

January 29, 2019

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balladhealth.org

M. Norman Oliver, MD, MA
Acting Commissioner Virginia Department of Health
109 Governor Street
Richmond, VA 23219

Re: Final Plan Submissions

Via: FedEx & Email

Dear Commissioner Oliver:

Please find enclosed Ballad Health's submission of the following plans:

- Rural Services (updated from August 24, 2018 submission)
- Health Information Exchange (HIE)
- Health Research and Graduate Medical Education (HR/GME)

We have incorporated feedback from various prior discussions with the Department's Staff into the revised Rural Health Plan for the State of Tennessee. Please accept this as the final submission. This submission does contain updated exhibits that were previously submitted, including several with future business plans that contain sensitive information. Those will be provided in a separate attachment. We respectfully request that your offices treat the exhibits that are marked as "Confidential" as proprietary information under Tenn. Code Ann. 68-11-1310, Virginia Code Section 15.2-5384.1.C.1, and Virginia's Rules and Regulations Governing Cooperative Agreements (12VAC5-221-40.D).

On November 29, 2018, Ballad Health submitted drafts of the HIE and HR/GME plans as required by the Virginia Department of Health's January 12, 2018 letter regarding "Final Cooperative Agreement Measures." These drafts for the Commonwealth were also provided to the State of Tennessee at the same time. The enclosed HIE and HR/GME plans attached hereto are specific to the requirements of the Cooperative Agreement, Conditions 8, 24, and 25 and they incorporate the comments we received from the Commonwealth and the State of Tennessee.

We would be happy to meet with you in the coming weeks to review these plans and answer any questions you may have. Thank you and we look forward to discussions regarding these plans.

Sincerely,



Alan Levine

Cc via email: Lisa Piercey, MD, Commissioner, Tennessee Department of Health
Jeff Ockerman, Director, Division of Health Planning
Janet M. Kleinfelter, Deputy Attorney General
Erik Bodin, Director, Office of Licensure and Certification
Allyson K. Tysinger, Senior Assistant Attorney General/Chief
Larry Fitzgerald, COPA Monitor
Tim Belisle, General Counsel Ballad Health
Gary Miller, Senior Vice President Ballad Health

Final Rural Health Services Plan for the Commonwealth of Virginia

January 29, 2019



It's your story. We're listening.

Introduction

- Final versions of the following plans were requested by the Commonwealth of Virginia Department of Health in a January 12, 2018 letter regarding “Final Cooperative Agreement Measures.” These plans are due in final form by July 31, 2018.
 - Behavioral Health Services Plan
 - Children’s Health Services Plan
 - Rural Health Services Plan
 - Population Health Plan
- The content of these Plans is consistent with requirements as outlines in the Cooperative Agreement and represent those actions to be taken by Ballad Health deemed by the Commonwealth to constitute public benefit.

Spending Requirements

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total:
Expanded Access to HealthCare Services	Behavioral Health Services	\$ 1,000,000	\$ 4,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 85,000,000
	Children's Services	\$ 1,000,000	\$ 2,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 27,000,000
	Rural Health Services	\$ 1,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 28,000,000
Health Research and Graduate Medical Education		\$ 3,000,000	\$ 5,000,000	\$ 7,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 85,000,000
Population Health Improvement		\$ 1,000,000	\$ 2,000,000	\$ 5,000,000	\$ 7,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 75,000,000
Region-wide Health Information Exchange		\$ 1,000,000	\$ 1,000,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 8,000,000
Total:		\$ 8,000,000	\$ 17,000,000	\$ 28,750,000	\$ 33,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 308,000,000

- The Commonwealth requested information regarding the “methodology for allocation of funds between Tennessee and Virginia” for the Behavioral, Children’s and Rural Health Services Plans
 - Investments and expenditures specific and unique to Virginia geographies or Virginia residents will be allocated 100% as a “Virginia Expenditure”
 - For investments and expenditures that are not specific or unique to Virginia (i.e., system-level investments, infrastructure investments, investment in specialists serving multiple geographies, etc.), the following allocation methodologies will be considered in order to determine what portion of the investment or expenditure is identified as a “Virginia Expenditure”
 - Demographic allocation – Virginia population served (or total Virginia service area population) as a percentage of the total population served (or total service area population served)
 - Utilization allocation – Utilization of defined service (or services) by Virginia residents as a percentage of the total utilization
 - Ad Hoc/Judgment – When neither of the allocation methodologies described above are applicable, Ballard will devise an appropriate ad hoc methodology, or use professional judgment to allocate funding

Important Dates

Plans Due in First Six Months (July 31, 2018)

- Behavioral Health Services*
- Children's Health Services*
- Rural Health Services*
- Population Health*
- Capital
- Quality Improvement (VA)

Plans Due in First Twelve Months (January 31, 2019)

- HIE
- Health Research/Graduate Medical Education

* *Consistent with the The Commonwealth of Virginia Department of Health request, Ballad previously submitted final versions of these Plans prior to the July 31, 2018 deadline. This document presents the updated versions of those plans, incorporating feedback received from the Commonwealth on August 30, 2018, following review of the final submissions. Additional modifications have been made to the Rural Health Plan. Please accept this as the final version.*

Process for Plan Development

Initiate

- Engaged Resources
- Named Executive Steering Team

Plan

- Gathered Internal and External Stakeholder Input
- Developed Initial Plans/Prioritize

Review

- Socialized Plans to Internal and External Stakeholders
- Submitted Draft Plans to Virginia Department of Health (VDH)
- Reviewed Draft Plans with VDH

Finalize

- Incorporated VDH and Stakeholder Feedback
- Finalized Investment Schedules
- Submitted Final Plans to VDH
- Make final revisions with State Input during 30 day state review and 30 day Ballad response period
- Obtain Ballad Health Board Approval

Process and Participation for Plan Development

In developing these plans, Ballad has referenced previously developed plans and analyses and solicited extensive stakeholder input including:

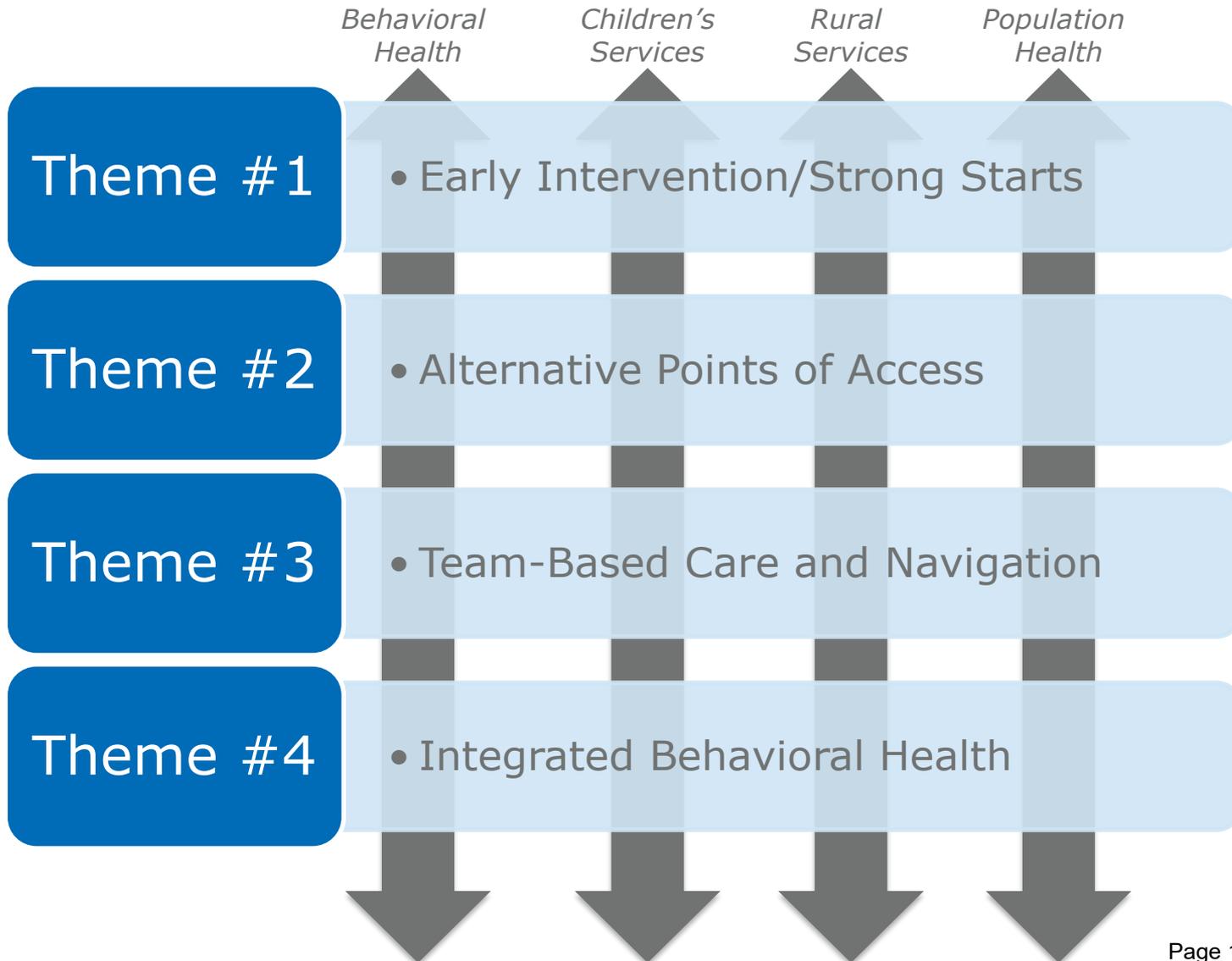
- Reviewing the following documents and plans:
 - Authority's Blueprint for Health Improvement & Health-Enabled Prosperity
 - Virginia Plan for Well-Being
 - Key Priorities for Improving Health in Northeast Tennessee and Southwest Virginia: A Comprehensive Community Report ¹
 - Legacy WHS and MSHA Community Health Needs Assessments
- Conducting approximately individual 150 interviews
- Holding approximately 40 meetings with external groups

¹ Report published by the East Tennessee State University College of Public Health

Process and Participation for Plan Development (continued)

- Convening the Population Health Clinical Committee
- Presenting the plan overview to the Southwest Virginia Health Authority and a number of Ballad community boards in Virginia and in an open meeting in Abingdon
- Convening the Accountable Care Community Steering Committee
 - Healthy Kingsport and United Way SWVA were selected through an RFP process to co-manage this effort for both TN and VA
 - Obtained cross-state participation in initial meeting with discussion of metrics with special focus on those most amendable to community intervention
 - Conducting bi-weekly calls with lead organizations
- Submitted draft plans to the State for review and feedback on June 30, 2018. Additionally, Ballad representatives and representatives from the Commonwealth met on July 10, 2018 to review and discuss the draft plans. Feedback from that meeting and subsequent communications have been incorporated into the final document submitted July 31, 2018. The Commonwealth provided feedback to those plans in a letter to Ballad, dated August 30, 2018. Feedback from that letter is included in these updated plans.

Strategic Themes Across All Plans



Strategic Themes Across All Plans (continued)

1. Early intervention and strong starts

- Efforts will be designed around the concept of primary, secondary and tertiary prevention, with a special population focus on children.
- Example: Prevent cervical cancer through HPV vaccinations AND detect in early stages through effective screening.

2. Alternative Points of Access

- Preventive and acute services must be easily accessible by the population and designed with their preferences and limitations in mind.
- Example: Mobile blood pressure and diabetes screening co-located at food assistance delivery sites.

Strategic Themes Across All Plans (continued)

3. Team Based Care and Navigation

- Care teams will be designed around the needs of the whole person and include perspectives and skills from pharmacists, social workers, community health workers, navigators and case managers.
- Example: Embed behavioral health navigators in primary care practices to link patients with necessary behavioral health services at Ballad Health and our CSB partners.

4. Integrated Behavioral Health

- A behavioral health perspective will be designed into all care processes and systems.
- Example: Perform Screening, Brief Intervention and Referral to Treatment on ED and Inpatient admits to identify behavioral health risk and initiate treatment in patients regardless of their presenting problem.

Table of Contents for Each Plan

- Plan Overview
 - VA Cooperative Agreement Requirements
 - Key Metrics Assessed
 - Key Strategies
 - Crosswalk to Conditions
 - Investment Plan
- Strategic Approach
- Implementation Roadmap

Rural Health Services Plan for the Commonwealth of Virginia

Rural Health Services Plan

1. Plan Overview

Plan Overview

VA Cooperative Agreement Rural Health Services Plan Requirements

VA Cooperative Agreement Requirement

1. Effectively address and detail how meaningful and measurable improvements and enhancement in the Virginia service area to same-day access for primary care services, access to specialty care within five days, access to maternal and prenatal health services, access to pediatric and pediatric specialty services, access to “essential services” as defined in condition 27, preventive and restorative dental services, corrective vision services, and access to emergency services will be achieved
2. Detail how active and effective collaboration with local businesses, school divisions, and industry on community development necessary to attract and retain providers in the Virginia service area will be achieved
3. Have an active and effective focus on managing the burden of disease and breaking the cycle of disease
4. Detail how the New Health System will actively and effectively consult with the Southwest Area Health Education Center and regional educational institutions on the development of workforce development strategies
5. Detail how effective development of health professions education needed to help the New Health System’s workforce and the regional pipeline of allied health professionals adapt to new opportunities created as the New Health System evolves and develops will be achieved
6. Include a methodology for allocation of funds between Virginia and Tennessee. The plan shall include milestones and outcome metrics consistent with those approved by the Commissioner after receipt of the recommendations from the Technical Advisory Panel

Sources: Virginia Cooperative Agreement, Section 33; Virginia Cooperative Agreement, Amendment 1, January 12, 2018.

Plan Overview

Rural Health Services Plan Key Metrics

- B8: Specialist Recruitment and Retention
- B9: Personal Care Provider
- B10: Preventable Hospitalizations - Medicare
- B11: Preventable Hospitalizations - Adults
- B12: Screening – Breast Cancer
- B13: Screening – Cervical Cancer
- B14: Screening – Colorectal Cancer
- B15: Screening – Diabetes
- B16: Screening – Hypertension
- B17: Asthma ED Visits – Age 0-4
- B18: Asthma ED Visits – Age 5-14
- B19: Prenatal Care in the First Trimester
- B22: Antidepressant Medication Management – Effective Acute Phase Treatment
- B23: Antidepressant Medication Management – Effective Continuation Phase Treatment
- B29: Screening For Lung Cancer

ED = emergency department

Plan Overview

Strategies for the 3-Year Rural Health Services Plan

- Strategy #1:** Expand Access to Primary Care Practices Through Additions of Primary Care Physicians and Mid-Levels to Practices in Counties of Greatest Need
- Strategy #2:** Recruitment of Physician Specialists to Meet Rural Access Needs
- Strategy #3:** Implement Team-Based Care Models to Support Primary Care Providers, Beginning with Pilots in High Need Counties
- Strategy #4:** Develop and Deploy Virtual Care Services
- Strategy #5:** Coordinate Preventive Health Care Services

Plan Overview

Strategies Related to VA Cooperative Agreement Rural Health Services Plan Requirements

VA Cooperative Agreement Requirement	1. Additions of Primary Care Physicians and Mid-Levels	2: Recruitment of Physician Specialists	3:Team-Based Care Models	4: Deploy Virtual Care Services	5: Coordinate Preventive Services
1.a. Same-day access for primary care services	Y		Y	Y	
1.b. Access to specialty care within five days		Y	Y	Y	
1.c. Access to maternal and prenatal health services	Y	Y	Y	Y	Y
1.d. Access to pediatric and pediatric specialty services	Y		Y	Y	
1.e. Preventive and restorative dental services					Y
1.f. Corrective vision services					Y
1.g. Access to emergency services				Y	
2. Collaboration with local organization on community development to attract and retain providers	See Health Research and GME Plan				
3. Managing the burden of disease and breaking the cycle of disease	Y	Y	Y	Y	Y
4. Consult with the SAHEC and regional educational institutions on the development of workforce development strategies	See Health Research and GME Plan				
5. Development of health professions education	See Health Research and GME Plan				

Plan Overview

Rural Health Services Estimated Investment Summary

Rural Health Services Plan	Year 1		Year 2		Year 3		Year 1-3 Total	
	Low	High	Low	High	Low	High	Low	High
#1 - Expand Access to PCPs - Add Primary Care Physicians and Mid-levels	\$660,000		\$1,440,000		\$1,720,000		\$3,820,000	
#3 - Team-Based Care Models to Support PCPs	\$150,000		\$630,000		\$1,000,000		\$1,780,000	
#4 - Deploy Virtual Care Services	\$140,000		\$660,000		\$230,000		\$1,030,000	
#5 - Coordinate Preventive Care	\$50,000		\$50,000		\$50,000		\$150,000	
Sub-Total	\$1,000,000		\$2,780,000		\$3,000,000		\$6,780,000	
#2 - Recruitment of Physician Specialists	\$0	\$420,000	\$220,000	\$1,230,000	\$0	\$1,640,000	\$220,000	\$3,290,000
Total	\$1,000,000	\$1,420,000	\$3,000,000	\$4,010,000	\$3,000,000	\$4,640,000	\$7,000,000	\$10,070,000
CA-Mandated Minimum Expenditures	\$1,000,000		\$3,000,000		\$3,000,000		\$7,000,000	
Potential Funding Needed in Excess of Minimum Spending Requirements	\$0	\$420,000	\$0	\$1,010,000	\$0	\$1,640,000	\$0	\$3,070,000

Note: This does not account for an additional spend over the 3 year time frame in TN for primary care and specialists providers of up to \$6.86M.

Specialist recruiting (see Strategy #2) expenditures are presented as a range, due the following uncertainties, which can have significant impacts on the actual annual investment expenditures:

- Timing – Due to the challenges of recruiting specialists to rural environments, the amount of time necessary to successfully recruit a specialist can vary dramatically.
- Economic considerations – Ballard has a robust compliance function that monitors matters pertaining to physician compensation and other economic relationships between the system and its medical staff. However, the challenges of recruiting to a rural environment often results in rapidly changing economic demands among potential recruits.
- Possible partnership opportunities – Ballard supports private practitioner employment, and will always work with private practices to provide recruitment assistance when appropriate. Such recruitment assistance often results in economic investments by Ballard less than the investments required to employ a specialist.



Rural Health Services Plan

2. Strategic Approach

Strategic Approach

Strategy #1: Add Primary Care Physicians and Mid-Level Providers to Practices in Counties of Greatest Need

Why?

- Adding primary care physicians (“PCP”s) and mid-level providers (Physician Assistants and Nurse Practitioners) is important to expanding access in rural areas.
- Staffing practices with mid-level practitioners allows existing physicians to work at the top of their license and reduce overall cost of care.

How?

- Continuously evaluate needs of the Ballad service area. To identify the areas of highest need, Ballad will monitor and maintain the following information and research:
 - Monitoring and maintaining of provider needs assessment results
 - Evaluation of community needs assessments
 - Evaluate appointment availability and target counties with low appointment availability and limited PCP or urgent care infrastructure relative to the county population.
 - Within high-needs counties, evaluate specific practices that have a high proportion of attributed lives, space capacity, and support staff to prioritize order of deployment.
- Hire at least one additional primary care physician in 2019 in Russell County, and one Pediatrician in Wise County during 2020. Continue evaluation of primary care needs in rural counties and respond with updated recruitment plans as needed.
- Develop recruitment plan and hire two mid-levels in 2019, one in 2020, and two in 2021. When adding mid-level practitioners, ensure they have availability to support walk-in appointments, and in select practices, expand evening/ weekend hours, thereby more effectively supporting current physicians on staff.

Strategic Approach

Strategy #1: Add Primary Care Physicians and Mid-Level Providers to Practices in Counties of Greatest Need

Metrics Addressed

- Additional primary care resources help to address all of the access metrics listed previously in the Plan Overview – Key Metrics slide and increase percentage of the rural population with same day primary care access.

Potential Barriers to Success

- The implementation plan is dependent on the recruitment of primary care physicians and mid-level providers to rural communities. To the extent that these professionals can not be recruited in the timeframe indicated, certain aspects of the plan may be delayed.

Potential Mitigation Tactics

- Identify opportunities to increase access with e-visits
- Increase provider capacity through process reengineering and improved scheduling of expanded care teams
- Provide recruiting assistance to community providers

Strategic Approach

Strategy #2: Recruit Physician Specialists to Meet Rural Access Needs

Why?

- A core group of local and regional specialists is essential to creating a system of local access in rural communities and minimizing the need for residents to travel for care. Specialists are particularly difficult to recruit to rural areas, resulting in the need to (1) commit significant focus and resources to attract and retain them, and (2) thoughtfully develop regional approaches to specialty access for rural residents.

How?

- Review and revise system-wide recruitment plan for rural counties, taking into consideration community-based need, rural hospital medical staff needs, and growing telehealth capabilities. It is important to note that there is often insufficient population in rural counties to support specialists so they are often recruited to the tertiary hubs, located in urban areas. Specialists recruited to Holston Valley Medical Center and Bristol Regional Medical Center will still treat a number of patients from rural counties and that has been accounted for in this list of priorities.
- In order to allocate the expense associated with these urban-based specialists to the rural populations they serve, Ballad calculated an allocation ratio for each sub-specialty as follows:
 - Historical (FY2017) Clinic Visits from Patients originating from a rural zip code/Total Clinic Visits
 - If information was incomplete or not available for a specific sub-specialty, Ballad applied the average of all computed ratios
 - Ballad then applied these ratios to the total practice expense for each sub-specialty assumed in the recruitment plan to determine what portion of the practice expenses would be representative of resources dedicated to rural residents
 - The ratios used to allocate sub-specialty total practice expenses to rural residents ranged from 47% to 52%, with the average being 49% (for those instances, as described above) when the average was utilized to allocate costs. For reference, the rural population in Ballad's service area, as a % of total population in the service area, is 61.3%.

