

Linear Accelerator Services Workgroup

Meeting 2

November 18, 2025

Workgroup Charge

- Review the current concerns around achieving an adequate supply of LINACs in the state.
 - Review recent activity from the Interested Parties meeting held on February 18, 2025.
 - Review comments from providers regarding the issue of LINAC as standard of care. Specifically reassess in the current and future oncology practice paradigm what the role and quality standards are for LINAC as part of a comprehensive oncology center/program.
 - Review petitions for LINACs submitted to DHSR in the past 10 years.
 - Gather input from constituencies to understand how the current methodology works and to identify potential problems.
 - Assess whether new policies or a revised methodology are warranted.
- If deemed necessary, develop findings and recommendations for revisions to the SMFP policies and/or the LINAC methodology, and present them to the Technology and Equipment Committee of the SHCC for consideration in Spring 2026.

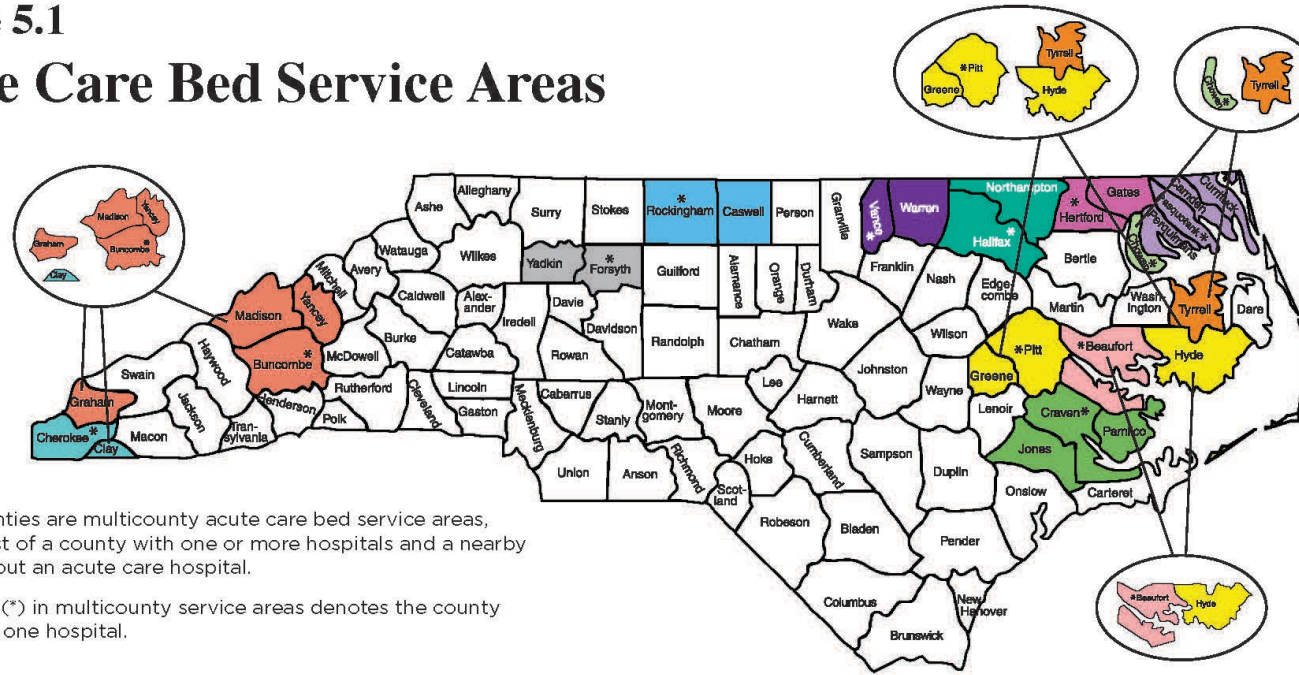
Service Areas

- Geographic area from which a facility draws patients
- Goals
 - Reflect geographic area where people primarily receive LINAC treatment
 - > 90% of patients within about 60 minutes of LINAC
- Primary requirements
 - Service area must have at least one LINAC
 - Method to ascertain when a new service area needs to be created (Criterion 4)

Existing Configuration Options

- Current protocol
 - Where patients go for treatment
 - County population
- Health Service Areas (HSA)
 - NC has 6 HSAs (SMFP Appendix A)
 - Using 6,750 ESTVs per LINAC as basis for need determination, no HSA would currently have need determination
- Acute care: hospital beds (cardiac cath and MRI), operating rooms
 - Over about 75 counties have either hospital or OR but only 53 have LINAC
 - Creates many single-county service areas with no LINAC

Figure 5.1
Acute Care Bed Service Areas



Shaded counties are multicounty acute care bed service areas, which consist of a county with one or more hospitals and a nearby county without an acute care hospital.

