul style="list-style-type: none"> • Can we offer additional specialty services and reduce avoidable transfers by partnering with local tertiary or quaternary hospitals for virtual consults? • Can we improve provider satisfaction and reduce burnout and turnover by providing virtual backup coverage in the ICU or ED? • Can we increase patient retention by offering direct-to-consumer telehealth services for low-acuity conditions?
<p>Primary care clinics</p>	<ul style="list-style-type: none"> • Can we extend primary and preventive care to remote and vulnerable populations through telehealth services? • Can we better connect our patients to behavioral health and specialty care through virtual visits while they are in rural clinics? • Can we improve outcomes and reduce costs through remote monitoring of patients with chronic conditions?

Table 2. Considerations and Guiding Questions for Evaluating Telehealth ROI

Institution Type	Potential Considerations
Patient acuity mix	<ul style="list-style-type: none"> • Will the telehealth program impact the average patient acuity level? • How will revenue and costs change as the patient acuity levels shift?
Cost savings	<ul style="list-style-type: none"> • Will the telehealth program result in cost savings (e.g., redistribution of services within a system, delivery of care in a lower-cost setting)?
New-patient volume	<ul style="list-style-type: none"> • Will the telehealth program result in increased patient volume?
Patient retention	<ul style="list-style-type: none"> • Will the program result in higher patient retention rates?
Reimbursement or contract revenue	<ul style="list-style-type: none"> • Are these telehealth services reimbursable under: <ul style="list-style-type: none"> – State Medicaid program and Medicaid managed care organizations? – Fee-for-service Medicare and Medicare Advantage? – Private payers? • Will the telehealth program bring in other forms of direct revenue for the institution (e.g., payment from a distant site for a teleconsult)?
Technology	<ul style="list-style-type: none"> • What are the hardware and software costs to implement the program?
Program and program management	<ul style="list-style-type: none"> • What are the programmatic costs to design, implement and operate the service?
Staffing	<ul style="list-style-type: none"> • What are the staffing requirements to provide the program? • Will there be associated training costs? • Can we reduce costs by leveraging mid-level providers to provide the service? • Does this program automate existing tasks, thereby reducing professional costs?

Figure 1. Financial Impact for Telecardiology Program at Rural Community Hospital

Revenue, Cost, and Margin Levers



Revenues increase as transfers decline and more patients are retained at the Hospital



Revenues increase from new patient inflow as ability to provide for cardiac services improves



Revenues increase as the Hospital treats—and is reimbursed for—higher acuity patients



Costs increase as the Hospital pays for telehealth service costs



Costs increase to care for newly attracted and retained higher acuity patients



Margins increase as more revenue-generating cases are retained instead of being referred out of the system

Table 3. Rationale and Estimated Financial Impact on Various ROI Drivers

ROI Driver	Rationale	Estimated Impact
Patient acuity mix	Patient acuity increases as the Rural Community Hospital retains more high-acuity patients with telecardiology support from the local AMC. Treatment costs rise as acuity levels increase, but not at the same rate as reimbursement.	Average revenue of a cardiology case increases from \$16,000 to \$16,100 as reimbursement for higher-acuity patients increases faster than costs.
Cost savings	The program reduces transfers and helps the Hospital retain patients, but it will not necessarily help lower the cost of care provided or make the care model more efficient.	Limited.
New-patient volume	The Hospital sees a slight increase in cardiology patients as more patients are directed to the Hospital for cardiology care as a result of its connection to the AMC via the telecardiology program.	The Hospital sees an additional 100 new patients per year.
Patient retention	The Hospital retains more cardiology patients as it receives telecardiology support from the local AMC to manage and treat cardiology patients who would have otherwise been transferred to another facility.	The Hospital retains 200 additional cardiology patients per year.
Reimbursement	Medicare ⁱ and Virginia's State Medicaid Program ⁱⁱ reimburse telecardiology services for medical evaluation at the same rate as the comparable in-person service. In addition, Virginia upholds parity laws that guarantee similar reimbursement levels from private insurers that cover telehealth services. Within the telecardiology model, the local AMC providing the telecardiology consult is eligible for reimbursement. As the distant site in this scenario, the Hospital is eligible to receive a facility fee for serving as the originating site; facility fees vary by payer.	<i>Facility fees are typically nominal (about \$20 per consult) and therefore not included in the ROI estimate.</i>
Technology	The Hospital needs to purchase at least one telehealth cart and may need to invest in EHR enhancements in order to connect with the local AMC.	The Hospital invests \$10,000 in upfront technology costs to launch the telecardiology program.
Program and program management	As a member or affiliate of the local AMC's telecardiology program, the Hospital pays an annual program fee and/or per-consult fee.	The Hospital pays the local AMC \$100,000 per year for telecardiology consults.
Staffing	There are no anticipated major clinician or staff costs for the Hospital within this program. Staff training is included in annual program fees paid to the local AMC.	Limited.