Strategic Approach

Strategy #2: Recruit Physician Specialists to Meet Rural Access Needs

How?

- Execute on Ballad recruitment plan, based on priorities by specialty and location. Access to specialty care provided through:
 - Locating specialty practice full-time in rural communities
 - Providing rotating specialty clinics in rural communities
 - Providing rural residents with telehealth access to specialists located in urban areas
 - Providing preferred/reserved appointment scheduling for rural residents traveling to urban areas for specialist care
- Coordinate with Ballad’s ongoing Health Research and GME Plan workgroup to leverage opportunities for recruitment and development from regional medical schools and networks.
- Review needs and progress annually and update as necessary.

Current Rural Specialist Priorities

Specialty	Practice Location (County)
Cardiology	Wise, VA
Orthopedics	Wise, VA
Pulmonary	Wise, VA
Psychiatry	Russell, VA
Psychiatry NP	Russell, VA
Nephrology	Washington, VA
CardioThoracic	Sullivan, TN
Neurosurgery	Sullivan, TN
General Surgery, Colorectal	Sullivan, TN

Strategic Approach

Strategy #2: Recruit Physician Specialists to Meet Rural Access Needs

Metrics Addressed

- B8: Specialist Recruitment and Retention
- B10: Preventable Hospitalizations - Medicare
- B11: Preventable Hospitalizations – Adults
- This strategy will also increase the percentage of the rural population with access to specialty care within five days

Potential Barriers to Success

- The implementation plan is dependent on the recruitment of specialist providers. To the extent that these professionals can not be recruited in the timeframe indicated, certain aspects of the plan may be delayed.

Potential Mitigation Tactics

- Identify opportunities to increase access with e-visits
- Increase provider capacity through process reengineering
- Provide recruiting assistance to community providers

Strategic Approach

Strategy #3: Develop and Deploy Team-based Care Models

Why

- PCPs in Ballad Health's service area often lack resources to address challenging populations such as patients with chronic diseases or behavioral health needs. Team-based care models offer screening and care coordination services which improve outcomes and overall healthcare costs.

How

- Evaluate existing Ballad and private practitioner care coordination resources to ensure effective resourcing within each region, and maximum impact for patients.
- Evaluate and determine appropriate team-based model for rural populations and implement one pilot each year, beginning in 2019.
- Focus on team-based care models that address chronic care needs outside of behavioral health (note: Integration of primary care and behavioral health addressed in Behavioral Health Plan).
- Recruit positions to support regional programs - outlining a schedule of rotation for the teams. Teams to include:
 - Care Coordinator
 - Community Health Worker
 - Health Coach
 - Pharmacist
- Leverage virtual health as available to extend access to specialty care within the system. (see Strategy #4 below).

Strategic Approach

Strategy #3: Develop and Deploy Team-based Care Models

Metrics Addressed

- Additional team-based care models help to address all of the access metrics listed previously in the Plan Overview – Key Metrics slide.

Potential Barriers to Success

- The implementation plan is dependent on the recruitment and training of health care professionals, including relatively new functions like community health workers. To the extent that these professionals can not be recruited in the timeframe indicated, certain aspects of the plan may be delayed.

Potential Mitigation Tactics

- Incorporate training programs as an initiative in the Health Research and Graduate Medical Education plan

Strategic Approach

Strategy #4: Develop and Deploy Virtual Care Services

Why?

- **Infrastructure:** Ballad Health’s existing virtual programs lack common platforms or workflows and are disconnected from enterprise-level goals for access. A core infrastructure is needed to support virtual care services, including the following priorities:
 - **Tele-Stroke:** With five existing sites among Ballad Health hospitals, tele-stroke provides a strategic opportunity to scale existing virtual health initiatives with relatively limited investment. Early success here will build traction and facilitate the development of the virtual health infrastructure within the system.
 - **Behavioral Health:** The region is experiencing significant unmet need for behavioral services. However, a significant percentage of patients are diagnosed with lower acuity conditions that do not require face-to-face visits. Shifting lower acuity patients to virtual settings will reinforce broader strategies to extend the capacity of highly skilled BH providers (e.g., psychiatrists). Behavioral telehealth offers virtual face-to-face counseling and improves consistency of coordination with primary care providers.
 - **Pediatric Emergency and Specialty Services:** As discussed in the Children’s Health Services Plan, Ballad is committed to providing telehealth services to Niswonger Children’s Hospital Emergency Room Physicians and Specialists to all Ballad hospital emergency departments during 2019. The availability of telehealth resources in the Ballad hospitals will also be evaluated for use as outpatient access points for specialist consults.

Strategic Approach

Strategy #4: Develop and Deploy Virtual Care Services

How?

- Create a centralized virtual health team (leadership and support staff) that is resourced to support deployment of virtual health strategies and assess gaps. Deploy and/or realign necessary infrastructure, including staff and technology, to support the envisioned virtual care network.
- Add telehealth equipment to ensure all Ballad hospitals have at least one comprehensive cart for high-acuity episodes (e.g., tele-stroke) and one secondary cart for lower-acuity episodes (e.g., consults).
- Expand tele-stroke services to a broader geography, providing enhanced access to this critical service.
- Expand behavioral health telemedicine services by adding 10 outpatient sites for low acuity patients. This capability will support a “hub and spoke” model for behavioral telehealth with Ballad hospital-based services.
- Build on Ballad Health’s EPIC roll-out and plan for the deployment of E-visits (email) as an additional means of access to care.
- Collectively, these telehealth resources in Ballad’s rural communities will provide additional access to both adult and pediatric specialists.

Strategic Approach

Strategy #4: Develop and Deploy Virtual Care Services

Metrics Addressed

- B8: Specialist Recruitment and Retention
- B10: Preventable Hospitalizations - Medicare
- B11: Preventable Hospitalizations – Adults
- B22: Antidepressant Medication Management – Effective Acute Phase Treatment
- B23: Antidepressant Medication Management – Effective Continuation Phase Treatment

Potential Barriers to Success

- The implementation plan is dependent on the availability health care professionals to provide telehealth services. To the extent that these professionals can not be recruited in the timeframe indicated, certain aspects of the plan may be delayed.
- Legislative and payor policy may hinder full adoption of various virtual care services like telehealth and E-visits.

Potential Mitigation Tactics

- Collaborate with state resources to advocate for legislative policy support

Strategic Approach

Strategy #5: Coordinate Preventive Health Care Services

Why?

- While increasing access to effective primary care and behavioral health is addressed in other strategies and plans, access to more specialized preventive health care services in rural areas is important to overall health and well-being. These services include maternal and prenatal health, preventive dental, and corrective vision services.

How?

- **Maternal and Prenatal Health:** Access to obstetrical care in rural areas is a nation-wide problem. A multi-stakeholder approach to infant and maternal mortality, pre-term birth, low birthweight, and neonatal abstinence syndrome is required. This includes establishing relationships with a personal care provider and public health communication campaigns to allow for early identification of pregnancy; programs to support primary care providers delivery of pre-natal care such as early identification and triage protocols for high-risk pregnancies; virtual hospital consults with MFM providers; centering pregnancy programs, and post-partum VLARC insertion. Successful models of collaborative action such as the South Carolina Birth Outcome Initiative exist and have shown success in rural geographies. A Maternal and Prenatal Health plan will be developed as part of the population health planning process, and potentially may be a specific area of focus for the Accountable Care Community.

Strategic Approach

Strategy #5: Coordinate Preventive Health Care Services

How?

- **Dental Services:** Ballad will propose an initiative to increase the current reach of dental sealant programming in schools be included as part of the community partnership activities designed to strengthen community action (see the Strengthen Community Action process outlined in the Population Health Plan under Focus Area Three)
- To increase the availability of additional preventive and restorative dentistry in the region, Ballad is exploring the opportunity to create a hospital sponsored rural dental residency program that would draw dental students from regional schools of dentistry, and provide additional capacity to treat individuals who cannot afford dental care. It is recommended that this initiative be evaluated as part of the Academics and Research plan.
- **Vision Services:** Ballad will propose that an initiative to increase the reach of current community based vision screening and corrective services be included as part of the community partnership activities designed to strengthen community action (see the Strengthen Community Action process outlined in the Population Health Plan under Focus Area Three)

Strategic Approach

Strategy #5: Coordinate Preventive Health Care Services

Metrics Addressed

- B19:Prenatal Care in the First Trimester

Potential Barriers to Success

- The implementation plan is dependent on the collaboration of community partners. To the extent that these partnerships take longer to develop than expected, certain aspects of the plan may be delayed.

Potential Mitigation Tactics

- Per the population health plan, leverage the Accountable Care Community to engage in these initiatives

Rural Health Services Plan

3. Implementation Roadmap

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: 2019

Implementation Milestones and Metrics: Q1 and Q2

Strategies	Q1 Milestones	Q1 Metrics	Q2 Milestones	Q2 Metrics
1. Expand Access to PCPs Through Additions of Mid-levels	<ul style="list-style-type: none"> Begin process for determining priority locations for mid-levels in Virginia Begin recruiting PCP for Virginia location 	<ul style="list-style-type: none"> <i>Process initiated</i> <i>Recruitment progress</i> 	<ul style="list-style-type: none"> Determine priority locations for mid-levels and begin recruitment 	<ul style="list-style-type: none"> <i>Priority locations determined and recruitment initiated</i>
2. Recruit Physician Specialists	<ul style="list-style-type: none"> Begin process for determining locations/specialties 	<ul style="list-style-type: none"> <i>Process initiated</i> 	<ul style="list-style-type: none"> Finalize priority locations for specialists and begin recruiting 	<ul style="list-style-type: none"> <i>Priority locations determined and recruitment initiated</i>
3. Implement Team-Based Care Models to Support PCPs	<ul style="list-style-type: none"> Initiate development of operational plan and metrics for regional deployment of an enhanced team-based care model 	<ul style="list-style-type: none"> <i>Operational plan initiated</i> 	<ul style="list-style-type: none"> Complete operational plan and metrics for regional deployment of an enhanced team-based care model Recruit staff for initial regional pilot site 	<ul style="list-style-type: none"> <i>Operational plan complete</i> <i>Begin staff recruitment</i>
4. Deploy Virtual Care Services	<ul style="list-style-type: none"> Develop plan for deployment of comprehensive telehealth equipment to nine (9) Ballad EDs 	<ul style="list-style-type: none"> <i>Deployment plan completed</i> 	<ul style="list-style-type: none"> Begin deployment of comprehensive telehealth equipment to nine (9) Ballad EDs Begin service plan for addition of telehealth service programs to Ballad EDs – focusing first on tele-stroke, tele-peds, and tele-behavioral 	<ul style="list-style-type: none"> <i>Equipment deployed consistent with deployment plan</i> <i>Initiate service planning</i>
5. Coordinate Preventive Services	<ul style="list-style-type: none"> Refer to other plans 		<ul style="list-style-type: none"> Refer to other plans 	

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: 2019

Implementation Milestones and Metrics: Q3 and Q4

Strategies	Q3 Milestones	Q3 Metrics	Q4 Milestones	Q4 Metrics
1. Expand Access to PCPs Through Additions of Mid-levels	<ul style="list-style-type: none"> Hire providers for initial sites 	<ul style="list-style-type: none"> <i>Providers hired for initial sites</i> 	<ul style="list-style-type: none"> Evaluate and refine operations in first sites Continue hiring per plan 	<ul style="list-style-type: none"> <i>New providers hired</i> <i>New provider pipeline</i> <i>Y2 milestones and metrics accepted</i> <i># of patients treated by additional PC providers</i>
2. Expand Access to PCPs Through Continuity Clinics	<ul style="list-style-type: none"> Hire providers for initial sites 	<ul style="list-style-type: none"> <i>Providers hired for initial sites</i> 	<ul style="list-style-type: none"> Evaluate and refine operations in first sites Continue hiring per plan 	<ul style="list-style-type: none"> <i>New providers hired</i> <i>New provider pipeline</i> <i>Y2 milestones and metrics accepted</i> <i># of patients treated by additional specialists</i>
3. Implement Team-Based Care Models to Support PCPs	<ul style="list-style-type: none"> Hire staff and begin operations for regional pilot site Begin planning for second and third rural expansion sites 	<ul style="list-style-type: none"> <i>Staff hired for pilot site</i> <i>Second and third rural expansion sites initiated</i> 	<ul style="list-style-type: none"> Evaluate and refine operations in first regional pilot site Complete planning for second and third rural expansion sites 	<ul style="list-style-type: none"> <i>Evaluation report and future recommendations</i> <i>Second and third rural expansion site plans complete</i> <i>Y2 milestones and metrics accepted</i> <i># of patient lives under management of a team based care model</i>
4. Deploy Virtual Care Services	<ul style="list-style-type: none"> Continue deployment of comprehensive telehealth equipment to nine (9) Ballad EDs Continue service plan for addition of telehealth service programs to Ballad EDs – focusing first on tele-stroke, tele-peds, and tele-behavioral 	<ul style="list-style-type: none"> <i>Equipment deployed consistent with deployment plan</i> <i>Plan continuation</i> 	<ul style="list-style-type: none"> Complete deployment of comprehensive telehealth equipment to nine (9) Ballad EDs Complete service plan for addition of telehealth service programs to Ballad EDs – focusing first on tele-stroke, tele-peds, and tele-behavioral 	<ul style="list-style-type: none"> <i>All Ballad EDs have comprehensive telehealth equipment</i> <i>Plan for service deployment approved</i> <i>Y2 milestones and metrics accepted</i>
5. Coordinate Preventive Services	<ul style="list-style-type: none"> Refer to other plans 			<ul style="list-style-type: none"> Refer to other plans

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: 2020

Strategies	2020 Milestones and Metrics
1. Expand Access to PCPs Through Additions PCPs and Mid-levels	<ul style="list-style-type: none"> Evaluate mid-level performance in 2019 to identify impact and opportunities for improvement Add at least one (1) additional mid-level provider to a PCP practice in 2020 <i>Number of patients treated by additional primary care providers</i>
2. Recruit Physician Specialists	<ul style="list-style-type: none"> Evaluate operations initiated in 2019 to identify impact and opportunities for improvement <i>Number of patients treated by additional specialist providers</i>
3. Implement Team-Based Care Models to Support PCPs	<ul style="list-style-type: none"> Evaluate operations initiated in 2019 to identify impact and opportunities for improvement Initiate operations for second and third rural expansion sites for team-based care <i># of patient lives under management of a team based care model</i>
4. Deploy Virtual Care Services	<ul style="list-style-type: none"> Add secondary carts ensuring all Ballad hospitals have primary and secondary telehealth equipment Add tele-stroke hospital locations consistent with service deployment plan Continue tele-peds specialty deployment consistent with plans (see Children’s Health Services Plan) Expand E-visit program Add tele-behavioral health outpatient sites <i>Number of patients treated through new tele-stroke services</i> <i>Number of patients treated through new tele-behavioral services</i> <i>Number of patients treated through new tele-pediatric services</i>
5. Coordinate Preventive Services	<ul style="list-style-type: none"> <i>Refer to other plans</i>

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: 2021

Strategies	2021 Milestones and Metrics
1. Expand Access to PCPs Through Additions PCPs and Mid-levels	<ul style="list-style-type: none"> Evaluate mid-level performance in 2020 to identify impact and opportunities for improvement Add at least one (1) additional mid-level provider to a PCP practice in 2021 <i>Number of patients treated by additional primary care providers</i>
2. Recruit Physician Specialists	<ul style="list-style-type: none"> Evaluate operations initiated in 2020 to identify impact and opportunities for improvement <i>Number of patients treated by additional specialist providers</i>
3. Implement Team-Based Care Models to Support PCPs	<ul style="list-style-type: none"> Evaluate operations initiated in 2020 to identify impact and opportunities for improvement <i># of patient lives under management of a team based care model</i>
4. Deploy Virtual Care Services	<ul style="list-style-type: none"> Continue adding tele-stroke hospital locations consistent with service deployment plan Continue tele-peds specialty deployment consistent with plans (see Children’s Health Services Plan) Add tele-behavioral health outpatient sites <i>Number of patients treated through new tele-stroke services</i> <i>Number of patients treated through new tele-behavioral services</i> <i>Number of patients treated through new tele-pediatric services</i>
5. Coordinate Preventive Services	<ul style="list-style-type: none"> <i>Refer to other plans</i>

Final Rural Health Services Plan for the Commonwealth of Virginia

January 29, 2019



It's your story. We're listening.

Health Information Exchange Plan for the Commonwealth of Virginia

January 29, 2019



It's your story. We're listening.

Introduction

- A final version of the Health Information Exchange (HIE) plan was requested by the Commonwealth of Virginia Department of Health in a January 12, 2018 letter regarding “Final Cooperative Agreement Measures.” The Plan is due in final form by January 31, 2019.
- The content of this plan is consistent with requirements as outlined in Cooperative Agreement, conditions 8 and 26 and represents those actions to be taken by Ballad Health deemed by the Commonwealth of Virginia to constitute public benefit.

Spending Requirements

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total:
Expanded Access to HealthCare Services	Behavioral Health Services	\$1,000,000	\$ 4,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 85,000,000
	Children's Services	\$1,000,000	\$ 2,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 27,000,000
	Rural Health Services	\$1,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 28,000,000
Health Research and Graduate Medical Education		\$3,000,000	\$ 5,000,000	\$ 7,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 85,000,000
Population Health Improvement		\$1,000,000	\$ 2,000,000	\$ 5,000,000	\$ 7,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 75,000,000
Region-wide Health Information Exchange		\$1,000,000	\$ 1,000,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 8,000,000
Total:		\$8,000,000	\$ 17,000,000	\$ 28,750,000	\$ 33,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 308,000,000

Important Dates

Plans Due in First Twelve Months (January 31, 2019)

- Health Information Exchange (HIE) Plan
- Health Research/Graduate Medical Education (HR/GME Plan)

** Consistent with The Commonwealth of Virginia Department of Health request, Ballad Health previously submitted a draft version of the HIE plan on November 30, 2018 and provided a copy to the State of Tennessee. This document presents the final version of that plan.*

Process for Plan Development



Process and Participation for Plan Development

In developing this plan, Ballad Health has referenced previously developed plans and analyses and solicited extensive stakeholder input including:

- Conducted approximately 50 individual interviews
- Held approximately 30 meetings with external groups, including:
 - State of Franklin Healthcare Associates
 - East Tennessee State University
 - Holston Medical Group
 - Tennessee Department of Health
 - Tennessee Department of Finance & Administration
 - Virginia Department of Health
 - etHIN
 - OnePartner
 - MedVirginia
 - Connect Virginia
 - The Sequoia Project
 - CollectiveMedical
 - Cleveland Clinic
 - Epic
 - CRISP
 - Velatura
 - The Center for Medical Interoperability
 - CareJourney

Table of Contents for HIE Plan

- Plan Overview
 - VA Cooperative Agreement Requirements
 - Key Supported Metrics
 - HIE Strategies
 - Strategies Related to VA Cooperative Agreement HIE Plan Requirements
 - Investment Plan
- Strategic Approach
- Implementation Roadmap
- Appendices

HIE Plan

1. Plan Overview

Plan Overview

VA Cooperative Agreement HIE Plan Requirements

VA Cooperative Agreement Requirements – Conditions 8 and 26

- 1) Detail how the planned expenditure of funds will result in Ballad Health's meaningful participation in a regional health information exchange or a cooperative arrangement whereby privacy protected health information may be shared with independent physicians and other community-based providers for the purpose of providing seamless patient care
- 2) Detail how imposition of any fees or costs for access to the health information exchange or cooperative arrangement complies with federal anti-kickback statutes and rules and is a minimal amount not exceeding what is reasonable compared to other communities offering such services
- 3) Describe how Ballad Health will participate in the Commonwealth's ConnectVirginia health information exchange, ConnectVirginia's Emergency Department Care Coordination Program and Immunization Registry, and Virginia's Prescription Monitoring Program
- 4) Establish the foundation for data acquisition and exchange in a manner that would promote and support population health improvement efforts
- 5) Ensure that it has a high likelihood of preventing unnecessary and redundant care
- 6) Describe how Ballad Health will adopt a Common Clinical IT Platform and make access available on reasonable terms to all physicians in the service area; data collected shall be made reasonably available to researchers with creditable credentials and relationship with Ballad Health

Plan Overview

HIE Strategies

Ballad Health will deploy foundational and tactical strategies to provide and promote interoperability in its Geographic Service Area (GSA). Many of these strategies are predicated on the successful extension of Epic system to Legacy Mountain State Health Alliance.