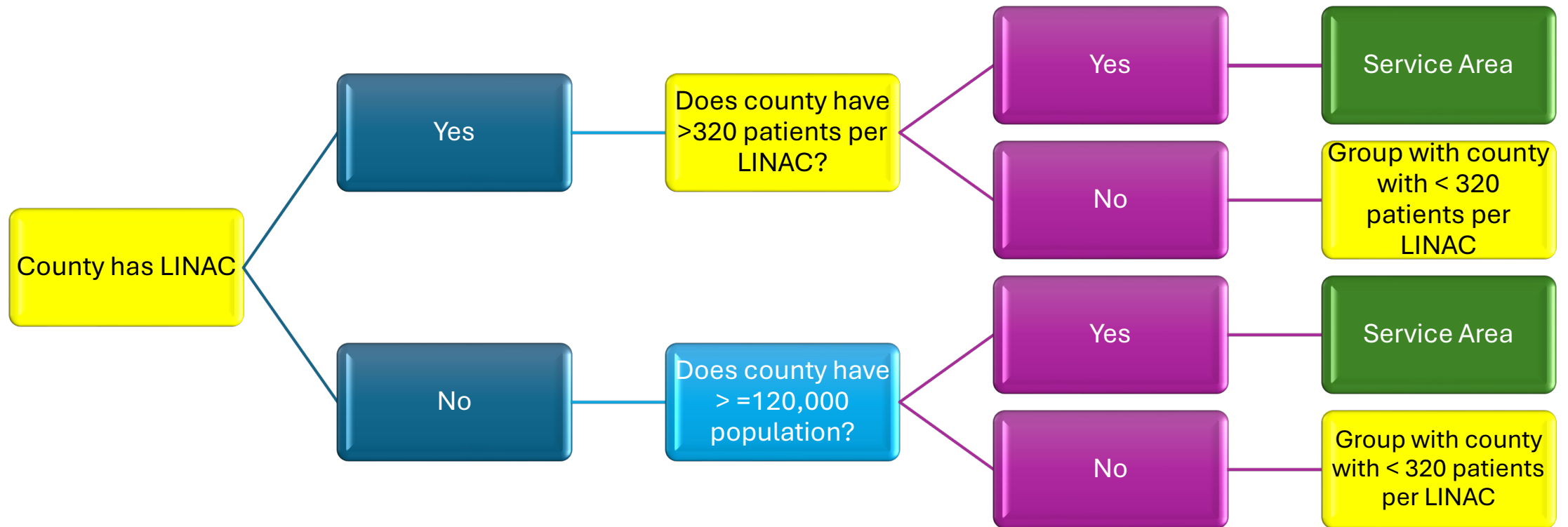
The asterisk (*) in multicounty service areas denotes the county with at least one hospital.

Hospitals	Multicounty Service Area	Color Code
Annie Penn Hospital, UNC Rockingham Hospital	Rockingham, Caswell	
Atrium Health Wake Forest Baptist, Novant Health Forsyth Medical Center, Novant Health Medical Park Hospital	Forsyth, Yadkin	
CarolinaEast Medical Center	Craven, Jones, Pamlico	
ECU Health Beaufort Hospital (A campus of ECU Health Medical Center)	Beaufort, Hyde	
ECU Health Chowan Hospital	Chowan, Tyrrell	
ECU Health Medical Center	Pitt, Greene, Hyde, Tyrrell	
ECU Health North Hospital	Halifax, Northampton	
ECU Health Roanoke-Chowan Hospital	Hertford, Gates	
Erlanger Murphy Medical Center	Cherokee, Clay	
Maria Parham Health	Vance, Warren	
Mission Hospital	Buncombe, Clay, Graham, Madison, Yancey	
Sentara Albemarle Medical Center	Pasquotank, Camden, Currituck, Perquimans	