Table 4. Summary of Estimated Financial Impact

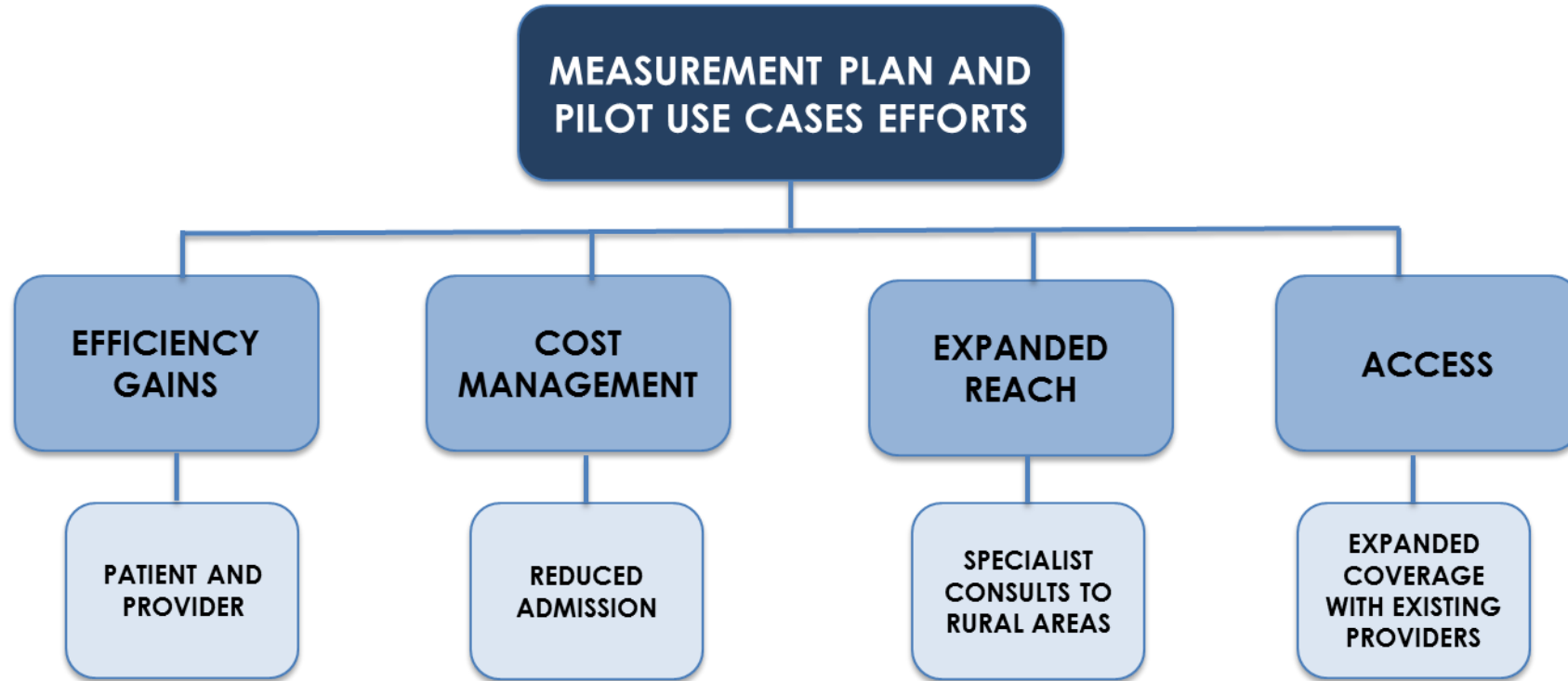
	Current State	Future State With Telecardiology
Revenue Inputs		
Annual number of patients	5,000	5,300 = 5,000 patients + 100 new patients + 200 retained patients
Total revenue	\$80,000,000 = 5,000 patients * (\$16,000 average revenue per case)	\$85,330,000 = 5,300 patients * (\$16,100 average revenue per case)
Cost Inputs		
Total care costs for patients	\$60,000,000 = 5,000 patients * (\$12,000 average cost per case)	\$63,600,000 = 5,300 patients * (\$12,000 average cost per case)
Technology costs	\$0	\$10,000
Program costs	\$0	\$100,000
Staffing costs	\$0	\$0
Budget Summary		
Total direct margin = total revenue less total care costs	\$20,000,000	\$21,730,000
Total technology, program and staffing costs	\$0	\$110,000
Total estimated impact	\$20,000,000	\$21,620,000
Difference between current and future state		\$1,620,000