Strategy #1: Establish Ballad Health HIE Steering Committee

Strategy #2: Conduct Geographic Service Area Interoperability Research

Strategy #3: Identify Optimal Portfolio of Interoperability and Assemble Deployment Strategies

Strategy #4: Develop an HIE Recruitment and Support Plan

Strategy #5: Participate in ConnectVirginia's HIE and Other TN/VA Regulatory Programs

Plan Overview

Strategies Related to VA Cooperative Agreement HIE Plan Requirements

VA Cooperative Agreement Requirement	1. HIE Steering Committee	2. Inter-Operability Research	3. Optimal Portfolio and Deployment	4. HIE Recruitment & Support Plan	5. Participate in Connect-Virginia & Other TN/VA Programs
1) Detail how the planned expenditure of funds will result in Ballad Health’s meaningful participation in a regional health information exchange or a cooperative arrangement whereby privacy protected health information may be shared with independent physicians and other community-based providers for the purpose of providing seamless patient care			Y	Y	
2) Detail how imposition of any fees or costs for access to the health information exchange or cooperative arrangement complies with federal anti-kickback statutes and rules and is a minimal amount not exceeding what is reasonable compared to other communities offering such services			Y	Y	
3) Describe how Ballad Health will participate in the Commonwealth’s ConnectVirginia health information exchange, ConnectVirginia’s Emergency Department Care Coordination Program and Immunization Registry, and Virginia’s Prescription Monitoring Program					Y
4) Establish the foundation for data acquisition and exchange in a manner that would promote and support population health improvement efforts	Y	Y	Y	Y	Y
5) Ensure that it has a high likelihood of preventing unnecessary and redundant care	Y				Y
6) Describe how Ballad Health will adopt a Common Clinical IT Platform and make access available on reasonable terms to all physicians in the service area; data collected shall be made reasonably available to researchers with creditable credentials and relationship with Ballad Health	Y	Y	Y	Y	

Plan Overview

HIE Estimated Investment Summary

Health Information Exchange Plan	Year 1		Year 2		Year 3		Year 1-3 Total	
	Low	High	Low	High	Low	High	Low	High
Strategy #1: Establish Ballad Health HIE Steering Committee	\$157,000		\$157,000		\$157,000		\$471,000	
Strategy #2: Conduct Geographic Service Area Interoperability Research	\$81,000		\$0		\$0		\$81,000	
Strategy #3: Identify Optimal Portfolio of Interoperability and Assemble Deployment Strategies	\$241,000		\$187,000		\$187,000		\$615,000	
Strategy #5: Participate in Connect Virginia's HIE and Other TN/VA Regulatory Programs	\$213,000		\$249,000		\$249,000		\$711,000	
Sub-Total	\$692,000		\$593,000		\$593,000		\$1,878,000	
Strategy #4: Develop an HIE Recruitment and Support Plan	\$308,000	\$308,000	\$407,000	\$2,797,000	\$157,000	\$1,684,000	\$872,000	\$4,789,000
Total	\$1,000,000	\$1,000,000	\$1,000,000	\$3,390,000	\$750,000	\$2,277,000	\$2,750,000	\$6,667,000
<i>COPA-Mandated Minimum Expenditures</i>	<i>\$1,000,000</i>		<i>\$1,000,000</i>		<i>\$750,000</i>		<i>\$2,750,000</i>	
Potential Funding Needed in Excess of Minimum Spending Requirements	\$0	\$0	\$0	\$2,390,000	\$0	\$1,527,000	\$0	\$3,917,000

HIE Plan

2. Strategic Approach

Strategic Approach

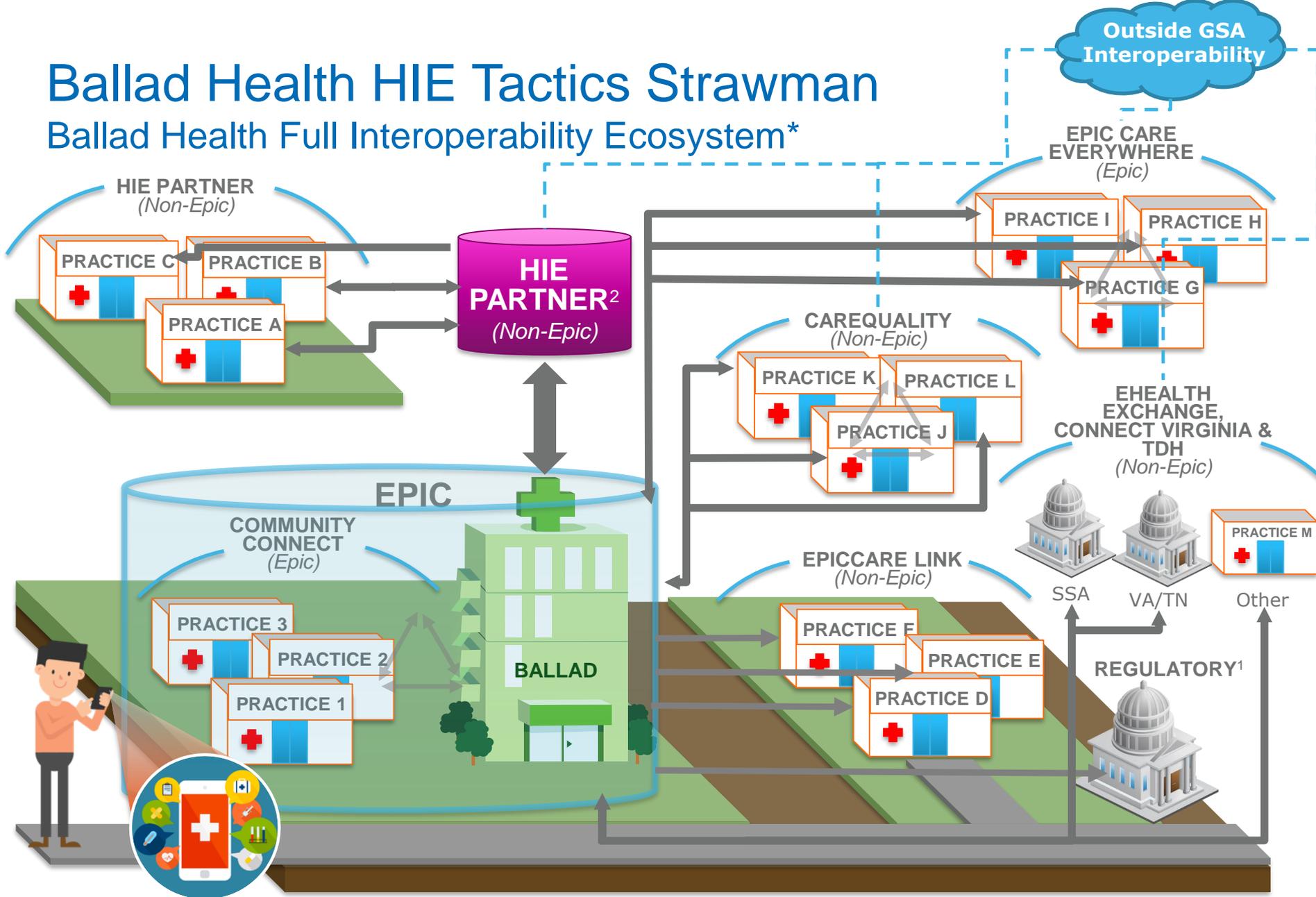
HIE Plan Guiding Principles (Key Design Requirements)

Ballad Health developed a set of Guiding Principles, reflecting management's philosophy, which helped to guide decision making for the plan. The Guiding Principles are as follows:

- Existing investment in Epic tools: Ballad Health's HIE Plan will capitalize on the existing investment in Epic tools exchanging relevant patient data as needed by providers
- OnePartner Standard Alignment: Ballad Health's endorsed HIE offerings should match or surpass the regional standards set by OnePartner or other available options
- HIE Approach: Partner with regional HIEs
- Degree of HIE Technological Innovation: Ballad Health wants to engage in visible, pioneering HIE, preferable via working with their regional HIE organizations and utilize standards-based interoperability (i.e., HL7, FHIR)
- Data Ownership Model: GSA patient information should preferably reside within a single warehouse or data repository to allow for population health analytics; protect from the resale or other commercial use of the HIE data; provide approved researchers with access
- HIE Entity Governance: A defined set of organizations participate in shared governance of the regional HIE
- Common Clinical IT Platform: Make reasonably accessible to all physicians in GSA

Ballad Health HIE Tactics Strawman

Ballad Health Full Interoperability Ecosystem*



* Information retrieval is dictated by existing patient relationship

¹ Includes EDCC, PDMP, Immunization, etc.

² HIE Partner may serve as a TEFCA defined health information network (HIN) and/or Qualified Health Information Network (QHIN)

Strategy #1: Establish Ballad Health HIE Steering Committee

Why?

- Independent Providers* will benefit from a well governed steering committee that is responsive to their/ the Geographic Service Area's HIE needs
- A well-developed HIE governance structure will ensure the successful deployment and ongoing management of the organization's HIE strategies and initiatives

How?

- Establish a Ballad Health HIE Steering Committee - Establish an HIE Steering Committee to manage the deployment and ongoing maintenance of Ballad Health's HIE program, including maintaining compliance with the COPA. Participants to include senior leadership representing:
 - Operations
 - Finance
 - Information technology
 - Legal
 - Ballad Medical Group
 - Population Health
 - Quality
 - External Providers
 - Privacy & Security
 - Marketing
- Appoint an HIE Program Director - Designate an HIE Program Director responsible for the day to day management of Ballad Health's program

*'Independent Providers' will be used throughout the document having the same meaning as 'Independent Physician and Other Providers' within COPA/CA

Strategy #2: Conduct Geographic Service Area Interoperability Research

Why?

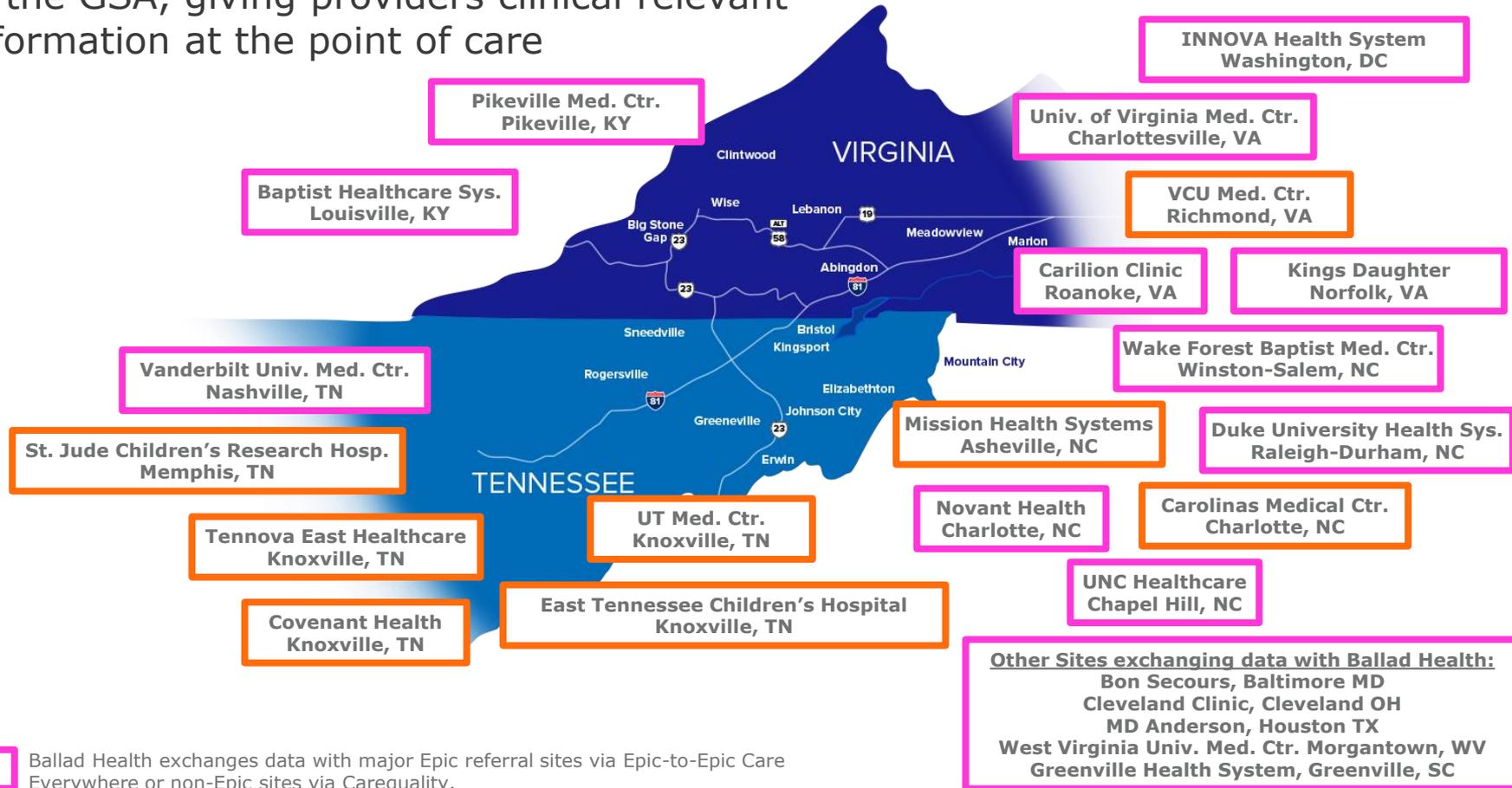
- Most HIE connectivity is voluntary and requires some level of investment by participating providers and healthcare organizations (no greater than allowed per federal anti-kickback statutes)
- Market research will allow Ballad Health to better understand the actual interest, readiness and willingness to pay of Geographic Service Area Independent Providers to engage in HIE within the region
- Independent Providers will be educated on the various offerings, including estimated costs to the provider and will be able to choose a solution that provides interoperability while fitting within the provider's budget, wants and needs

How?

- Ballad Health has already conducted an initial assessment of available interoperable options within the market place. Leveraging the initial assessment, Ballad Health will conduct research to gauge interest in menu offerings. This will allow Ballad Health to educate and survey Independent Providers within the region to understand their interest in the interoperability options. See following slides for the initial assessment. Additional information is provided in Appendix A: Environmental Scan and Appendix B: HIE Current State Analysis

Interoperability Option Assessment

Ballad Health already leverages Epic to exchange health information automatically with both Epic and non-Epic sites, inside and outside of the GSA, giving providers clinical relevant information at the point of care



Interoperability Option Assessment

Mutually Desired Depth of Interoperability



Strategy	Epic Community Connect	Care Everywhere Epic-to-Epic	Carequality	eHealth Exchange & Connect-Virginia	HIE Partner	Portal, Messaging & Integration	Other Patient-driven HIE Tools	Regulatory
Depth of Interoperability	High	High	Medium	Medium	Medium	Low	NA	NA
Non-Ballad Health Provider Interoperability	Yes	Yes	Yes	No	Yes	No	No	No
Bi-Directional?	Yes	Yes	Yes	Yes	Yes (w/ Practice EHR Config.)	No (Limited)	No (Limited)	Varies
Effort to Implement	High	Low	Low	Medium	Medium	Low	Low	Varies
Governed By?	Shared	Ballad Health	Ballad Health	N/A	Shared	Ballad Health	Ballad Health	N/A
Cost to Ballad Health		-		-		-	-	
Cost to Independent Provider		-		Varies	TBD	-	N/A	N/A

Interoperability Option Assessment

Interoperability Options

1. Epic Community Connect

- Ballad Health would develop a program to extend its Epic instance to Independent Providers. Beyond the EHR functional benefit, Ballad Health and Independent Providers share a single patient record. Providers pay a one-time implementation fee and an ongoing maintenance fee
- Enables seamless interoperability among Ballad Health and Independent Providers

2. Care Everywhere Epic-to-Epic

- Ballad Health to exchange information with other Epic customers via Epic native interoperability
- Epic users can use Happy Together, a functionality that presents all aggregated patient records in a single and user-friendly view
- Enables interoperability among Ballad Health and other Epic facilities and providers both within and outside the Geographic Service Area

Interoperability Option Assessment

Interoperability Options (Continued)

3. Carequality

- Ballad Health to exchange information with other non-Epic organizations via Carequality
- Happy Together will present all aggregated patient records in a single and user-friendly view, within Epic. Independent Providers' views and functionality will vary by non-Epic system. Independent Providers will be responsible to pay any set up or ongoing fees charged by their vendor
- Enables interoperability among Ballad Health and/or other Carequality participants and Independent Providers

4. eHealth Exchange & Connect-Virginia

- Ballad Health to exchange information with large non-Epic customers, federal entities (VA, DOD,SSA), and non-Epic organizations using eHealth Exchange and Connect-Virginia when these exclusive networks are being used
- Enables interoperability with other large non-Epic entities where patients may have been referred, outside of the region

Interoperability Option Assessment

Interoperability Options (Continued)

5. HIE Partner

- Ballard Health to partner with or purchase an external HIE organization (could be national, state, regional) that supports community HIE with a centralized database and connects bi-directionally with Ballard Health. Ballard Health will provide oversight and financial support. Participating Independent Providers pay reasonable implementation and ongoing support fees
- Enables interoperability between Ballard Health and Independent Providers. Also enables interoperability among Independent Providers

6. Portal, Messaging & Integration Services

- Ballard Health to provide Independent Providers with free access to an Epic based portal with referral, secure messaging, and read-only access to Ballard Health's Epic system, one-way messaging services or interfaces. Ballard Health will provide resources and oversight to facilitate the setup, testing, and implementation on behalf of Independent Providers
- Enables Independent Providers the ability to view and communicate with Ballard Health without incurring additional fees

Interoperability Option Assessment

Interoperability Options (Continued)

7. Other Patient-Driven HIE Tools

- Ballard Health to provide Independent Providers and patients education around patient-driven HIE tools (such as Epic's Share Everywhere or leading retail vendor solutions such as Apple Health) by continually monitoring industry development, engaging the community, and promoting the use of these tools throughout the region
- Enables patients to actively secure a copy of their electronic medical record and share with providers as needed

8. Comply with Regulatory Requirements

- Ballard Health will participate in all required federal, state, or regional regulatory programs and encourages participation by other area providers (such as VA EDCC, VA PDMP, VA and TN Immunization Programs). Enables Independent Providers the ability to view and communicate with Ballard Health without incurring additional fees
- Enables interoperability among Ballard Health, other health organizations and Independent Providers which improves patient care and reduces redundant services

Strategy #3: Identify Optimal Portfolio of Interoperability and Assemble Deployment Strategies

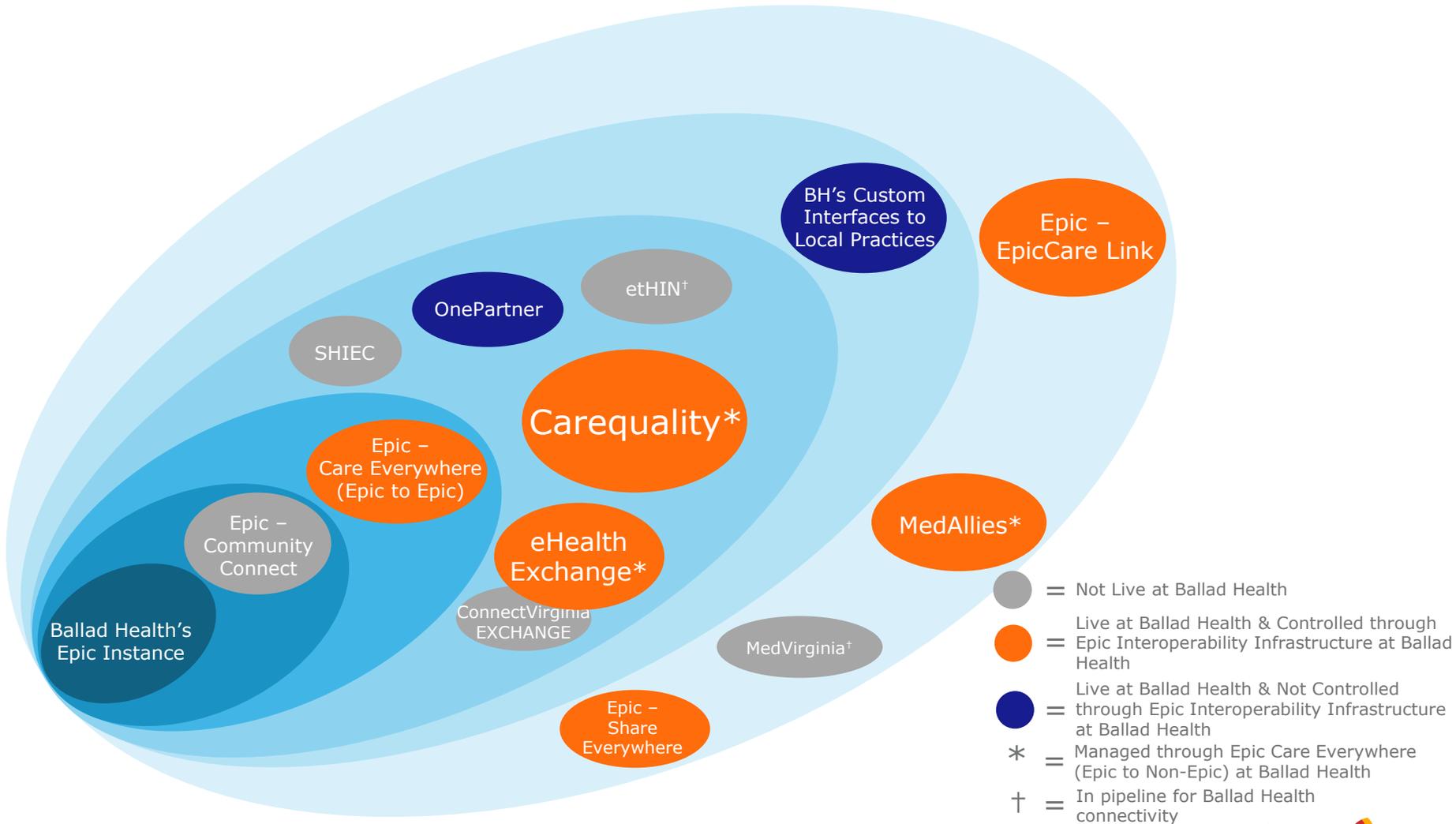
Why?

- While all the aforementioned interoperability options are available in the market, there is not a rationale plan to connect optimally with these capabilities.
- The goal is to obtain maximum concentration of patient encounters from the available funding. This will require prioritizing interoperability options in such a way that generates the maximum benefit and coverage with the least cost. The approach will be to layer the most impactful solution first, then the second most impactful solution and so forth. Resource constraints exist within Ballad Health as well as at the provider level (for example, some providers are still documenting on paper). This coupled with market choice limits the ability to obtain 100 percent of coverage and 100 percent of capabilities. The next slides are examples to illustrate the change to interoperability coverage over time based on this layering approach.

How?