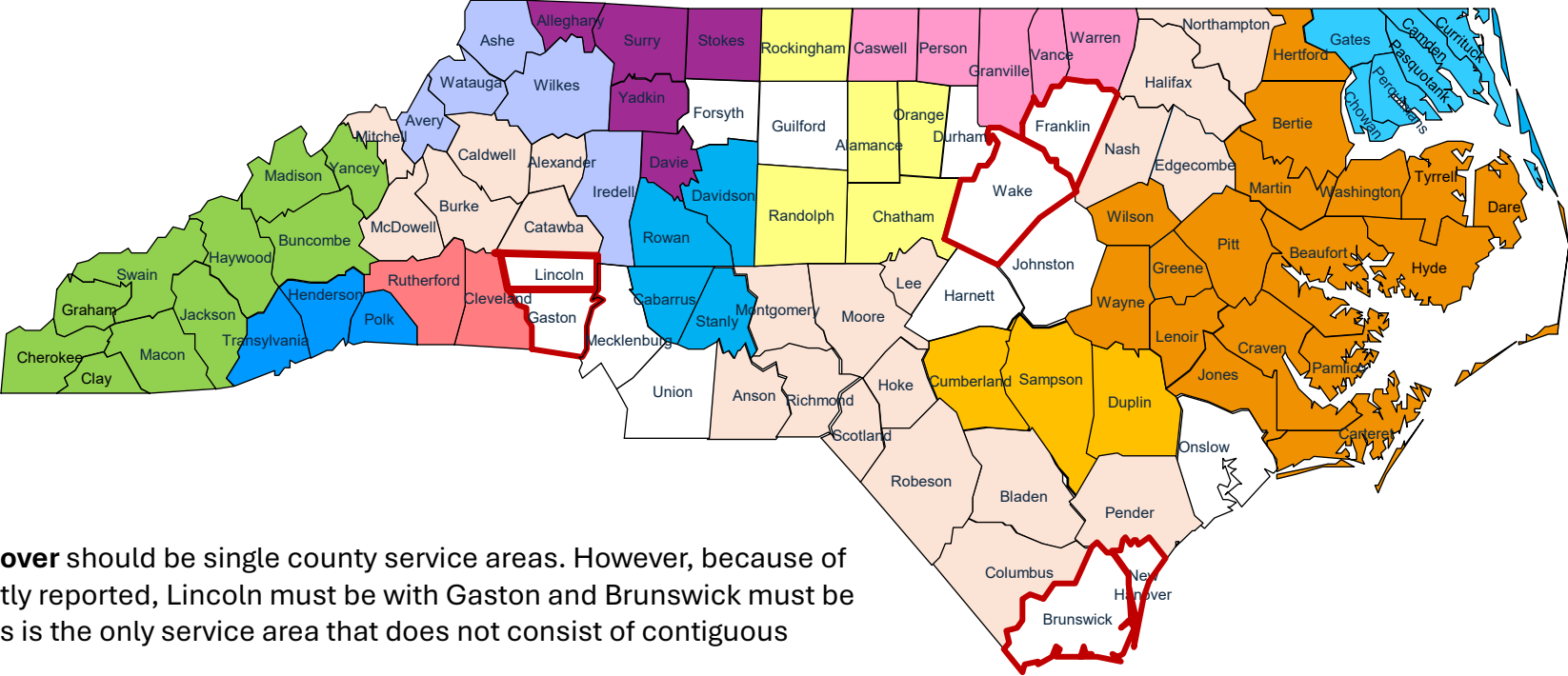
Configuration based on Number of Patients per LINAC

- Number of patients treated per LINAC
 - Capacity = 400 patients/LINAC (ESTRO/QUARTS – European Union)
 - Planning capacity = 80% → 320
- Base population
 - 120,000 population
 - 180,000 population
- Grouping of counties
 - if population is below threshold
- Service areas must consist of contiguous counties
 - May need to assign county to SA where relatively small % of patients go