The estimated positive financial impact of implementing the telecardiology program at the Hospital totals approximately \$1.6 million per year. These results are largely the result of increases in volume and acuity, rather than new reimbursement revenue for the telehealth service.

Developing Your Budget

- 1. Benchmarked with multiple nationally renowned programs (UPMC, UMMC, UVA, Jefferson, CCF, Dartmouth Hitchcock)**
- 2. Internal core central infrastructural office would partner with section clinicians and administration**
- 3. Central office should have Medical Director, Program Administrator, Project managers to support use cases, IS Network Engineer**
- 4. Central office FTE count dependent on number of use cases**
- 5. Revenues and expenses stay in section**
- 6. Core team tracks finances and other metrics with section**
- 7. Start with use cases that make sense in world A (e.g. post op follow up visits, fixed remuneration per session, increase surgical cull rate, etc.)**

TELEHEALTH BUSINESS CASE



OUTCOME MEASURES OF SUCCESS

STRATEGY AREA	POSSIBLE PROGRAM/CASE EXAMPLE
Cost Reduction	<ul style="list-style-type: none">• Current/future cost avoidance• E.g. eSitter for patients who require on-going monitoring
Revenue Generation	<ul style="list-style-type: none">• Consumer-driven/cash payment access to healthcare team• E.g. eVisit messaging to care team, cash based visits
Access (Internal/External)	<ul style="list-style-type: none">• Decrease in delay between clinical need and receipt of services• E.g. New clinical access to rural locations
Provider Shortage Relief	<ul style="list-style-type: none">• Internal and external extension of specialists• E.g. Physician to physician consultations for complex medical cases
Coordination/Integration of Care	<ul style="list-style-type: none">• Cross-system communication and assimilation of resources to improve outcomes• E.g. Allied health care providers utilized across system (i.e. social workers, dietitians, etc.)
Operational Flow	<ul style="list-style-type: none">• Using technology to treat patients in a more efficient manner• E.g. Video triage and treatment in ED for low acuity cases
Quality & Safety	<ul style="list-style-type: none">• Using technology to improve quality and safety while under care• E.g. In-patient and post-discharge medication reconciliation and management

Projected Use Cases

#	Center	Section/ Division	Use Case	Clinical Champion	Administrator	Revenue Model	Expense Coverage
9	CV	Cardiology	Case consultations - complex coronary disease			Referral generator	Existing FTE
10	CV	Cardiology	Outpatient f/u visits			CPT per service	FTE allotment per session
11	*	Dermatology	Outpatient f/u visits			Cash	FTE allotment per session
12	*	Endocrinology	Diabetes remote patient monitoring			Pending	Pending
13	*	Renal	Hospital consultations w Sanderling Renal Services			\$ per consultation / Med Dir fee	Call duties
14	Surgical Services	General Surgery	Post operative f/u visits			Part of global CPT	Within clinic session
15	Surgical Services	Plastic Surgery	Post operative f/u visits			Part of global CPT	Within clinic session
16	*	TravelWell	New and f/u patient consultations			Cash	Within clinic session