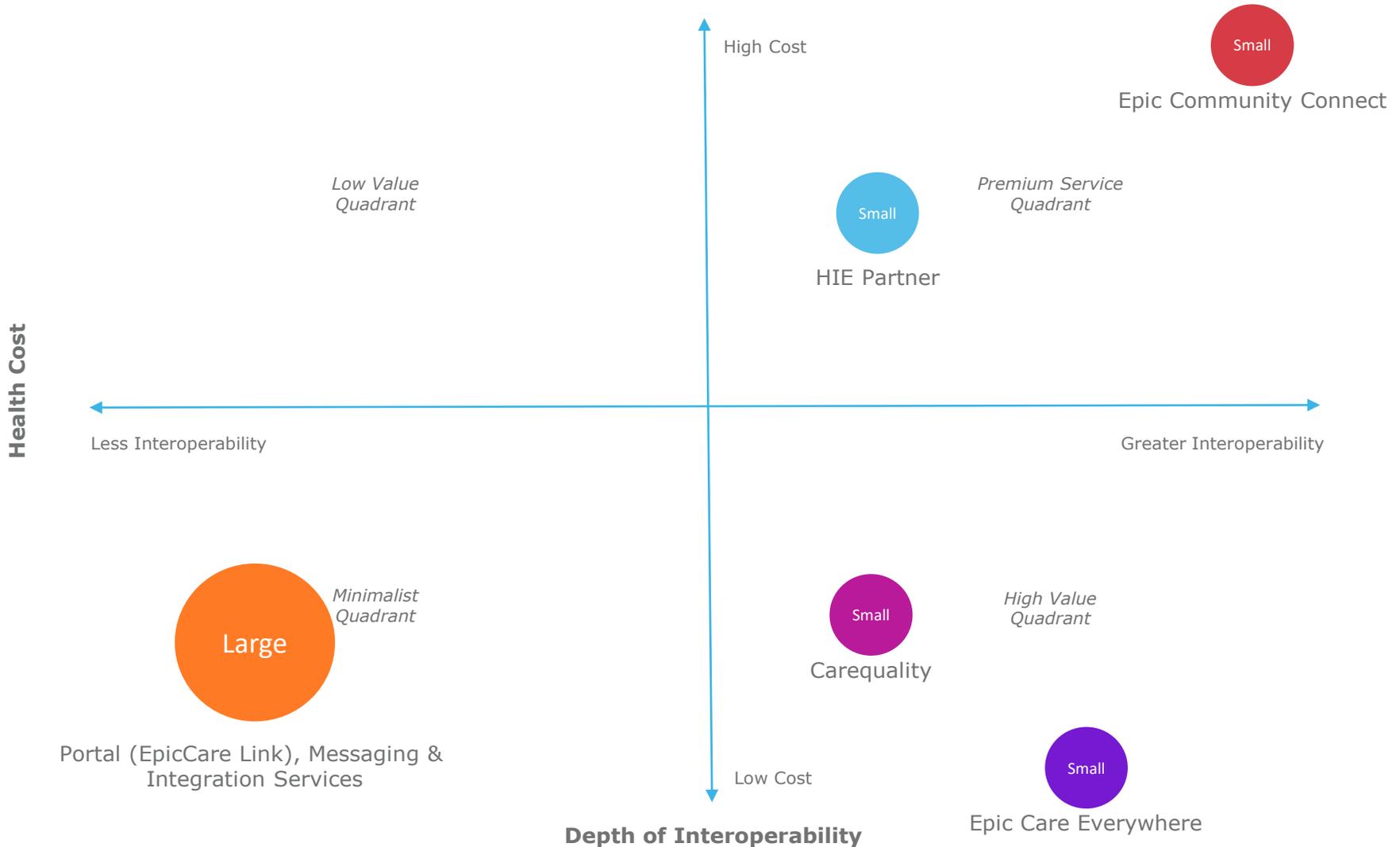
- Develop an HIE plan with deployment strategies. Based on the initial assessment of the current interoperability environment in the GSA and the market survey gauging interest of area providers, Ballad Health will formulate a future state and develop an HIE plan that address gaps between where it wants to be and where it is today.

HIE Current State Analysis – HIE Capability in the Ballad Health Service Area



Layering Approach - Illustrative

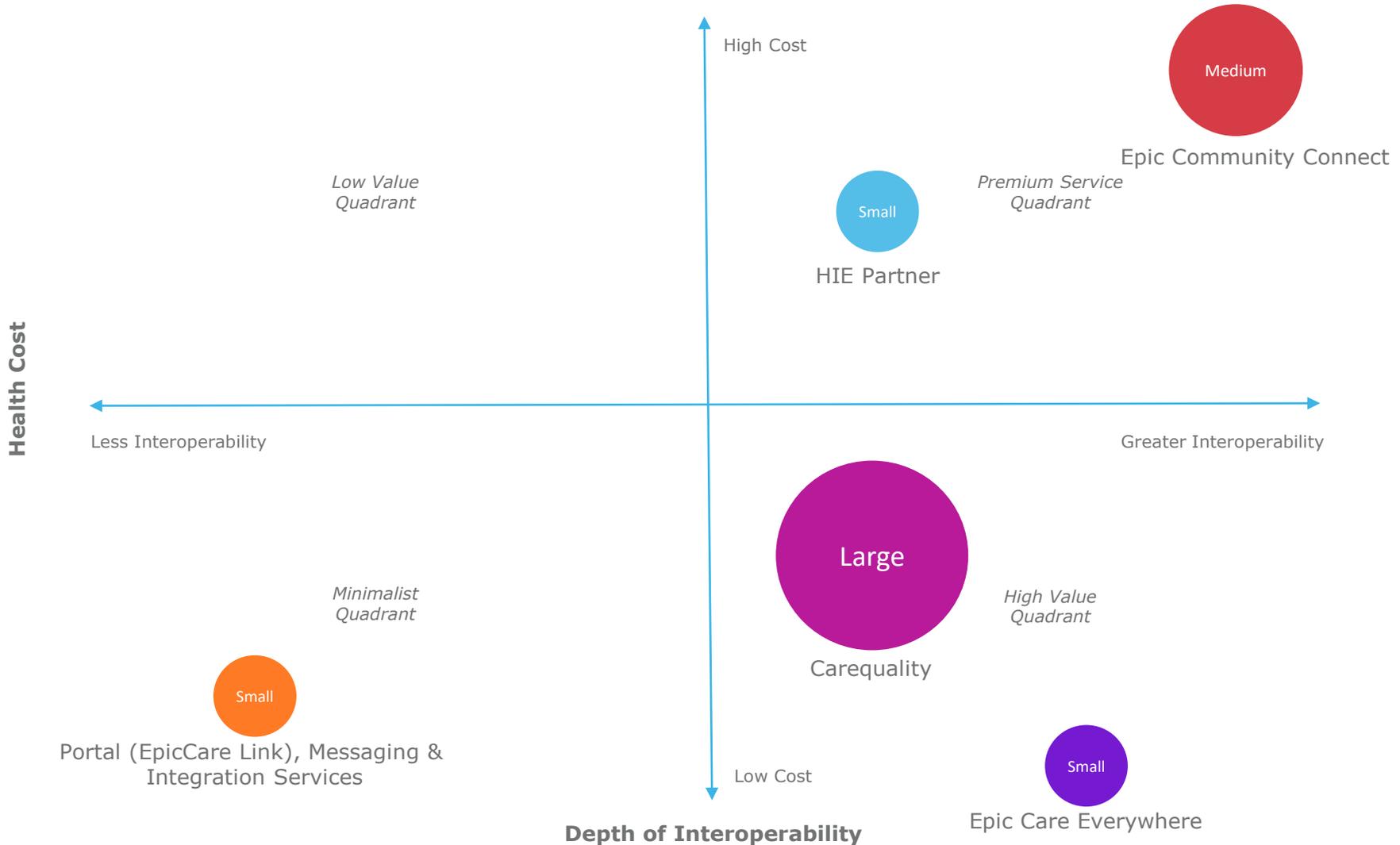
Strategy Interoperability Projected Value & Adoption Comparison: Short-Term



Size of bubbles reflects the relative projected # of GSA providers exchanging information via Strategy

Layering Approach - Illustrative

Strategy Interoperability Projected Value & Adoption Comparison: Long-Term



Size of bubbles reflects the relative projected # of GSA providers exchanging information via Strategy

Strategy #4: Develop an HIE Recruitment and Support Plan

Why?

- A recruitment and support plan will identify and engage practices interested in Ballad Health's HIE program and educate them. It will identify the support necessary to ensure successful deployment.
- Independent Providers will be made aware of Ballad Health's program and have an opportunity to ask/address their questions

How?

- Based on outcomes of Strategies #2 and #3, Ballad Health will design and deploy an HIE Recruitment Plan. The plan will include communications both within Ballad Health and with the Independent Providers. It will include marketing activities and materials to approach the Independent Providers within the region regarding the menu offerings
- Ballad Health will identify a marketing staff member who will be responsible to recruit participation from the Independent Providers in the region in the various interoperability options. Staff will coordinate activities with the HIE Partner.

Strategy #5: Participate in ConnectVirginia's HIE and Other TN/VA Regulatory Programs

Why?

- Enables interoperability among Ballad Health, other health organizations and Independent Providers which improves patient care and reduces redundant services
- Enables Independent Providers the ability to view and communicate with Ballad Health without incurring additional fees

How?

- Ballad Health will continue to participate in the VA Emergency Department Care Coordination (EDCC) Program and roll out to the Tennessee facilities
- Ballad Health will continue to participate in the Commonwealth's Prescription Drug Monitoring Program (PDMP) program
- Ballad Health will continue to participate in the VA and TN Immunizations Programs
- Ballad Health will continue to participate in other VA and TN Regulatory reporting/sharing programs such as: VA State Dept. of Health Reporting - Electronic Laboratory Reporting, State Dept. of Health Reporting - Syndromic Surveillance (TN & VA), Tennessee Hospital Association TennCare

HIE Plan

3. Implementation Roadmap

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2020

Implementation Milestones and Metrics: Q1 and Q2

Strategies	Q1 Milestones	Q1 Metrics	Q2 Milestones	Q2 Metrics
1. Establish Ballad Health Steering Committee	<ul style="list-style-type: none"> Establish a Ballad Health Interoperability Steering with Committee with internal and external representation 	<ul style="list-style-type: none"> <i>Formed HIE Steering Committee</i> 	<ul style="list-style-type: none"> Develop Interoperability Committee Charter, Roles and Responsibilities 	<ul style="list-style-type: none"> <i>Approved Charter</i>
2. Conduct Geographic Service Area Interoperability Research	<ul style="list-style-type: none"> Initiate Market Research to Gauge Interest in Menu Offerings 		<ul style="list-style-type: none"> Complete Market Research to Gauge Interest in Menu Offerings 	
3. Identify Optimal Portfolio of Interoperability and Assemble Deployment Strategies	<ul style="list-style-type: none"> N/A - Activity initiated once Strategy #2 completed 		<ul style="list-style-type: none"> N/A - Activity initiated once Strategy #2 completed 	

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2020

Implementation Milestones and Metrics: Q3 and Q4

Strategies	Q3 Milestones	Q3 Metrics	Q4 Milestones	Q4 Metrics
1. Establish Ballad Health Steering Committee	<ul style="list-style-type: none"> Recruit an Interoperability Program Director 	<ul style="list-style-type: none"> <i>Posted Program Director Position</i> 	<ul style="list-style-type: none"> Hire an Interoperability Program Director Identify Y2 quarterly targets and timelines 	<ul style="list-style-type: none"> <i>Filled Program Director Position</i> <i>Y2 milestones and metrics accepted</i>
2. Conduct Geographic Service Area Interoperability Research	<ul style="list-style-type: none"> Compile and Interpret Market Research Results 		<ul style="list-style-type: none"> Identify Y2 quarterly targets and timelines 	<ul style="list-style-type: none"> <i>Y2 milestones and metrics accepted</i>
3. Identify Optimal Portfolio of Interoperability and Assemble Deployment Strategies	<ul style="list-style-type: none"> N/A - Activity initiated once Strategy #2 completed 		<ul style="list-style-type: none"> Utilize Market Research Result to initiate draft HIE roll-out plan Identify Y2 quarterly targets and timelines 	<ul style="list-style-type: none"> <i>Y2 milestones and metrics accepted</i>

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2020

Implementation Milestones and Metrics: Q1 and Q2

Strategies	Q1 Milestones	Q1 Metrics	Q2 Milestones	Q2 Metrics
4. Develop an HIE Recruitment and Support Plan	<ul style="list-style-type: none"> N/A - Activity initiated once Strategies #2 and #3 are completed 		<ul style="list-style-type: none"> N/A - Activity initiated once Strategies #2 and #3 are completed 	
5. Participate in ConnectVirginia's HIE and Associated Programs	<ul style="list-style-type: none"> Participate in ConnectVirginia EDCC program Participate in ConnectVirginia PDMP program Participate in Virginia Immunization program Participate in other Tennessee and Virginia regulatory programs 	<ul style="list-style-type: none"> <i>Ballad Health VA EDs participating</i> <i>Ballad Health VA applicable entities participating</i> <i>Ballad Health VA facilities participating</i> <i>Ballad Health facilities participating as required</i> 	<ul style="list-style-type: none"> Participate in ConnectVirginia EDCC program Participate in ConnectVirginia PDMP program Participate in Virginia Immunization program Participate in other Tennessee and Virginia regulatory programs 	<ul style="list-style-type: none"> <i>Ballad Health VA EDs participating</i> <i>Ballad Health VA applicable entities participating</i> <i>Ballad Health VA facilities participating</i> <i>Ballad Health facilities participating as required</i>

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2020

Implementation Milestones and Metrics: Q3 and Q4

Strategies	Q3 Milestones	Q3 Metrics	Q4 Milestones	Q4 Metrics
4. Develop an HIE Recruitment and Support Plan	<ul style="list-style-type: none"> N/A - Activity initiated once Strategy #2 and #3 are completed 		<ul style="list-style-type: none"> N/A - Activity initiated once Strategies #2 and #3 completed Identify Y2 quarterly targets and timelines 	<ul style="list-style-type: none"> <i>Y2 milestones and metrics accepted</i>
5. Participate in ConnectVirginia's HIE and Associated Programs	<ul style="list-style-type: none"> Participate in ConnectVirginia EDCC program Participate in ConnectVirginia PDMP program Participate in Virginia Immunization program Participate in other Virginia regulatory programs 	<ul style="list-style-type: none"> <i>Ballad Health VA EDs participating</i> <i>Ballad Health VA applicable entities participating</i> <i>Ballad Health VA facilities participating</i> <i>Ballad Health VA facilities participating as regulated</i> 	<ul style="list-style-type: none"> Participate in ConnectVirginia EDCC program Participate in ConnectVirginia PDMP program Participate in Virginia Immunization program Participate in other Virginia regulatory programs Identify Y2 quarterly targets and timelines 	<ul style="list-style-type: none"> <i>Ballad Health VA and TN EDs participating</i> <i>Ballad Health VA applicable entities participating</i> <i>Ballad Health VA facilities participating</i> <i>Ballad Health VA facilities participating as regulated</i> <i>Y2 milestones and metrics accepted</i>

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2021

Strategies	2021
1. Establish Ballad Health HIE Steering Committee	<ul style="list-style-type: none">• Issue a Request for Proposals (RFP) to regional HIE vendors
2. Conduct Geographic Service Area Interoperability Research	<ul style="list-style-type: none">• Update as new providers enter the market• Refresh to meeting changing provider needs
3. Identify Optimal Portfolio of Interoperability and Assemble Deployment Strategies	<ul style="list-style-type: none">• Finalize Health Information Exchange (HIE) Plan• Develop Community Connect program business plan• Develop deployment plan to pilot Community Connect at a practice• Deploy EpicCare Link, MedAllies and Interfaces to independent providers• Initiate assistance to independent providers to implement the Carequality network
4. Develop an HIE Recruitment and Support Plan	<ul style="list-style-type: none">• Develop an HIE recruitment plan• Develop an HIE communication and marketing plan• Hire marketing staff
5. Participate in ConnectVirginia's HIE and Associated Programs	<ul style="list-style-type: none">• Continue to participate in ConnectVirginia EDCC program• Continue to participate in ConnectVirginia PDMP program• Continue to participate in Virginia Immunization program• Continue to participate in other Tennessee and Virginia regulatory programs

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2022

Strategies	2022
1. Establish Ballad Health HIE Steering Committee	<ul style="list-style-type: none"> Choose an HIE Partner
2. Conduct Geographic Service Area Interoperability Research	<ul style="list-style-type: none"> Update as new providers enter the market Refresh to meeting changing provider needs Continue to identify, test and connect to large organizations where patients overlap outside of the GSA
3. Identify Optimal Portfolio of Interoperability and Assemble Deployment Strategies	<ul style="list-style-type: none"> Continue to deploy EpicCare Link, MedAllies and Interfaces to Independent Providers Continue assistance to independent providers to implement the Carequality network Continue to promote and utilize Epic Care Everywhere Deploy Community Connect to Independent Providers Deploy Epic's Share Everywhere to patients Deploy health apps (i.e., Apple Health, Google Health) Deploy HIE Partner
4. Develop an HIE Recruitment and Support Plan	<ul style="list-style-type: none"> Continue marketing menu offerings to Independent Providers
5. Participate in ConnectVirginia's HIE and Associated Programs	<ul style="list-style-type: none"> Continue to participate in ConnectVirginia EDCC program Continue to participate in ConnectVirginia PDMP program Continue to participate in Virginia Immunization program Continue to participate in other Tennessee and Virginia regulatory programs

Appendix A

Environmental Scan

Appendix A

Environmental Scan – Overview

- Advancements in technology make it easier to share information real time, at the point of care
 - Health information exchange has historically centered around document based exchange
 - Application programming interfaces (APIs) using the Fast Healthcare Interoperability Resources (FHIR) standard allows developers to create applications that can be plugged into an EHR's operating system and feed information directly into the provider workflow
- Recently introduced laws require interoperability
 - The 21st Century Cures Act establishes penalties of up to \$1M per violation for organizations that engage in information blocking
 - The Trusted Exchange Framework and Common Agreement (TEFCA) establishes a technical and governance infrastructure for the connection of health information exchange organizations
 - Laws seek to leverage shared data to promote new, innovative services

Appendix A

Environmental Scan – Overview (Cont.)

- Some models of sustainable HIEs have emerged
 - Chesapeake Regional Information System for our Patients (“CRISP”) relies upon grants and state mandated health system participation fees to achieve economic stability
 - Has achieved almost 100% participation of Maryland hospitals and ~80% participation of ambulatory practices
- Obstacles of competing interests, costs, and perceived value still exist
 - Fee for service reimbursements models continue to incentivize competing health providers to limit vs. promote information sharing
 - Many health providers have to join multiple health information exchange networks, each with its own requirements, setup and maintenance fees
 - Many health information exchange services are costly and fail to offer a solution that integrates into a provider’s workflow

Appendix A

Environmental Scan – HIE Uncertainty and Risk

- **Financial sustainability** - Creating a viable, sustainable financial model post federal, state and local grants. Many HIEs have rapidly failed once public funding was no longer provided
- **Integrating into a providers workflow** - Integrating the HIE technology solution into the workflow of the attending physician or care manager is a critical success factor but difficult to achieve
- **Achieving a critical mass of information** - Having sufficient information to provide value is a critical success factor for HIEs. Achieving this point requires time and costs
- **Privacy and security** - Ensuring health data privacy and security is maintained once information is collected and stored, particularly given increasing cyber attacks/ threats
- **Adoption** - Achieving adoption of an HIE with the smaller independent practices is a challenge due to low ROI or trust issues
- **Standards** - Many competing organizations created with the goal of becoming 'the' standard for interoperability
- **Regulatory** - Uncertainty around ONC's current TEFCA interoperability initiative and the impact on HIE's and providers, as well as future meaningful use requirements on providers

Appendix A

Environmental Scan – Regulatory

- Trusted Exchange Framework and Common Agreement (TEFCA)
 - Originates from the 21st Century Cures Act (Section 4003(b) &(c))
 - Goals of TEFCA:
 - Build on existing work already done by the industry
 - Provide a single ‘on ramp’ to interoperability (join any HIN)
 - Be scalable to support the entire nation
 - Build a competitive market allowing all to compete on data services
 - Achieve long-term sustainability
 - Participants will be able to join any Health Information Network (HIN) and have access to all data nationally
 - HINs will connect to Qualified Health Information Networks (QHIN) – QHIN will connect to each other to ensure national coverage
 - ONC will select Recognized Coordinating Entity (RCE) to operationalize and oversee TEFCA
 - Final rule due late 2018

Appendix A

Environmental Scan – Emerging Technology

- An application programming interface (API) is a set of standards that enable communication between multiple sources. APIs act as a software broker enabling two applications to talk to one another.
- API usage can be broken down into two categories:
 - APIs for traditional provider integration
 - Open API for patient data sharing
- Fast Healthcare Interoperability Resources (FHIR) is a standard for exchanging healthcare information electronically. APIs using FHIR allow applications to access health data at the source of truth in a standardized way.
- SMART Health IT (formally called SMART on FHIR) is an app platform for healthcare. It is an open, standards based technology platform that enables innovators to create apps that seamlessly and securely run across the healthcare system.
- There are HIE organizations (such as Chesapeake Regional Information System for our Patients – “CRISP”) starting to leverage FHIR APIs and that have realized early success by “removing the fraction in HIE”.

Appendix A

Environmental Scan – Center for Medical Interoperability

- 501(c)(3) cooperative, think tank research and development lab
- Founded by health systems to simplify and advance data and sharing among medical technologies and systems
- Are taking a centralized, vendor-neutral approach to:
 - Performing technical work that enables person-centered care
 - Testing and certifying devices and systems
 - Promoting adoption of scalable solutions
 - Turning data into meaningful information at the point of care
- Have highly ambitious, industry revolutionary goals

Appendix A

Environmental Scan – Attributes of Successful HIEs

Chesapeake Regional Information System for our Patients (“CRISP”)

- Maryland’s designated statewide HIE, primarily serving MD, WV, and the Washington D.C. regions. Connected to acute care facilities, LTCs, rad/lab facilities and ambulatory practices. A member of Carequality.
- A centralized and federated hybrid HIE whose services include:
 - Traditional HIE: HIE portal, Encounter Notification Services (ADT notification)
 - Analytics: CAIiPHR (quality measure reporting), Data Visualization (Tableau)
 - API enabled point-of-care data access (in-house developed): “In-Context Alerts”
- Benefit from federal and state grants
- Participation fees are only charged to acute facilities
- Almost 100% coverage for Maryland’s hospitals (mandated ADT data submission as a minimum)
- Connected to ~80% ambulatory practices in some fashion (the newer API-enabled services adoption still fairly low)
- Have experience working with various EHR vendors, particularly Epic and Cerner

Appendix B

HIE Current State Analysis



It's your story. We're listening.