Defining LINAC Service using Patients Served per LINAC



**Draft Service Areas
- 320 Patients per LINAC**



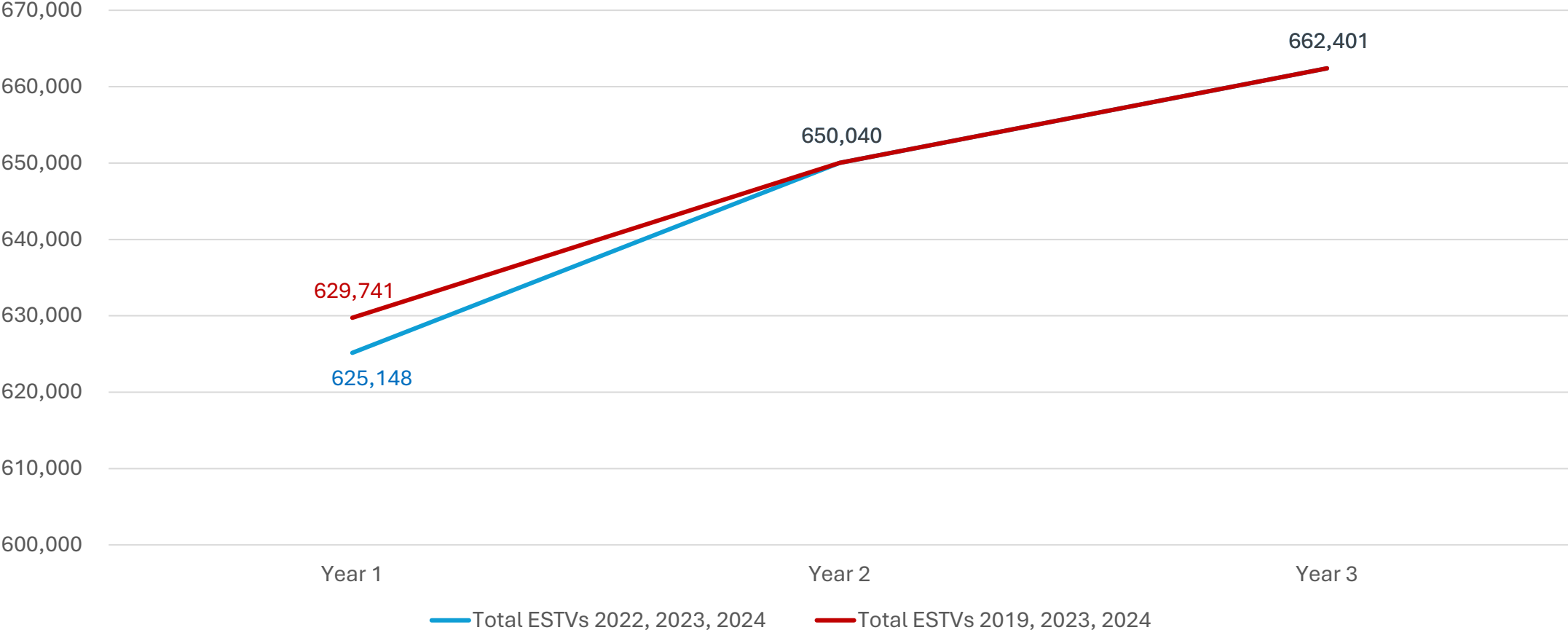
Gaston and New Hanover should be single county service areas. However, because of how the data is currently reported, Lincoln must be with Gaston and Brunswick must be with New Hanover. This is the only service area that does not consist of contiguous counties.

Franklin is grouped with Wake because, even though Wake is supposed to be a single county service area, the LINAC in Franklin has a CON to relocate to Wake.