Resource Grid

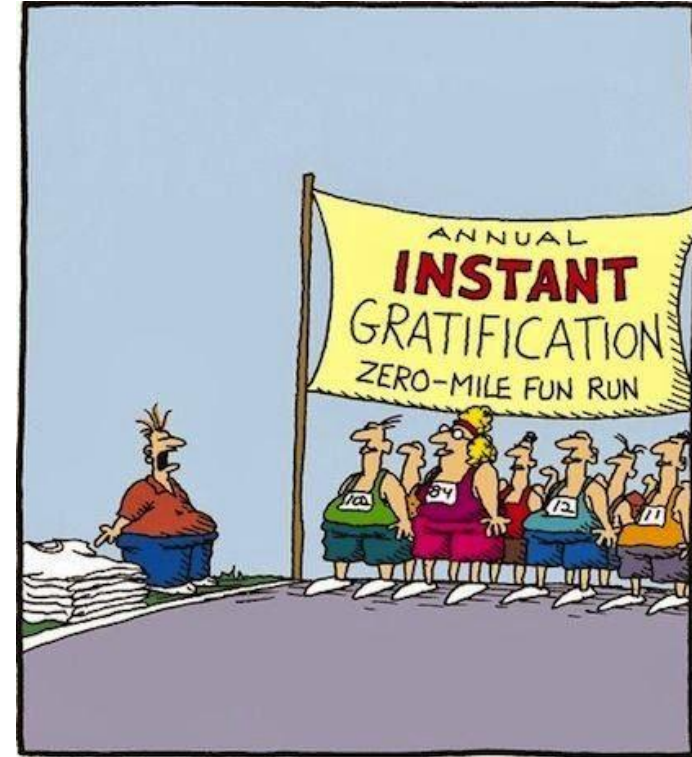
Use Cases (VPC Instances)	10	20	30	>30
Medical Director FTE	0.2	0.3	0.4	0.5
Program Administrator FTE	0.25	0.5	0.75	1
Project Manager FTE	1.0	2.0	3.0	4.0
IS Network Engineer FTE	1.0	1.0	2.0	2.0
Subtotal	2.45	3.8	6.15	7.5
Additional FTE required to continue operations outside of VPC program budget				
Corp Dir Project Mgmt Office	0.1	0.2	0.25	0.3
Assoc Gen Counsel FTE	0.1	0.2	0.3	0.4
Patient Access Director FTE	0.2	0.3	0.4	0.5
Consultant (EK)	0.025	0.05	0.075	0.1
Subtotal	0.425	0.75	1.025	1.3
Total FTE requirement	2.875	4.55	7.175	8.8

Revenue	\$-	Difficult to project in year 1; accrues to sections
Expenses		
Salaries	\$400,000	see breakout
Benefits	\$83,750	
Equipment	\$30,000	depends on use cases
Supplies	\$7,000	depends on use cases
Per Diem Travel	\$8,000	Site visits to established telehealth programs
Memberships	\$2,000	ATA, NATC
Community relations	\$2,000	Marketing costs
Purchased Services	\$21,000	remote patient monitoring - diabetes
Total	\$553,750	

15-20 Use Cases	FTE	Salary	Benefits	Total
Medical Director FTE	0.30	\$125,000	\$8,125	\$133,125
Program Administrator FTE	1.0	\$100,000	\$27,500	\$127,500
Project Manager FTE	1.0	\$75,000	\$20,625	\$95,625
IS Network Engineer FTE	1.0	\$100,000	\$27,500	\$127,500
Subtotal	3.33	\$400,000	\$83,750	\$483,750

Summary

- Define your mission & goals
- Carry out due diligence – assess your landscape
- Develop case scenarios
 - operations, personnel, budget
- Reach out – other programs, TRCs
- Remember – it's a process – ROI takes time!



“Runners to your mark. Get set. Go! ... OK, come get your T-shirts.”

Thank you!

- For more information
- swtrc@telemedicine.arizona.edu
- Call toll free 1-877-535-6166
- ekrupin@emory.edu