Appendix B

HIE Current State Analysis – Overview

- The national state of healthcare interoperability is improving but remains immature
 - Advancement in technology make it easier to share information real time, at the point of care
 - Recently introduced laws require interoperability
 - Some models of sustainable HIEs have emerged
 - Obstacles of competing interests, costs, and perceived value still exist
- Healthcare organization interoperability within Ballad Health’s market is no exception
 - Complex and confusing array of regionally aligned organizations/ services and frameworks
 - Most services/ frameworks are geared towards larger health delivery networks/ organizations
 - Options remain cost and technically prohibitive for small, independent practices, limiting value and their participation

Appendix B

HIE Current State Analysis – HIE Capability in the Ballad Health Service Area

HIE Approach	Epic – Community Connect	Epic – Care Everywhere (Epic-to-Epic)*	Epic – EpicCare Link	Epic – Share Everywhere
Overview	Epic system extension with a shared community record . Deepest degree of interoperability, but external providers need to install Ballad Health's Epic instance and pay ongoing maintenance fees	Epic's interoperability application that can be used to exchange patient data with other healthcare organizations using Epic .	Provides read-only access to approved providers via portal. Can support referral, secure messages. Free to external providers of interest.	Allows patients to grant view-only access to any providers who have internet access. The provider granted access can send a progress note back.
Exchange Approach	<ul style="list-style-type: none"> • Centralized • Same Platform 	<ul style="list-style-type: none"> • Federated • Bi-directional 	<ul style="list-style-type: none"> • Centralized • Outgoing Only 	<ul style="list-style-type: none"> • Centralized • Outgoing Only
Degree of Workflow Integration	5 - Same Platform	4 - Push/Auto Query	1 - Portal/Mail Box	2 - Pull
Degree of Data Exchange	5 - Very High	4 - High	5 - Very High	2 - Moderate

* Data exchange via Carequality, eHealth Exchange and MedAllies that enables Epic to non-Epic exchange is managed through Care Everywhere platform at Ballad Health. However, these HIE approaches are listed separately in later slides.

Appendix B

HIE Current State Analysis – HIE Capability in the Ballad Health Service Area (Cont.)

HIE Approach	Carequality*	eHealth Exchange*	ConnectVirginia ("EXCHANGE")	MedVirginia
Overview	A network-to-network trust framework with participants such as EHR vendor networks, payer networks, lab networks, etc. An organization needs to "opt-in" for Carequality before data exchange. Epic network is in Carequality.	A network with federal (incl. VA, DOD, SSA) and non-federal (e.g. health system) participants. Mainly meant for larger orgs. Commonly used to connect with federal entities. One-to-one set up and testing is required between two participants that wish to exchange data.	ConnectVirginia's service to provide the trust and legal framework for organizations to join the eHealth Exchange network.	Primarily enabled thru eHealth Exchange. Special interests in life insurance. Independent Providers only have portal access and don't contribute data. No member in Ballad Health GSA. In network for Carequality.
Exchange Approach	<ul style="list-style-type: none"> Federated Bi-directional 	<ul style="list-style-type: none"> Federated Bi-directional 	<ul style="list-style-type: none"> Federated Bi-directional 	<ul style="list-style-type: none"> Federated Bi-directional (Health Systems) / View Only (Providers)
Degree of Workflow Integration	4 - Push/Auto Query	4 - Push/Auto Query	4 - Push/Auto Query	2 - Pull
Degree of Data Exchange	2 - Moderate	2 - Moderate	2 - Moderate	2 - Moderate

* Not an Epic product, but managed through Care Everywhere platform at Ballad Health.

Appendix B

HIE Current State Analysis – HIE Capability in the Ballad Health Service Area (Cont.)

HIE Approach	etHIN	OnePartner	SHIEC Patient Centered Data Home	MedAllies*
Overview	East TN HIE. Can provide auto-query , longitudinal medical record and ADT alerting service. Likely low coverage (~5%) within Ballad Health GSA currently. In network for SHIEC PCDH and eHealth Exchange.	Tri-cities local HIE. Ballad Health has an outgoing interface to this HIE. Can provide point-of-care alert. In network for SHIEC PCDH and joining eHealth Exchange.	A method of data exchange among HIEs. Alert-initiated. Longitudinal patient record in "home" HIE. Break the walls among states. Members in TN include etHIN & OnePartner, none for VA.	A secure mailbox service. Use Direct messaging. Currently used at Ballad Health to send patient's CCD to patient's PCP after discharge.
Exchange Approach	<ul style="list-style-type: none"> • Centralized • Bi-directional 	<ul style="list-style-type: none"> • Centralized • Bi-directional 	<ul style="list-style-type: none"> • Federated • Bi-directional 	<ul style="list-style-type: none"> • Federated • Bi-directional
Degree of Workflow Integration	4 - Push/Auto Query	3 - Auto Alert, then Pull	3 - Auto Alert, then Pull	1 - Portal/Mail Box
Degree of Data Exchange	3 - Fairly High	3 - Fairly High	3 - Fairly High	2 - Moderate

* Not an Epic product, but managed through Care Everywhere platform at Ballad Health.

Appendix B

HIE Current State Analysis – HIE Capability in the Ballad Health Service Area (Cont.)

Regulatory Initiative	General Information	Information Exchanged
Commonwealth's Prescription Drug Monitoring Program	<ul style="list-style-type: none"> Collects prescription data into a central database which can then be used by limited authorized users to assist in deterring the illegitimate use of prescription drugs. 	<ul style="list-style-type: none"> Prescription
State Dept of Health Reporting - Electronic Laboratory Reporting (VA)	<ul style="list-style-type: none"> Provides VA automated transmission of reportable laboratory findings to state and local public health departments. 	<ul style="list-style-type: none"> Lab results
State Dept of Health Reporting - Immunization (TN & VA)	<ul style="list-style-type: none"> Provides TN and VA state registries with documented vaccinations. 	<ul style="list-style-type: none"> Immunization
State Department of Health Reporting - Syndromic Surveillance (TN & VA)	<ul style="list-style-type: none"> Provides TN and VA a review of patient demographic data (names, diagnoses, medications, etc.) from Emergency Department and Inpatient encounters. 	<ul style="list-style-type: none"> Patient Demographics
Tennessee Hospital Association	<ul style="list-style-type: none"> Health Information Exchange for TennCare. THA coordinates its members feeds then deliver to TennCare. Enabled through custom interface. Required for membership in THA. 	<ul style="list-style-type: none"> ADT
ConnectVirginia's Emergency Department Care Coordination Program	<ul style="list-style-type: none"> Virginia Emergency Department Care Coordination Program. Enabled through custom interface with Collective Medical. 	<ul style="list-style-type: none"> Outgoing ADT Incoming documentation

Health Research and Graduate Medical Education Three-Year Plans for the Commonwealth of Virginia

January 29, 2019



It's your story. We're listening.

Disclaimer

This work represents a specific response to the details and requirements as listed in the January 12, 2018 letter from the Health Commissioner of the Commonwealth of Virginia and Paragraphs 24 and 25 of the Cooperative Agreement. As such the items mentioned in this plan are intended to be the groundwork for the efforts Ballad Health and the members of the academic and research community of Southwest Virginia and Tennessee (collectively known as the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)) commit to undertake. The elements of this document are not intended to limit or presume the work of the TVRHSC that is yet to occur. Where examples are used, they are intended to be illustrative in nature, unless otherwise specified, and not to indicate the sole scope or direction of the work of the TVRHSC. This document is the result of many hours of work on the part of the majority of academic and research institutions across east Tennessee and Southwest Virginia in addition to Ballad Health. We appreciate all of the thoughtfulness and dedication it has taken to assemble this response.

Introduction

- Pursuant to the January 12, 2018 letter from the Health Commissioner of the Commonwealth and Paragraphs 24 and 25 of the Cooperative Agreement (CA), the Commonwealth requested the submission of draft versions of the Health Research (HR) Plan and Graduate Medical Education (GME) Plan by November 30, 2018. The Plans are due in final form by January 31, 2019.
- Given that the spending requirements for the HR and GME plans are combined in the CA, Ballad Health combined the plans (as described in Paragraphs 24 and 25 of the CA) into a single document.
- The content of these plans is consistent with requirements as outlined in Cooperative Agreement, conditions 23-25 and represents those actions to be taken by Ballad Health deemed by the Commonwealth of Virginia to constitute public benefit.

Definition of Terms

- Consortium
 - In this document that term refers to the collection of the members of the Coordinating Council and the Research Council and the Education and Training Council.
- Health Professions Education (HPE)
 - The Cooperative Agreement has utilized “Health Research and Graduate Medical Education” as the title of this effort. Based on the identified needs of the region and public health benefit aims outlined in the Cooperative Agreement, we intend to be more inclusive of the research and academic needs of the region. **“Health Professions Education” includes, but is not limited to,** Graduate Medical Education (GME); Nursing; Dentistry; Optometry; Undergraduate Medical Education (UME); Public Health; Physical Therapy; Allied Health; and other professions. Parts of this plan are specific to certain disciplines, but are discussed with the knowledge that they are not the exclusive focus in the work of this plan.

Definition of Terms

- Undergraduate Medical Education (UME)
 - Those activities related to Allopathic and Osteopathic (MD and DO) medical school education. In this document UME refers to all related activities of medical students.
- Graduate Medical Education (GME)
 - Those activities related to Allopathic and Osteopathic (MD and DO) education. In this document GME refers to all related activities of Medical and Surgical residents.

VA CA HR/GME Requirements

VA CA Requirement: Condition 24

1. Develop plan collaboratively with key Virginia stakeholders
2. Effectively address the access, quality, and population health goals of the Authority's Blueprint for Health Improvement & Health-Enabled Prosperity
3. Establish an appropriate structure for an ongoing academic collaborative
4. Set forth how training Virginia, deployed based on an evidence-based assessment of needs, clinical capacity, and program availability will be developed
5. Set forth how a new community-based, rural training track, primary-care residency, or preventative medicine residency in Virginia will be established
6. Set forth how community psychiatry rotations in southwest Virginia will be established in collaboration with existing psychiatry residency programs
7. Set forth how incentives for clinical employees to pursue clinical degrees will be developed through such mechanisms as, for example, loan forgiveness, clinical rotation sites, clinical hours, and preceptorship
8. Include a methodology for allocation of funds between Virginia and Tennessee

VA CA HR/GME Requirements

VA CA Requirement: Condition 25

1. Develop plan collaboratively with key Virginia stakeholders
2. Effectively address the access, quality, and population health goals of the Authority's Blueprint for Health Improvement & Health-Enabled Prosperity and contain metrics that will be periodically to determine if the goals are met
3. Establish an appropriate structure for an ongoing academic collaborative
4. Include a methodology for allocation of funds between Virginia and Tennessee
5. Include appropriate evidence-based criteria pursuant to which research funding made available as a result of the cooperative agreement will be deployed in Virginia based on community needs, matching opportunities, economic return to the region, and overall competitiveness of the research proposals.

Spending Requirements

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Total:
Expanded Access to HealthCare Services	Behavioral Health Services	\$ 1,000,000	\$ 4,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 85,000,000
	Children's Services	\$ 1,000,000	\$ 2,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 27,000,000
	Rural Health Services	\$ 1,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 3,000,000	\$ 28,000,000
Health Research and Graduate Medical Education		\$ 3,000,000	\$ 5,000,000	\$ 7,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 85,000,000
Population Health Improvement		\$ 1,000,000	\$ 2,000,000	\$ 5,000,000	\$ 7,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 10,000,000	\$ 75,000,000
Region-wide Health Information Exchange		\$ 1,000,000	\$ 1,000,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 750,000	\$ 8,000,000
Total:		\$ 8,000,000	\$ 17,000,000	\$ 28,750,000	\$ 33,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 36,750,000	\$ 308,000,000

- The Commonwealth requested information regarding the “methodology for allocation of funds between Tennessee and Virginia” for the Health Research and Graduate Medical Education Plans
 - Investments and expenditures specific and unique to Virginia geographies or Virginia residents will be allocated 100% as a “Virginia Expenditure”
 - For investments and expenditures that are not specific or unique to Virginia (i.e., system-level investments, infrastructure investments, investment in specialists serving multiple geographies, etc.), the following allocation methodologies will be considered in order to determine what portion of the investment or expenditure is identified as a “Virginia Expenditure”
 - Demographic allocation – Virginia population served (or total Virginia service area population) as a percentage of the total population served (or total service area population served)
 - Utilization allocation – Utilization of defined service (or services) by Virginia residents as a percentage of the total utilization
 - Ad Hoc/Judgment – When neither of the allocation methodologies described above are applicable, Ballard Health will devise an appropriate ad hoc methodology, or use professional judgment, which could include Consortium input, to allocate funding

Important Dates

Plans Due in First Twelve Months (January 31, 2019)

- Health Information Exchange (HIE) Plan
- Health Research/Graduate Medical Education (HR/GME Plan)

** Consistent with The Commonwealth of Virginia Department of Health request, Ballad Health previously submitted a draft version of the HIE plan on November 30, 2018 and provided a copy to the State of Tennessee. This document presents the final version of that plan.*

Process for Plan Development

Initiate

- Engaged Resources and External Consultants
- Named Executive Steering Team

Plan

- Gathered Internal and External Stakeholder Input
- Developed Initial Plans and Discussed Galvanizing Strategies

Review

- Received feedback from Internal and External Stakeholders
- Provide Tennessee Department of Health (TDH) with Draft Plans Submitted to Virginia Department of Health (VDH)
- Review Draft Plans with VDH and TDH

Finalize

- Incorporate VDH/TDH and Stakeholder Feedback
- Finalize Investment Schedules
- Submit Final Plans to VDH/TDH
- Make final revisions with State Input during 30 day state review and 30 day Ballad Health response period
- Obtain Ballad Health Board Approval

Process and Participation for Plan Development

In developing this plan, Ballad Health has referenced previously developed regional plans and analyses and solicited extensive consortium stakeholder feedback from Virginia and Tennessee including:

- Reviewed the following documents and plans:
 - Key Priorities for Improving Health in Northeast Tennessee and Southwest Virginia: A Comprehensive Community Report ¹
 - SW VA Health Authority (SVHA) Blueprint²
 - A Review of The Commonwealth of Virginia Application for a Letter Authorizing a Cooperative Agreement³
- Conducted approximately 50 individual and group consortium interviews
- Held several meetings with Virginia and Tennessee regional external groups, including members of the Southwest Virginia Health Authority

¹ Report Published by the East Tennessee State University College of Public Health

² Report Published by the Southwest Virginia Health Authority

³ Report Published by the Southwest Virginia Health Authority

Process and Participation for Plan Development

Collaborating Partners

- East Tennessee State University
- Emory & Henry College
- Northeast State Community College
- Southwest VA Higher Ed Center
- Lincoln Memorial University
- Milligan College
- James H. Quillen VA Medical Center
- University of Virginia- Wise
- Gatton College of Pharmacy
- Appalachian School of Pharmacy
- Virginia Highlands Community College
- Tusculum College
- King University
- Walters State Community College
- Lees-McRae College
- Mountain Empire Community College
- Graduate Medical Education Consortium of SWVA
- Southwest Virginia Community College
- Area Health Education Center 21
- Southwest Virginia Health Authority
- Virginia College of Medicine

Note: Not all of the partners listed above have participated to this point in the process. However, all will be contacted as the Plan is finalized.

Table of Contents for HR/GME Plan

1. Plan Overview

- Virginia Cooperative Agreement Requirements
- Key Metrics Addressed
- Key Strategies
- Crosswalk to Conditions
- Investment Plan

2. Strategic Approach

3. Implementation Roadmap

Health Research (HR) & Graduate Medical Education (GME)

1. Plan Overview



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Plan Overview

HR/GME Plan Key Metrics Over 3-Year Performance Period

Health Research ¹

- A summary of all active academic partnerships along with a description of:
 - Research topics
 - A listing of the entities engaged in research
 - The principal researcher(s) who is/are responsible for each project
 - Grant money applied for or expected
 - Anticipated expenditures
- A report on the outcome of previously reported research projects including references to any published results

Health Education ¹

- A summary containing the number of accredited resident positions for each residency program in the Geographic Service Area, also including the number of such positions that are filled

In addition to the required metrics above, Ballad Health will also track, for example:

- Matching dollars from sources external to Ballad Health for both Health Research and Health Education
- Metrics associated with other specific programs, research grants, etc., as required (i.e. REACH)

¹ Per Tennessee COPA section 6.04(d). The Virginia CA did not present similar specific reporting metrics beyond the requirements for plan approval presented in Conditions 24 and 25

Context for Strategies Presented

- ***The region has academic and healthcare capacity*** to perform funded clinical trials, program evaluation, and basic science and translative research, ***but it is underperforming.***
- A successful regional effort ***requires the development of a “research ecosystem”*** which provides ***comprehensive support to researchers, students, and entrepreneurs.***
- The rural nature of the region, ***with fragmented academic capacity and distance from traditional funders*** works against us.
- Ballad’s merger, ***which brings 1 million patient records in the region under a common data platform, aggregates significant healthcare and academic capacity, and provides a common approach to a region of unique demographics that make up the region,*** provides an opportunity to increase our regional performance.

Plan Overview

Strategies for the 3-Year HR/GME

Strategies that Serve Both Health Research and Education

Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

Strategy #2: Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth

Strategies that Serve Health Research

Strategy #3: Develop & Operationalize Consortium Research Infrastructure to Support Health Research in the Region

Strategies that Serve Health Professions Education

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

Plan Overview

Strategies Related to VA Cooperative Agreement HR/GME Requirements

VA CA Requirement: Condition 24	1. Establish Consortium	2. Targeted Hiring Needs	3. Research Structure	4. Education Structure
1. Develop plan collaboratively with key Virginia stakeholders	Y	Y	Y	Y
2. Effectively address the access, quality, and population health goals of the Authority's Blueprint for Health Improvement & Health-Enabled Prosperity		Y	Y	Y
3. Establish an appropriate structure for an ongoing academic collaborative	Y		Y	Y
4. Set forth how training Virginia, deployed based on an evidence-based assessment of needs, clinical capacity, and program availability will be developed	Y	Y		Y
5. Set forth how a new community-based, rural training track, primary-care residency, or preventative medicine residency in Virginia will be established	Y	Y		Y
6. Set forth how community psychiatry rotations in southwest Virginia will be established in collaboration with existing psychiatry residency programs	Y	Y		Y
7. Set forth how incentives for clinical employees to pursue clinical degrees will be developed through such mechanisms as, for example, loan forgiveness, clinical rotation sites, clinical hours, and preceptorship		Y		Y
8. Include a methodology for allocation of funds between Virginia and Tennessee	Y			

Plan Overview

Strategies Related to VA Cooperative Agreement HR/GME Requirements

VA CA Requirement: Condition 25	1. Establish Consortium	2. Targeted Hiring Needs	3. Research Structure	4. Education Structure
1. Develop plan collaboratively with key Virginia stakeholders	Y	Y	Y	Y
2. Effectively address the access, quality, and population health goals of the Authority's Blueprint for Health Improvement & Health-Enabled Prosperity and contain metrics that will be periodically to determine if the goals are met		Y	Y	Y
3. Establish an appropriate structure for an ongoing academic collaborative	Y		Y	Y
4. Include a methodology for allocation of funds between Virginia and Tennessee	Y			
5. Include appropriate evidence-based criteria pursuant to which research funding made available as a result of the cooperative agreement will be deployed in Virginia based on community needs, matching opportunities, economic return to the region, and overall competitiveness of the research proposals.			Y	

Plan Overview

VA CA HR/GME Plan Estimated Investment Summary

HR/GME Plan	FY2020	FY2021	FY2022	Year 1-3 Total
Amounts Associated with Projects Already Committed to by Ballad Health - Associated with HR/GME Plan Activities ¹	\$907,000	\$1,402,680	\$1,799,860	\$4,109,540
Mandated Minimum Expenditures	\$3,000,000	\$5,000,000	\$7,000,000	\$15,000,000
Amounts Available for Investment in Strategies Presented in the Plan	\$2,093,000	\$3,597,320	\$5,200,140	\$10,890,460
Preliminary Budget for Strategies Presented in Plan ²				
#1 Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)	\$401,000	\$460,000	\$473,000	\$1,334,000
#2 Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth	\$860,000	\$1,010,000	\$1,535,000	\$3,405,000
#3 Develop & Operationalize Consortium Research Infrastructure to Support Health Research in the Region	\$333,000	\$1,099,000	\$1,450,000	\$2,882,000
#4 Develop & Operationalize an Education and Training Infrastructure to Support the Region	\$815,000	\$1,365,000	\$1,105,000	\$3,285,000

¹ Includes investments committed to for the following: REACH, Pediatric Residencies, Addiction Fellowship, Population Health Plan Program Evaluation, and Dental Residency

² Activities related to each strategy presented in the HR/GME Plan. For purposes of presentation, Ballad Health estimated amounts associated with each tactic. However, it is understood that final planning and tactical recommendations, including financial investments necessary, will be calculated by Ballad Health and/or requested by the Consortium, as applicable.

Health Research (HR) & Graduate Medical Education (GME)

2. Strategic Approach



It's your story. We're listening.

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Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

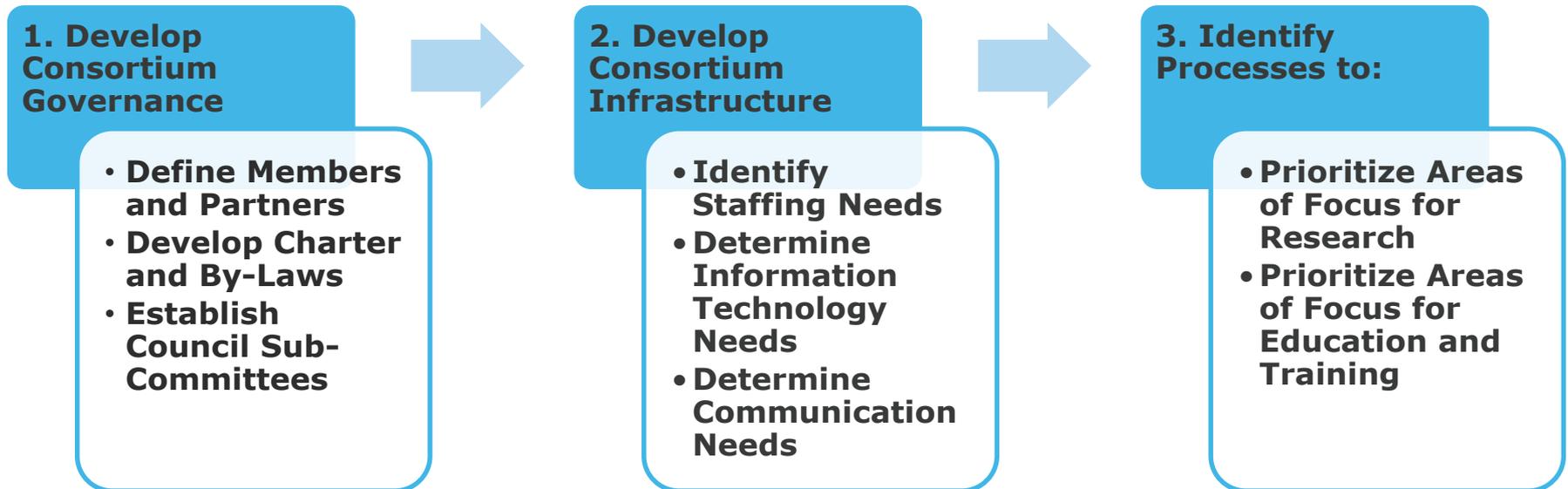
As a rural area where research and health academic capacity is dispersed across a large geography and number of competitive institutions, a consortium would:

- Promote better communication regarding needs and opportunities***
- Create a platform to bring focus to research and training capacity***
- Improve the region's ability to compete for funded research and build strong training programs.***

Based on feedback received from key stakeholders:

- Consensus exists that the region is underperforming in attracting research dollars, due in part to fragmentation and lack of focus
- Unique demographics, education, and healthcare capacity make the region attractive to potential funders if properly organized
- The region has difficulty attracting healthcare professionals
- There is need for coordination of student placements in sub-acute and acute settings
- Opportunity exists for a regional process to assess, identify, and address gaps in key training programs, and to evaluate the creation of new training programs

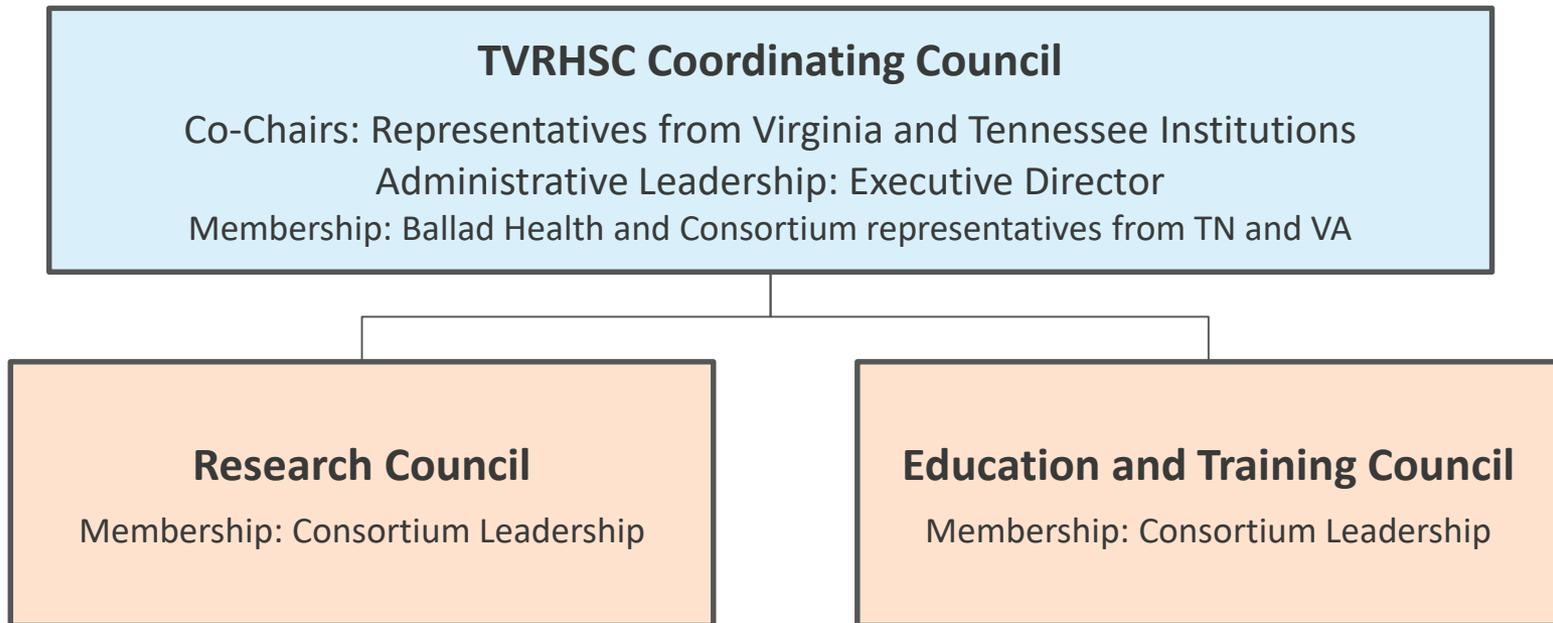
Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)



Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

1. Develop Consortium Governance

The establishment of a Coordinating Council, and the establishment of at least two subject-matter specific councils with oversight of Education and Training, and Research.



Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

1. Develop Consortium Governance (*Continued*):

- Define Consortium Members and Partners
 - *Consortium Members*: defined regional academic institutions
 - *Consortium Partners*: defined community-based stakeholders, regional employers and community groups
- Develop a Charter and By-Laws for the Consortium
 - Develop Mission and Vision for the Consortium
 - Establish processes, roles, and responsibilities
 - Develop process and criteria for fund allocation between VA and TN
- Establish Council Subcommittees as defined by the Education and Training Council as well as the Research Council to afford greater input and participation on TVRHSC initiatives.

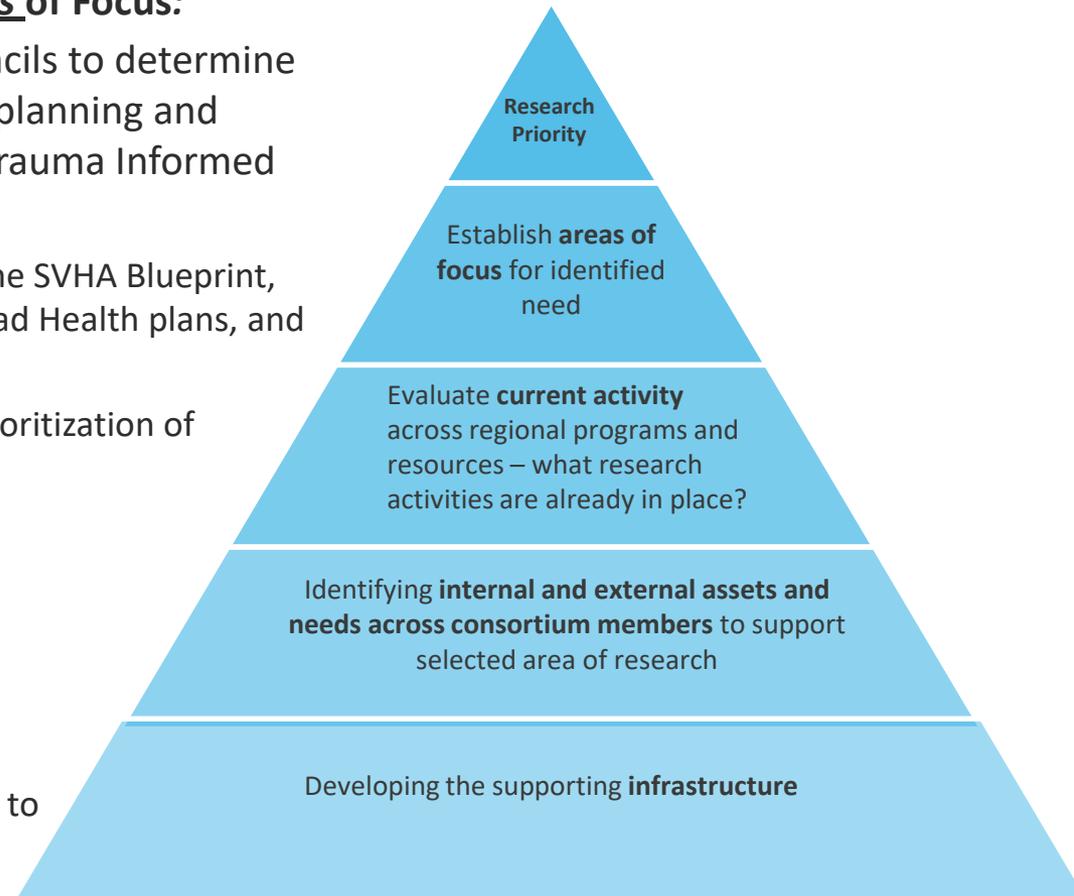
2. Develop Consortium Infrastructure:

- Identification of needed/dedicated staff to manage the operations of the consortium
 - Dedicated staff to support consortium activities and manage member requests, including creation/management of databases and communication channels

Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

3. Identify Process to Prioritize Research Areas of Focus:

- Utilize the Coordinating and Research Councils to determine priority research areas of focus for further planning and consideration in the region (For example: Trauma Informed Care; Addiction)
 - Leveraging the regional priorities outlined in the SVHA Blueprint, Comprehensive Community Report, other Ballad Health plans, and other Accountable Care Community priorities.
 - Develop evidence-based criteria to assist in prioritization of opportunities.
 - Examples of such criteria could include: community needs; matching opportunities; economic return to the region; and overall competitiveness of the research proposals
- Establish process for implementation of research plans
 - Individual consortium members decide “how” to participate in prioritized research focus areas (financial support, in-kind support, other supportive services, do not participate)
 - This graphic illustrates a possible process for implementation

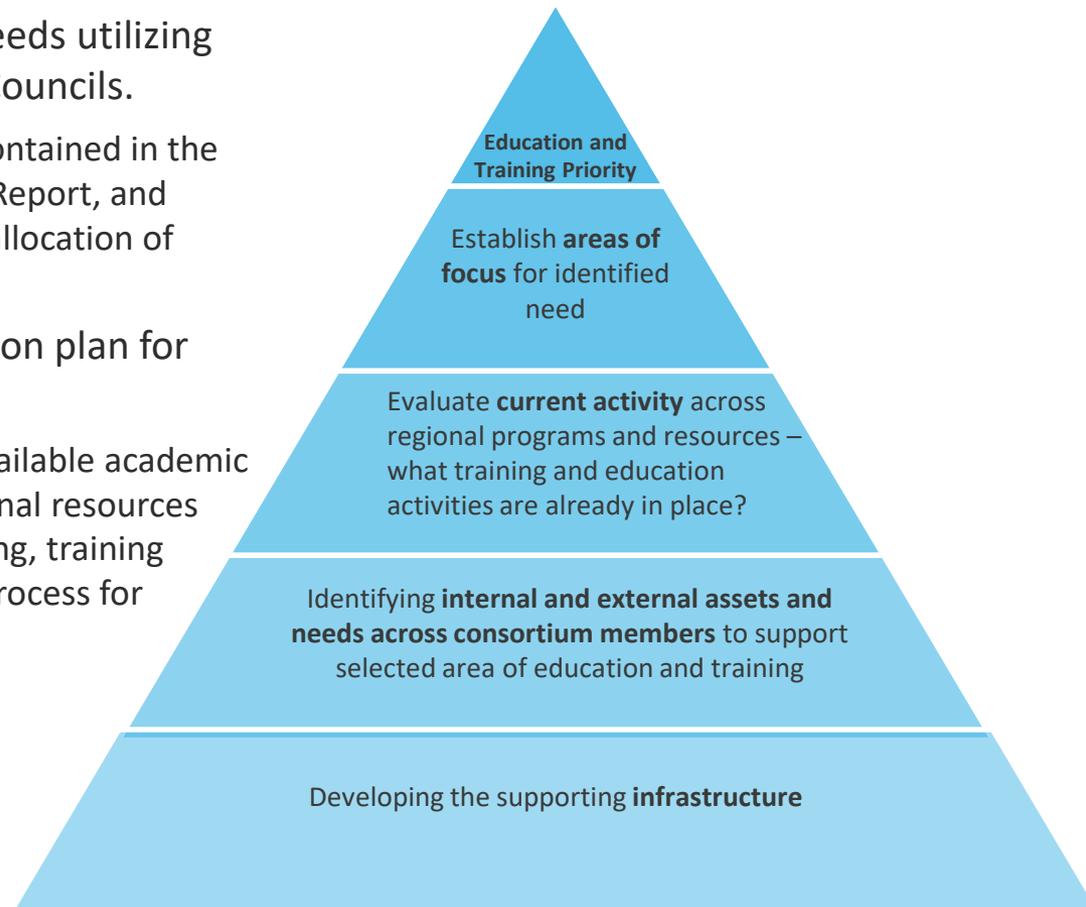


Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

4. Identify Process to Prioritize Education and Training

Areas of Focus:

- Evaluate priority education and training needs utilizing the Coordinating and Education/Training Councils.
- Utilizing and building upon the information contained in the SVHA Blueprint, Comprehensive Community Report, and other regional work, priorities will be set for allocation of funds and resources
- Establish process to develop implementation plan for training and education
- Develop a consistent approach to evaluate available academic and community resources, identifying additional resources needed to initiate new, and/or improve existing, training programs. This graphic illustrates a possible process for implementation.



Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

5. Develop regional resources for sharing of knowledge

- **Build upon/support current Southwest Virginia GMEC conference**
- **Establish regional symposium**
 - Highlight research completed
 - Professional development
 - Exchange of ideas
- **Explore potential for inter-institutional professional development**
 - Site visits
 - Collaboration and shared resources and equipment

Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

Potential Barriers to Success

- Challenges in engaging regional partners
- Time required to establish fully functional consortium

Potential Mitigation Tactics

- Communicate early and often to begin the process of engaging regional partners. Ensure clear and transparent communication
- Develop a clear timeline for establishing the consortium and ensure incremental progress is made to begin addressing needs of the region as consortium and its components are developed

Plan Overview

Strategies for the 3-Year HR/GME

Strategies that Serve Both Health Research and Education

Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

Strategy #2: Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth

Strategies that Serve Health Research

Strategy #3: Develop & Operationalize Consortium Research Infrastructure to Support Health Research in the Region

Strategies that Serve Health Professions Education

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

Strategy #2: Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth

As a rural area where research and academic capacity is dispersed across a large geography and number of competitive institutions, a consortium focus on targeted hiring would:

- Determine recruitment needs for new talent and funding to the region to fill existing gaps, advance faculty diversity, and enrich research and mentoring opportunities***
- Would promote a research-focused climate and support health education***
- Raise brand awareness for the region***

Based on feedback received from key stakeholders:

- Consensus exists there is an opportunity to fill gaps in health research, health education and direct patient care through key individual or cluster hires
- There is a need to support healthcare professionals through mentorship opportunities, career development, and research opportunities
- There is a need for community development and increased potential for local students to be exposed to the broad range of healthcare employment opportunities

Strategy #2: Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth

- 1. Collaborate with regional partners to complete workforce analyses**
- 2. Develop process for selecting and prioritizing targeted hires based on the analysis and the healthcare needs of the region.**
 - Selection and prioritization should take into consideration:
 - The key regional health needs
 - The current supply gaps of health professionals and expertise
 - The infrastructure to train the spectrum of health professionals required
 - For example, a hire can occur when there is an unmet need given the current health professionals AND there is no immediate or short-term possibility of fulfilling this need by training candidates in existing academic programs
- 3. Recruit experienced Researchers and Educators**
 - Identify mechanisms for targeted faculty hires to hold joint appointments across academic programs
 - Establish infrastructure to support interdisciplinary collaboration for these hires

Strategy #2: Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth

Potential Barriers to Success

- Challenges in attracting talent to the region

Potential Mitigation Tactics

- Support marketing efforts to highlight assets within the region
- Continue pursuing the development of talent within the region

Plan Overview

Strategies for the 3-Year HR/GME

Strategies that Serve Both Health Research and Education

Strategy #1: Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)

Strategy #2: Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth

Strategies that Serve Health Research

Strategy #3: *Develop & Operationalize Consortium Research Infrastructure to Support Health Research in the Region*

Strategies that Serve Health Professions Education

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

Strategy #3: Develop & Operationalize Infrastructure to Support Health Research in the Region

As a rural area where research capacity is dispersed across a large geography and number of competitive institutions, an aligned health research infrastructure - whether developed through the consortium, within Ballad Health, or within other regional partners - would:

- Provide a mechanism for decision-making when there are competing investment priorities***
- Build upon existing institutional research efforts and allow for regional collaboration***
- Increases visibility and influence of the region to attract and retain established research investigators, thus enhancing the research culture of the region***

Based on feedback received from key stakeholders:

- This could strengthen capabilities to translate research ideas into externally funded research grants and contracts awards
- Attract industry research sponsors to the region in key population health priority areas
- Increase visibility and influence of the region to attract and retain established research investigators
- Allow for economies of scale and controls to maximize expenditure efficiencies

Strategy #3: Develop & Operationalize Infrastructure to Support Health Research in the Region

1. Establish programmatic goals by leveraging previous studies

- For example, build upon the areas of focus for research as developed in the Key Priorities for Improving Health in Northeast Tennessee and Southwest Virginia: A Comprehensive Community Report ¹
 - Including, but not limited to, CVD/Stroke, Obesity, Childhood Obesity, Diabetes, Substance Abuse, and mental health
- Align with the priorities of the Accountable Care Community, which include Strong Starts, Strong Youth, Strong Teens and Strong Families
- Potential for creation of broad-based research support
 - Wealth of regional population data may be used to attract federal, state, foundational, industry funding and rural health academic collaborators and leading researchers

2. Evaluate existing research assets leveraging the Research Council

- Establish Research infrastructure spanning the region
 - For example, consider creation of a common Institutional Review Board, regional data repositories, and research informatics
 - Seek to enhance the efforts that are currently operating in local institutions and helping to coordinate across the region

¹ Report Published by the East Tennessee State University College of Public Health

Strategy #3: Develop & Operationalize Infrastructure to Support Health Research in the Region

2. Evaluate existing research assets leveraging the Research Council (continued)

- Collaborate with partner institutions for research in all aspects of healthcare in the region.
 - Align current and future projects in clinical trials, translational, and bench research activities amongst physicians, nurses, and allied health professionals.
 - Current efforts include examples like the *Obesity Center* at Emory and Henry, the *Healthy Appalachia Institute* at UVA-Wise, and the *Tennessee Public Health Training Center* at ETSU.
- Expanding the reach and capability of the region’s collection of individual institutions and working together for a common goal of betterment for all
 - For example, affiliate with regional research efforts such as the *Opioid Research Consortium of Central Appalachia (ORCA)* ¹

3. Evaluate measures and outcomes in other Ballad Health COPA/CA plans

- For example, funding set aside in support of outcomes measurement for the Population Health plan.

¹ Participants include Virginia Tech (Kimberly Horn, PI) and ETSU (Rob Pack, Co-PI), with letters of support from West Virginia University, Marshall University, University of Kentucky, Carilion Healthcare, Ballad Health, and others.

Strategy #3: Develop & Operationalize Infrastructure to Support Health Research in the Region

Potential Barriers to Success

- Challenges in engaging regional partners
- Ensuring proposed goals remain manageable given current regional challenges
- Challenges in attracting talent supporting operational goals

Potential Mitigation Tactics

- Develop and execute on a Communication Plan, to ensure clear, transparent and regular communication when engaging regional partners
- Develop a clear criteria for the allocation of resources as well as adjudication/escalation planning should there be challenges in reaching consensus
- The Consortium should ensure clear scope and objectives for projects undertaken and establish measurements of success
- Support marketing efforts to highlight assets within the region
- Continue pursuing the development of local talent within the region

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Strategies for the 3-Year HR/GME

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Strategies that Serve Health Professions Education

Strategy #4: *Develop and Operationalize an Education and Training Infrastructure to Support the Region*

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

As a rural area where academic capacity is dispersed across a large geography and number of competitive institutions, an aligned education and training infrastructure – whether developed through the consortium, within Ballad Health, or within other regional partners - would:

- Improve local access to high quality care by anticipating future workforce development needs Physicians, Nurse Practitioners, Physician Assistants, Nurses, Allied Health, and other professionals***
- Align community workforce needs with educational programs, students, and graduates***
- Encourage/incentivize Health Professions Education graduates to stay in the region by creating a coordinated regional approach to connect local talent with academic and industry opportunities***
- Collaborate to develop innovative program opportunities to create and establish new nursing and allied health programs and to increase enrollment in these programs where regional shortages in health care resources exist.***

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

Based on feedback received from key stakeholders - There is an opportunity to create a mechanism within the region to promote awareness of health careers and facilitate entry into health professions and career progression.



¹ Quotes obtained from interviews conducted with regional partners by consultants

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

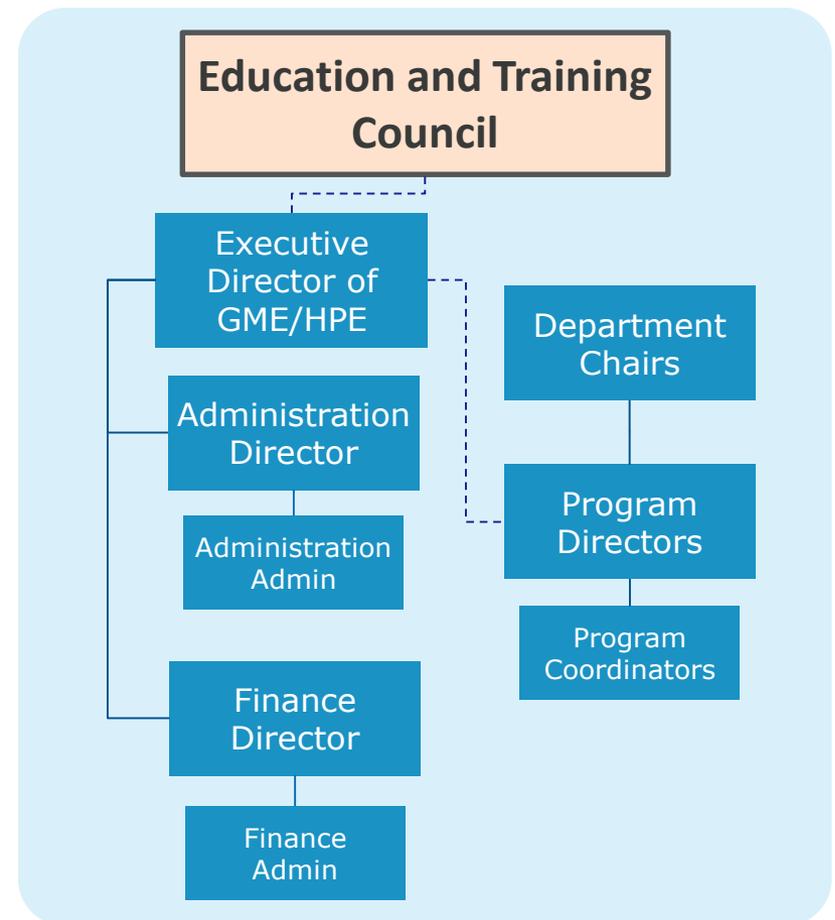
- 1. Leveraging areas of focus identified in the Key Priorities for Improving Health in Northeast Tennessee and Southwest Virginia: A Comprehensive Community Report ¹, to collaborate with regional partners to establish health education goals**
- 2. Inventory existing assets and resources within the region**
 - Partner with Rural Health Services Plan and complete an analysis of undergraduate and graduate health education programs utilizing Ballad Health for training (Nursing, Allied Health, Public Health, Healthcare Administration, and UME/GME). Compare against workforce needs to find alignment and gaps
- 3. Facilitate collaboration between The Rural Health Services Plan, VA Area Health Education Centers (AHEC) and other regional workforce development initiatives to identify needed health professions and allied health education to meet the future needs of the region**
 - Coordinate with regional businesses and industry to determine workforce needs
 - Work to align vocational programs, community colleges, and 4-year colleges to fill workforce gaps

¹ Report Published by the East Tennessee State University College of Public Health

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

4. Establish a GME/Health Professions Education (HPE) office within Ballad Health to improve coordination of educational activities that utilize Ballad Health resources

- Ensure appropriate leadership and administrative support
- Establish organizational alignment and Support across existing and new Health Professions Education programs across TN and VA
- Training slots/rotations and faculty within the Ballad Health system are limited, and there is an opportunity to better coordinate slot/rotation access between rural and non-rural tracks



Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

- 5. Work with the Education and Training Council to establish program management and staffing requirements and hire program management and support staff (e.g., Director, Facilitators, Counselors)**
- 6. Partner with regional academic partners to develop strategies for promoting the development of additional, or absent, regional nursing and allied health professional training programs to address health care workforce needs**
 - Develop and implement innovative training programs to increase enrollment to address the regional nursing shortage
 - Develop and implement allied health programs to address regional needs
 - Evaluate the opportunity to implement a Medical Technology program in the region as no program currently exists
 - Collaborate to increase enrollment in existing Scrub Technician and related procedural Technician academic programs where annual graduates are not meeting the regional clinical resource needs

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

7. Identify and adopt a commercial technology platform aggregating disparate workforce supply and demand information.

- The proposal is to create a platform where prospective students can be connected with educational opportunities across the region. Further, after their education is complete, those graduates could be connected to employment opportunities across the region. This is potential for both healthcare and industry to employ and utilize. And can begin to offer hope for careers in disciplines local residents may not be aware of and opportunities that may be available locally
- Create opportunities for healthcare professionals from around the country to see what opportunities exist in our region
- Allow for planning and collaboration across the region
- Improve potential for new recruits to find employment opportunities for their spouses
- Platform could also assist in identifying and tracking evolving workforce needs
 - For example, assist in development of near and long term planning to address mental health professional shortages

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

8. Partner with state and regional academic and employment resources to develop strategies for promoting career progression for nurse and allied health professionals

- Evaluate the cost/benefit of implementing a comprehensive evidence-based incentive plan for clinical employees
- Develop career ladders for nursing and allied health professions to promote development of highly trained workforce in health careers matching needs of the region
- Complete implementation of new Ballad Health policies and programs designed to incentivize and retain health professionals

9. Establish new, community-based, rural-training track or prevention focused residency in Virginia

- Based on the needs of our region, and as mentioned in the Blueprint, we believe the area would benefit greatly from an effort to improve access to dental care. We seek to utilize the opportunity outlined within the Cooperative Agreement to address these gaps in preventative care.

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

- 10. Strengthen collaborations with existing psychiatry and mental health programs to establish rotations in the region**
 - Collaboratively develop strategies to improve access to mental health care in both Virginia and Tennessee through training programs such as REACH
 - Evaluate partnerships with Virginia-based and Tennessee-based academic programs to add psychiatry and mental health rotations in rural VA
- 11. Addiction is at epidemic levels in the region, as such, Ballad Health has partnered with ETSU to create an addiction fellowship program to serve patients in both Virginia and Tennessee**
- 12. To ensure stability in the care of the region's children, Ballad Health will fund 2 pediatric residency slots initially slated to be removed by previous sponsor**

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

13. Develop mechanisms to ensure rural residents gain access to non-rural acute care facility-based, advanced clinical rotations

- Partner with ETSU, UVA, VCOM, DCOM and others to create and expand educational opportunities within, and external to, Ballad Health

14. Develop models for retention of primary care providers

- Partner with the Southwest Virginia Health Authority and The Southwest Virginia Graduate Medical Education Consortium (GMEC) to evaluate stipends to primary care providers who commit to practice in underserved rural areas across region

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

15. Build upon existing medical training programs while ensuring no reduction in resident training slots.

- Establish allocation for new or expansion of programs through current regional partners
- Continue current programs and partnerships to improve the future healthcare workforce for the region
 - Appendix A for current allocations and expenditures

16. Investment in stipend increases for residents in both Virginia and Tennessee

- Maintain and strengthen our medical training programs

Strategy #4: Develop and Operationalize an Education and Training Infrastructure to Support the Region

Potential Barriers to Success

- Inability to launch effective technology platform
- Challenges in attracting talent to the region
- Historical friction amongst regional partners

Potential Mitigation Tactics

- Ensure alignment on the scope of the technology platform. Once confirmed, establish a clear timeline for development and implementation
- Support marketing efforts to highlight assets within the region
- Continue pursuing the development of talent within the region
- Leverage the consortium to ensure clear and transparent communication between regional partners. Establish processes to manage disagreements and conflicts. Redirect focus to the goal of improving the health of the region.

3. Implementation Roadmap

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2020

Implementation Milestones and Metrics: Q1 and Q2

Strategies	Q1 Milestones	Q1 Metrics	Q2 Milestones	Q2 Metrics
1. Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)	<ul style="list-style-type: none"> Establish Consortium Governance 	<ul style="list-style-type: none"> <i>Evidence of Roster of Coordinating Council and Health Research Council and Education and Training Council</i> <i>Finalized Governance Charter and By-laws</i> 	<ul style="list-style-type: none"> Coordinating Council has convened at least once in Q2 Council Sub-Committees & membership established Identify staffing needs Explore technology needs 	<ul style="list-style-type: none"> <i>Coordinating Council Meeting minutes</i> <i>Evidence of Roster of Council Sub-Committee Chairs and members</i> <i>Evidence of Draft Job Descriptions</i> <i>Needs assessment initiated</i>
2. Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth	<ul style="list-style-type: none"> Initiate regional workforce analysis 	<ul style="list-style-type: none"> <i>Scope and vendor selection</i> 	<ul style="list-style-type: none"> Coordinating Council review of regional workforce analysis 	<ul style="list-style-type: none"> <i>Committee minutes</i>
3. Develop & Operationalize Consortium Research Infrastructure to Support Health Research in the Region	<ul style="list-style-type: none"> Analysis of regional research infrastructure assets/gap analysis initiated 	<ul style="list-style-type: none"> <i>Draft of existing regional assets submitted</i> 	<ul style="list-style-type: none"> Draft regional research growth priorities and strategies Finalize research infrastructure plan 	<ul style="list-style-type: none"> <i>Draft Regional Research Priorities plan submitted</i> <i>Finalized Research Infrastructure Plan Submitted</i>

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2020

Implementation Milestones and Metrics: Q1 and Q2

Strategies	Q1 Milestones	Q1 Metrics	Q2 Milestones	Q2 Metrics
<p>4. Develop & Operationalize an Education and Training Infrastructure to Support the Region</p>	<ul style="list-style-type: none"> Facilitate collaboration between existing resources and regional employers Engage regional academic partners to identify key Education and Training challenges Administrative structure development of VA Dental residency program Assessment of existing Addiction programs completed Finalize organizational structure for Health Professions Education (HPE) Office 	<ul style="list-style-type: none"> <i>Inventory of existing Education and Training assets in the region</i> <i>Draft Education and Training assessment of challenges</i> <i>List of administrative activities completed for implementation of new residency</i> <i>SW VA Addiction Medicine Fellowship initial business plan developed</i> <i>Finalized HPE organizational structure</i> 	<ul style="list-style-type: none"> Begin communication with regional workforce initiatives Analysis for Education and Training program development plan completed Initiate Health Professions Graduate assessment of reasons students leave the region upon graduation Identify initial targeted recruitment Develop HPE job descriptions and begin recruitment Assessment of potential Psychiatry rotations 	<ul style="list-style-type: none"> <i>Meeting minutes indication initiation of conversation</i> <i>Draft Education and Training augmentation plan submitted</i> <i>Finalized assessment/ observations submitted, incentives contemplated</i> <i>Evidence of finalized job description and recruitment activities</i> <i>Evidence of finalized HPE job postings</i> <i>Inventory of existing and potential new rotation locations</i>

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2020

Implementation Milestones and Metrics: Q3 and Q4

Strategies	Q3 Milestones	Q3 Metrics	Q4 Milestones	Q4 Metrics
1. Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)	<ul style="list-style-type: none"> Supporting Staff & Infrastructure finalized and begin phase 1 staff recruitment Develop technology plan Research and Education/Training focus areas prioritized Develop/enhance Regional Symposium 	<ul style="list-style-type: none"> <i>Supporting Staff Organizational Chart</i> <i>Evidence of finalized job descriptions and initial recruitment activity</i> <i>Initiate technology vendor discussions</i> <i>Process for identification of priority areas produced</i> <i>Evaluation of current programs</i> 	<ul style="list-style-type: none"> Coordinating Council and Subcommittee meetings Hire Phase 1 staff and begin recruitment of phase 2 staff Technology implementation Priority focus areas identified Develop/enhance Regional Symposium 	<ul style="list-style-type: none"> <i>Committee minutes</i> <i>List/Description of Tools Developed</i> <i>Evidence of accepted phase 2 offers</i> <i>Vendor selection</i> <i>Listing of priority areas</i> <i>Dates and agenda produced</i>
2. Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth	<ul style="list-style-type: none"> Establish process for selecting/ prioritizing target hires Initiate recruitment process of Phase 1 targeted hires 	<ul style="list-style-type: none"> <i>Draft process developed for selecting/ prioritizing target hires</i> <i>Draft Job Descriptions for Phase 1 target hire(s)</i> 	<ul style="list-style-type: none"> Continue recruitment of Phase 1 target hires Begin Phase 2 of targeted hires 	<ul style="list-style-type: none"> <i>Draft Job Descriptions for Phase 2 target hire(s)</i>

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2020

Implementation Milestones and Metrics: Q3 and Q4

Strategies	Q3 Milestones	Q3 Metrics	Q4 Milestones	Q4 Metrics
3. Develop & Operationalize Consortium Research Infrastructure to Support Health Research in the Region	<ul style="list-style-type: none"> Finalize research priorities and strategies Develop & Finalize Research Infrastructure Implementation Plan Interviews conducted w/leading researcher(s) Begin process of evaluation within Ballad COPA/CA plans 	<ul style="list-style-type: none"> <i>Final Regional Research Priorities plan submitted and approved</i> <i>Finalized Research Infrastructure plan submitted</i> <i>Evidence of recruitment progress</i> <i>Minutes of meetings with leadership of other plans</i> 	<ul style="list-style-type: none"> Research Infrastructure Implementation begins Offers made to leading researcher(s) Initiate COPA/CA plan evaluation 	<ul style="list-style-type: none"> <i>Research Infrastructure Kickoff meeting held and working groups established</i> <i>Evidence of recruitment progress</i> <i>Report of metrics and outcomes from plan activities</i>

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2020

Implementation Milestones and Metrics: Q3 and Q4

Strategies	Q3 Milestones	Q3 Metrics	Q4 Milestones	Q4 Metrics
<p>4. Develop & Operationalize an Education and Training Infrastructure to Support the Region</p>	<ul style="list-style-type: none"> Evaluation of commercial workforce supply/demand technology platforms Finalized Workforce Analysis Report Exploration of partnerships to develop additional or absent regional nursing and allied health needs Develop Allied Health incentive and career progression models Implementation of new Dental residency program timeline Implementation of new Optometry residency program timeline Initiate proposal for new Addiction Medicine Fellowship/expansion of psychiatry slots/rotations 	<ul style="list-style-type: none"> <i>Evidence of finalized Technology Vendor RFP developed</i> <i>Final Health Education/Workforce Analysis Plan</i> <i>Evidence of meeting with potential partners</i> <i>Draft Allied Health Incentive Models Plan</i> <i>Finalized Implementation Roadmap submitted</i> <i>Finalized Implementation Roadmap submitted</i> <i>Minutes of meetings with regional academic partners</i> 	<ul style="list-style-type: none"> Commercial workforce supply/demand technology platform initiation Initiate changes based on Workforce Analysis Report Development of needed nursing/allied health programs Evaluation of all incentive models vetted and finalized New residency program development activities completed Education and Training program augmentation initiated Evaluation of Primary Care provider retention program 	<ul style="list-style-type: none"> <i>Technology Vendor Demonstrations Started</i> <i>TBD Q4 Plan Aims achieved, plan for Q5 plans finalized</i> <i>Evidence of business models for new/expanded programs</i> <i>Draft concept of incentive plans with implementation roadmap</i> <i>List of program development activities completed</i> <i>Listing of new/expanded training locations-improved access to rural program residents seeking specialty rotations</i> <i>Draft concept model and business plan</i>

Implementation Roadmap

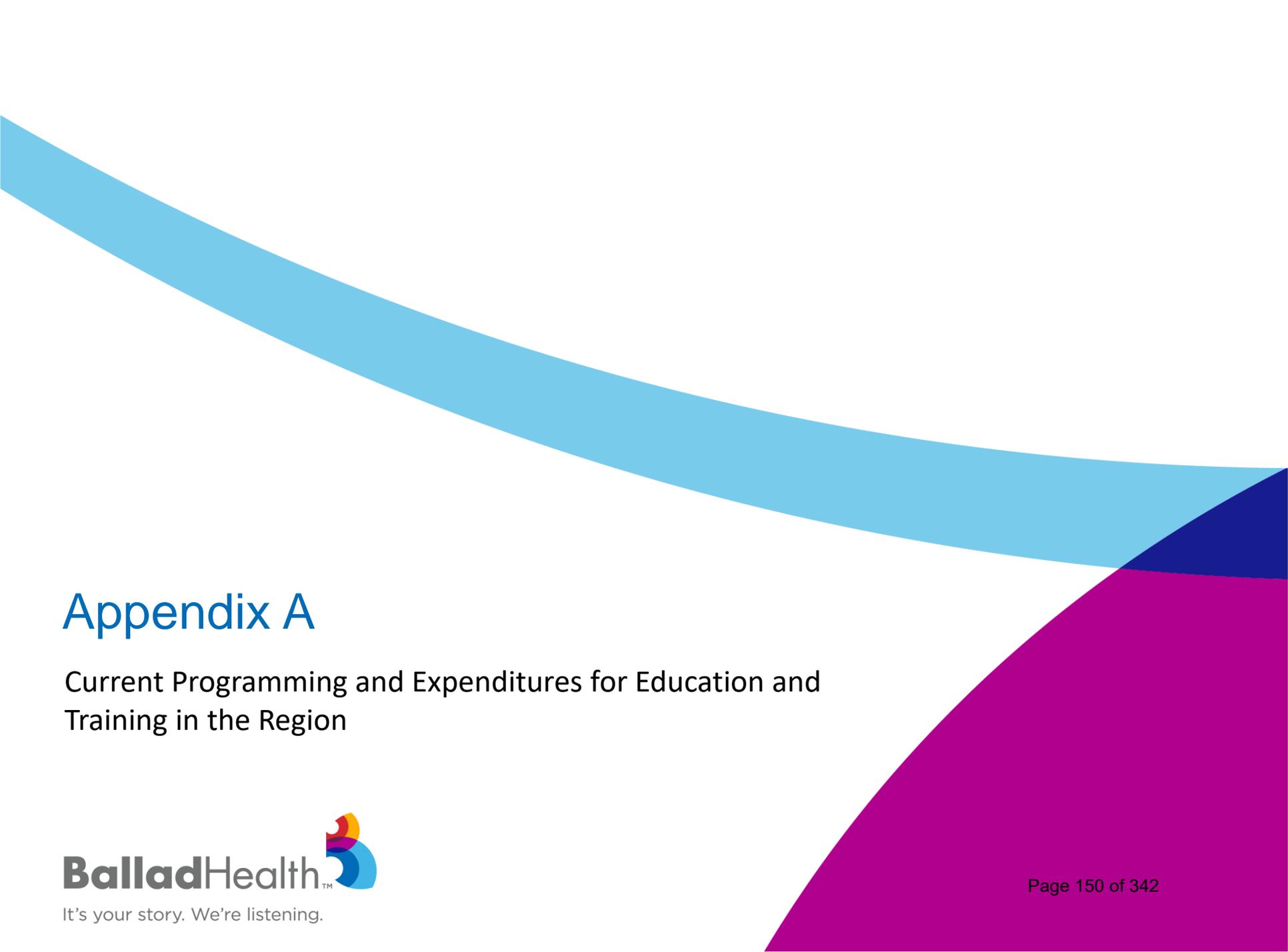
Milestones and Metrics for Measuring Strategies: FY 2021

Strategies	Milestones and Metrics
1. Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)	<p>Milestones</p> <ul style="list-style-type: none"> Evaluate management and support positions added in FY 1 and adjust as necessary Review/evaluate further infrastructure needs and implement as needed Ensure ongoing engagement of regional partners. Academic and non-academic Phase 1 and 2 Support Staffing complete
2. Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth	<p>Milestones</p> <ul style="list-style-type: none"> Complete recruitment of target hires Evaluate positions added in FY2020 and adjust as necessary
3. Develop & Operationalize Consortium Research Infrastructure to Support Health Research in the Region	<p>Milestones</p> <ul style="list-style-type: none"> Research Infrastructure Implementation initial milestones complete Seek additional funding sources for research activities <p>Metrics</p> <ul style="list-style-type: none"> <i>A description of research topics</i> <i>A listing of the entities engaged in research</i> <i>The principal researcher(s) who is/are responsible for each project</i> <i>Grant money applied for or expected</i> <i>Matching funds</i> <i>Anticipated expenditures</i> <i>A report on the outcome of previously reported research projects including references to any published results</i>
4. Develop & Operationalize an Education and Training Infrastructure to Support the Region	<p>Milestones</p> <ul style="list-style-type: none"> Manage resident recruitment process Manage accreditation status of new programs developed Monitor effectiveness of new rotations and adjust as needed Evaluate effectiveness of career progression incentives Selection and Implementation of a Technology vendor <p>Metrics</p> <ul style="list-style-type: none"> <i>A summary containing the number of accredited resident positions for each residency program in the Geographic Service Area, also including the number of such positions that are filled</i>

Implementation Roadmap

Milestones and Metrics for Measuring Strategies: FY 2022

Strategies	Milestones and Metrics
1. Establish the Tennessee Virginia Regional Health Sciences Consortium (TVRHSC)	<p>Milestones</p> <ul style="list-style-type: none"> Evaluate functional success of the consortium and adjust as needed Review/evaluate further infrastructure needs and implement as needed Expand engagement of regional partners. Academic and non-academic
2. Identify Targeted Hiring Needs to Build Research Capacity and Academic Program Growth	<p>Milestones</p> <ul style="list-style-type: none"> Evaluate positions added in FY2021 and adjust as necessary/assess future hiring needs
3. Develop & Operationalize Consortium Research Infrastructure to Support Health Research in the Region	<p>Milestones</p> <ul style="list-style-type: none"> Evaluate how will new research initiatives align with regional priorities and adjust as needed Seek additional funding sources for research activities Assess additional infrastructure and resource needs <p>Metrics</p> <ul style="list-style-type: none"> <i>A description of research topics</i> <i>A listing of the entities engaged in research</i> <i>The principal researcher(s) who is/are responsible for each project</i> <i>Grant money applied for or expected</i> <i>Matching funds</i> <i>Anticipated expenditures</i> <i>A report on the outcome of previously reported research projects including references to any published results</i>
4. Develop & Operationalize an Education and Training Infrastructure to Support the Region	<p>Milestones</p> <ul style="list-style-type: none"> Manage accreditation status of new programs developed Monitor effectiveness of new rotations and adjust as needed Evaluate effectiveness of career progression incentives Evaluate alignment of new educational programs with workforce needs <p>Metrics</p> <ul style="list-style-type: none"> <i>A summary containing the number of accredited resident positions for each residency program in the Geographic Service Area, also including the number of such positions that are filled</i>



Appendix A

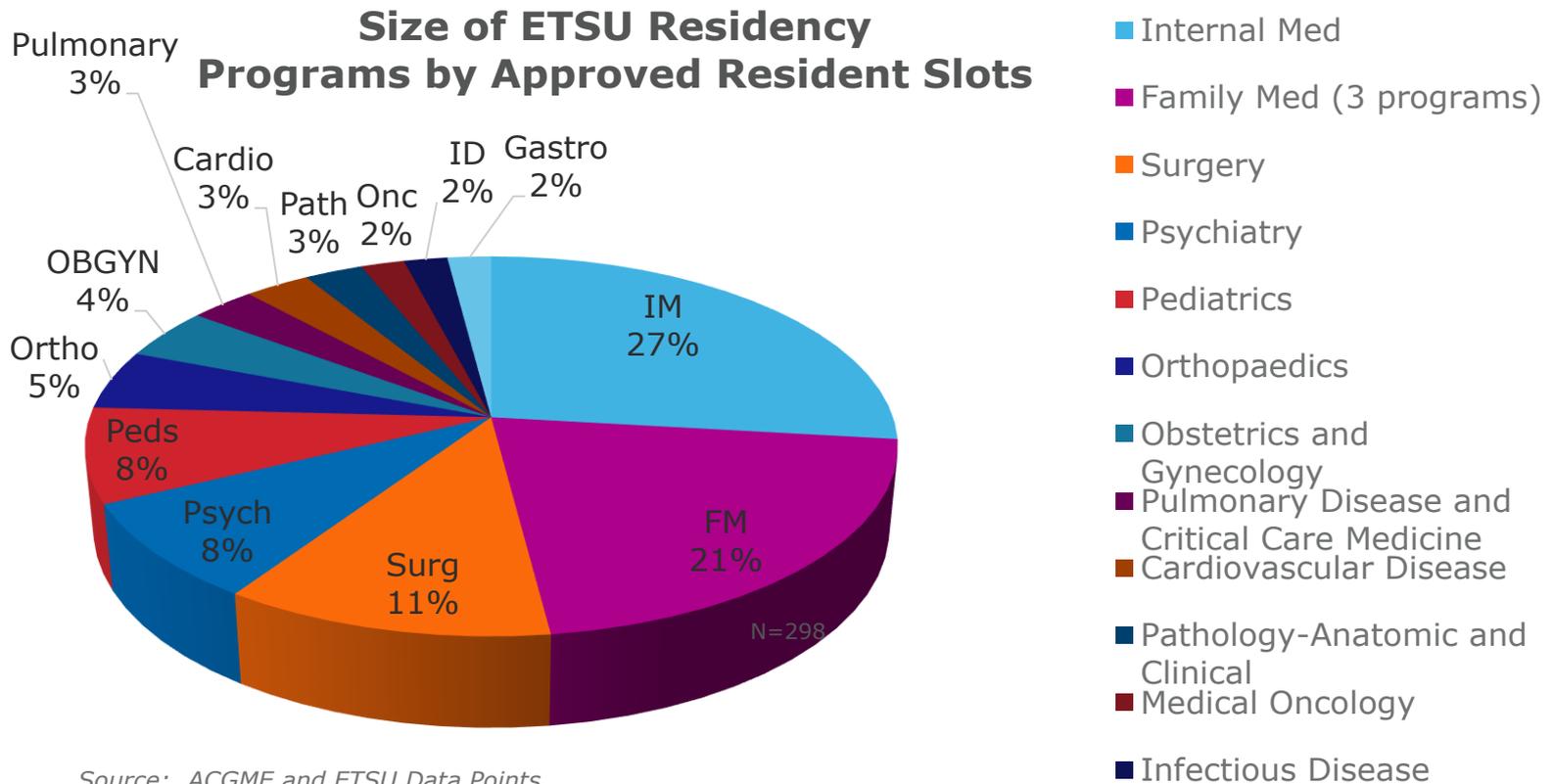
Current Programming and Expenditures for Education and Training in the Region



It's your story. We're listening.

Ballad Health partners with ETSU to sponsor 15 GME programs

- 298 approved slots rotating through clinical sites, of which 264 are currently filled



Source: ACGME and ETSU Data Points

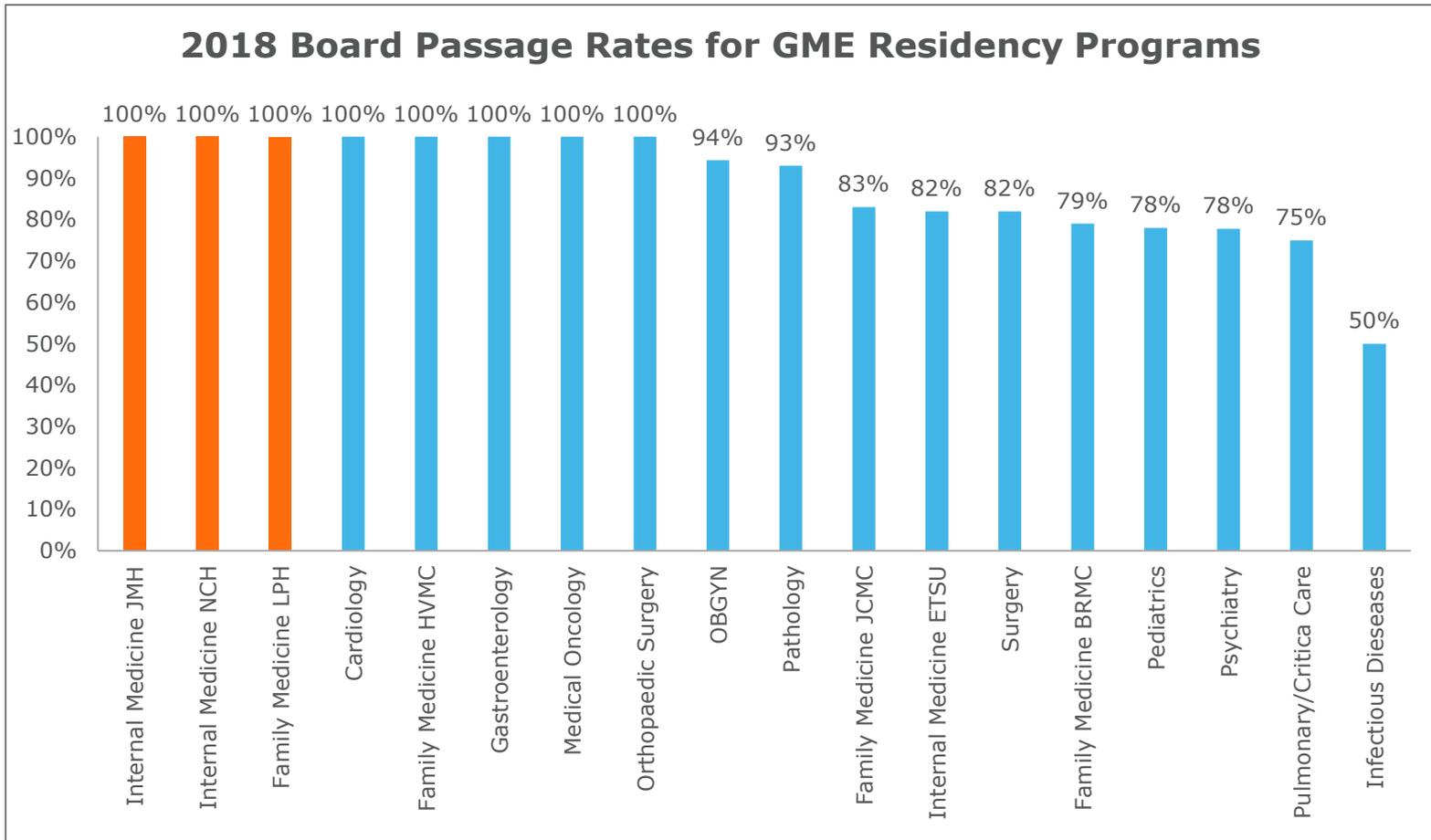
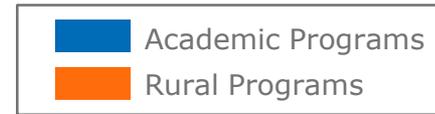
Ballad hospitals sponsor 3 GME residency programs involving 59 FTEs in Southwest Virginia



	Johnston Memorial Hospital	Norton Community Hospital	Lonesome Pine Hospital	Totals
Program(s)	Internal Medicine	Internal Medicine	Family Medicine	
Number of Approved Slots	15	30	TBD*	TBD*
Number of Slots Filled	11	29	19	59
Over/Under Cap	4 under	1 under	TBD*	N/A

Source: ACGME and ETSU Data Points
 Note: * New program, cap has not been set yet

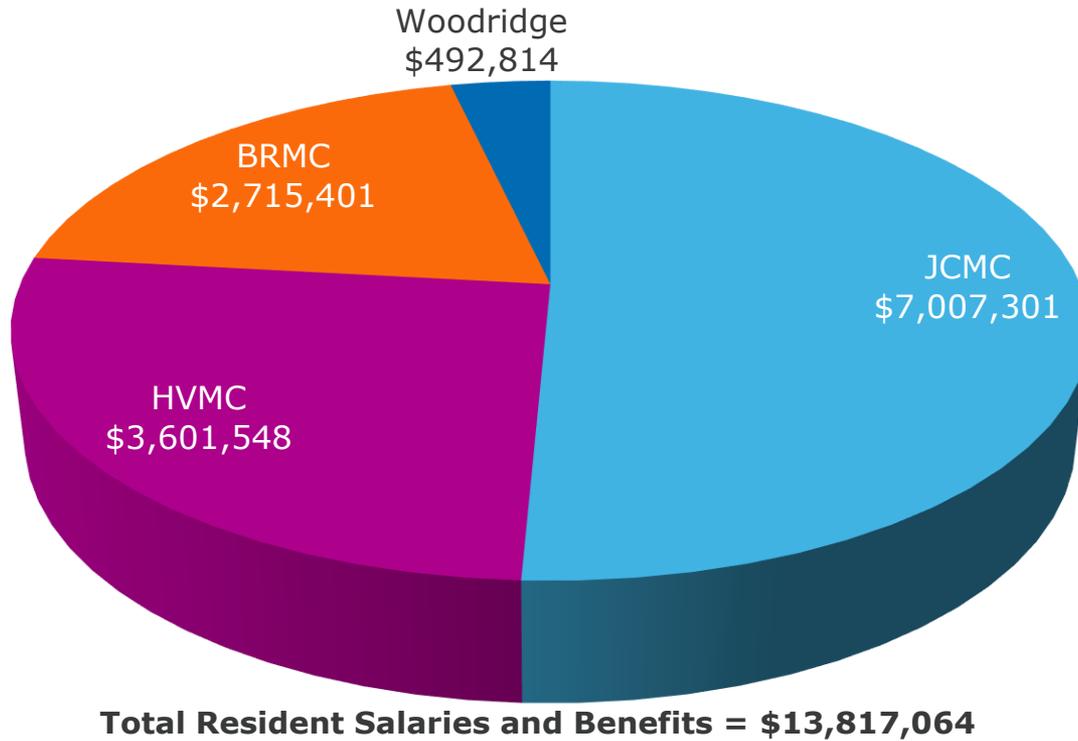
GME residency board passage rates



Source: ETSU Data Point

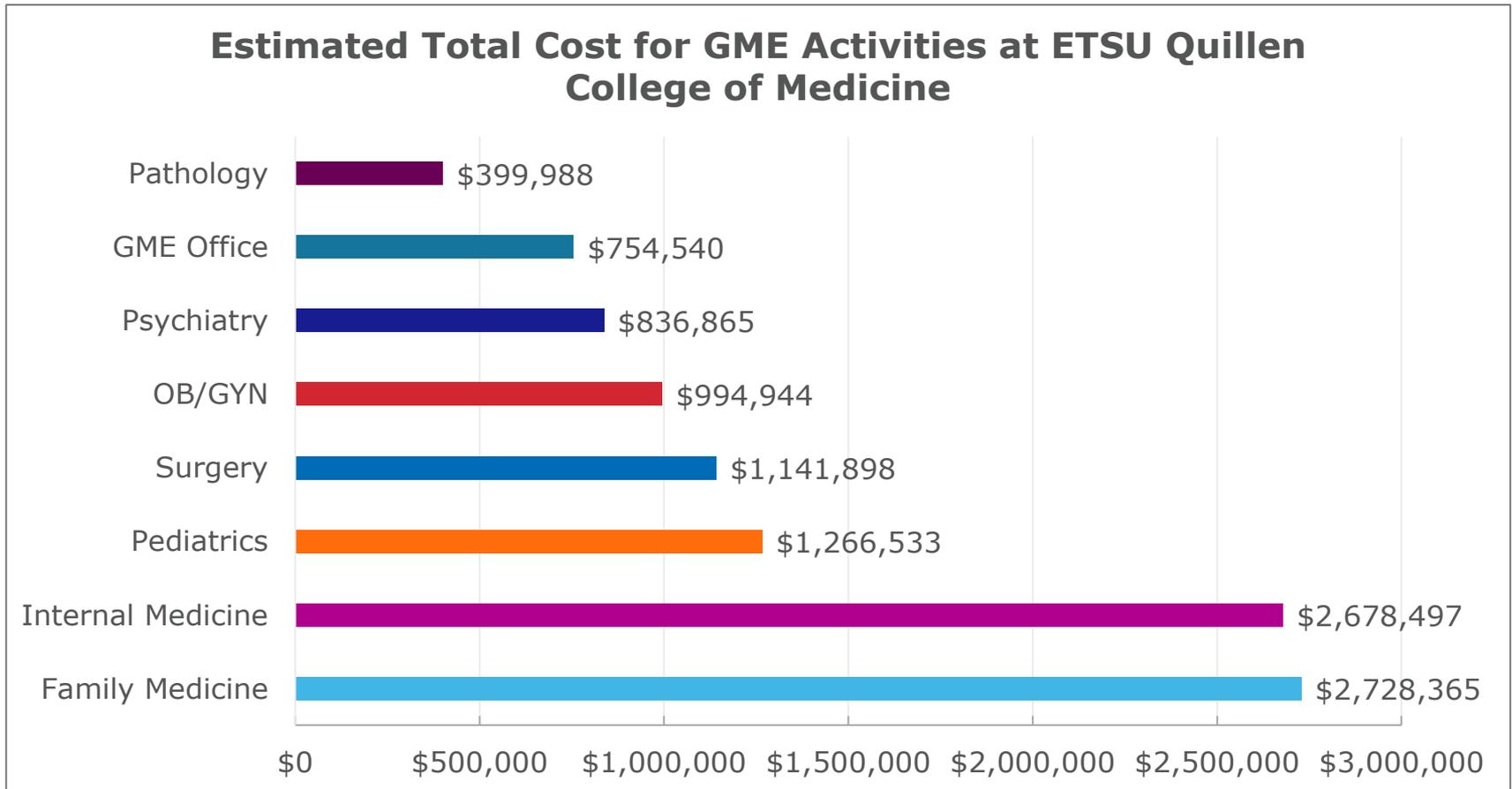
The total DGME expenses for the Academic track total \$13 million

Resident Salaries and Benefits by Hospital



Source: ETSU Data Point

The total IME expenses are approximately \$11 Million dollars for the Academic track



Source: ETSU Data Point

GME Programs match rates in2017

	2015			2016			2017		
	Quota	Filled	Percentage	Quota	Filled	Percentage	Quota	Filled	Percentage
FM Bristol	8	8	100%	8	8	100%	8	8	100%
FM JC	6	6	100%	6	6	100%	6	6	100%
FM KGPT	6	6	100%	6	6	100%	6	6	100%
Int Med	21	21	100%	22	22	100%	22	22	100%
OB/GYN	3	3	100%	3	3	100%	3	3	100%
Path	2	2	100%	2	2	100%	2	2	100%
Peds	7	7	100%	7	7	100%	7	7	100%
Psych	4	4	100%	5	5	100%	5	5	100%
Surg	8	8	100%	7	7	100%	7	7	100%
Card	3	3	100%	3	3	100%	3	3	100%
GI	2	2	100%	2	2	100%	2	2	100%
ID	2	1	50%	2	0	0%	2	2	100%
Onc	3	3	100%	1	1	100%	2	2	100%
Pul/CC	3	3	100%	1	1	100%	2	2	100%

Source: ETSU Data Point

Overview of residency programs

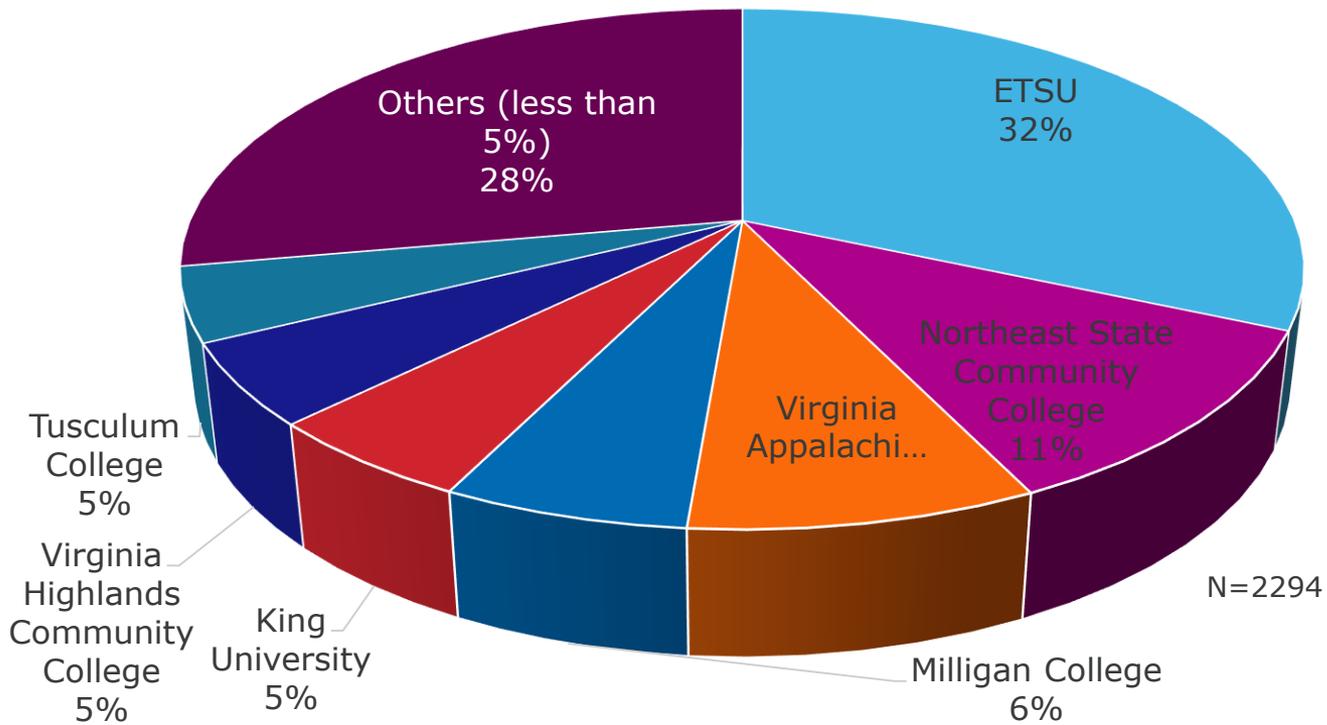
Program	Match Rates	Program Status	Sites	Positions Available	Positions Filled	Board Passage Rate
Internal Medicine	100%	Continued Accreditation	4	80	72	82%
Surgery	100%	Continued Accreditation	4	34	30	82%
Psychiatry	100%	Probationary Accreditation	5	25	18	78%
Family Medicine – Bristol	100%	Continued Accreditation	2	24	24	79%
Pediatrics	100%	Continued Accreditation	1	24	21	78%
Family Medicine – JCMC	100%	Continued Accreditation	2	21	19	83%
Family Medicine – Holston	100%	Continued Accreditation	2	18	18	100%
Orthopedics	100%	Continued Accreditation	7	15	10	100%
OB/GYN	100%	Continued Accreditation	2	13	13	94%
Cardiology	100%	Continued Accreditation	2	9	9	100%
Pulmonology & Critical Care	100%	Continued Accreditation	4	9	6	75%
Pathology	100%	Continued Accreditation	3	8	8	93%
Gastroenterology	100%	Continued Accreditation	2	6	6	100%
Infectious Disease	50%	Continued Accreditation	2	6	4	50%
Oncology	100%	Continued Accreditation	1	6	6	100%

Overview of residencies in Southwest Virginia

Program	Match Rates	Program Status	Sites	Positions Available	Positions Filled	Board Passage Rate	Hired at Ballad
Norton	56% (2018)	Initial Accreditation	6	30	29	100%	34%
Johnston	100%	Initial Accreditation	6	15	11	100%	50%
Lonesome Pine	53%	Initial Accreditation	12	New Program	19	100%	31.25%

Ballad had 2294 nursing students rotate at their sites in 2017

Nursing Students Per Academic Institution Rotating through Ballad in 2017



Source: ETSU Data Point