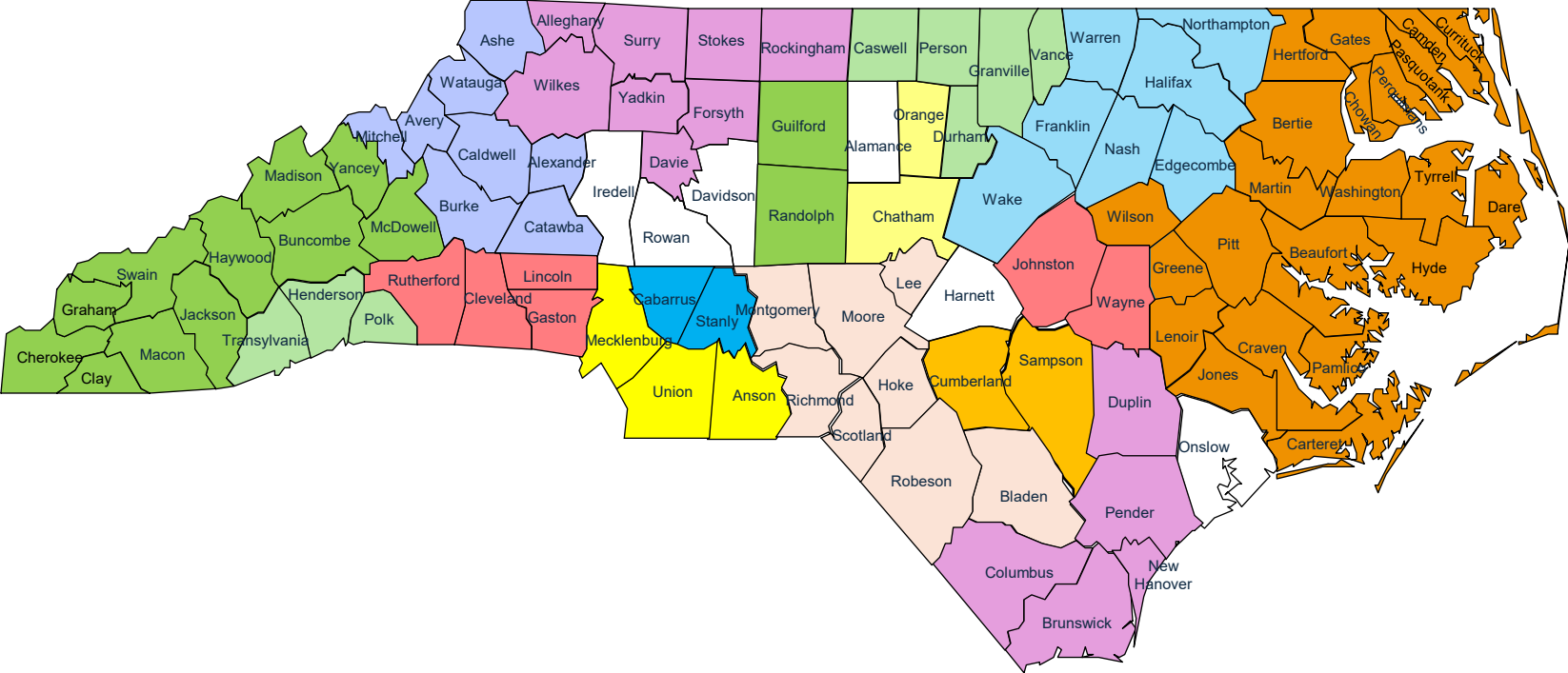
Three-Year Service Area Configuration

- Three most recent reporting years: 2022, 2023, 2024
 - Combine data for three years
- Use current 'decision tree'
- Reconfigure every three years

Three-Year Options



Draft Service Areas - Three Years



Staff Recommendation

- Do not reinvent the wheel if the wheel works
- Seems more logical to use where patients go than to use patients per LINAC
 - Both are about where people get treatment, but not “who” gets treatment
- Staff recommendations:
 - Use current decision tree
 - Update SAs every three years
 - Use most recent three years of patient origin and service location data
 - Acute care beds (cardiac catheterization and MRI) and operating rooms use this approach
 - Use current year population to define population (e.g., for 2026 SMFP, use 2025 population)

Considerations Relevant to the Methodology

Definition of “Patient”

- Hospital License Renewal Application

- *Number of patients who received a course of radiation oncology treatments on linear accelerators (not the Gamma Knife). Patients shall be counts once if they receive one court of treatment and more if they receive additional courses of treatment. For example, one patient who receives one court of treatment counts as one, and one patient who receives three courses of treatment counts as three. For hospitals with multiple campuses, the total number of patients on the cumulative record should match the total number of patients listed in the Patient Origin Table.*

- Registration and Inventory Form

- *Patients shall be counted once for each course of radiation oncology treatment using the linear accelerator. For example, one patient who receives one course of treatment counts as one, and one patient who receives three courses of treatment counts as three. The number of patients reported here should match the number of patients reported in the Linear Accelerator Treatment Patient Origin chart on page 4 of this form.*

- Initial treatment followed by immediate boost regimen

- Under CMS model, services rendered within defined time frames are grouped within a single episode of care
- May suggest need to change definition

- Must make sense to providers are be as easy to report as possible

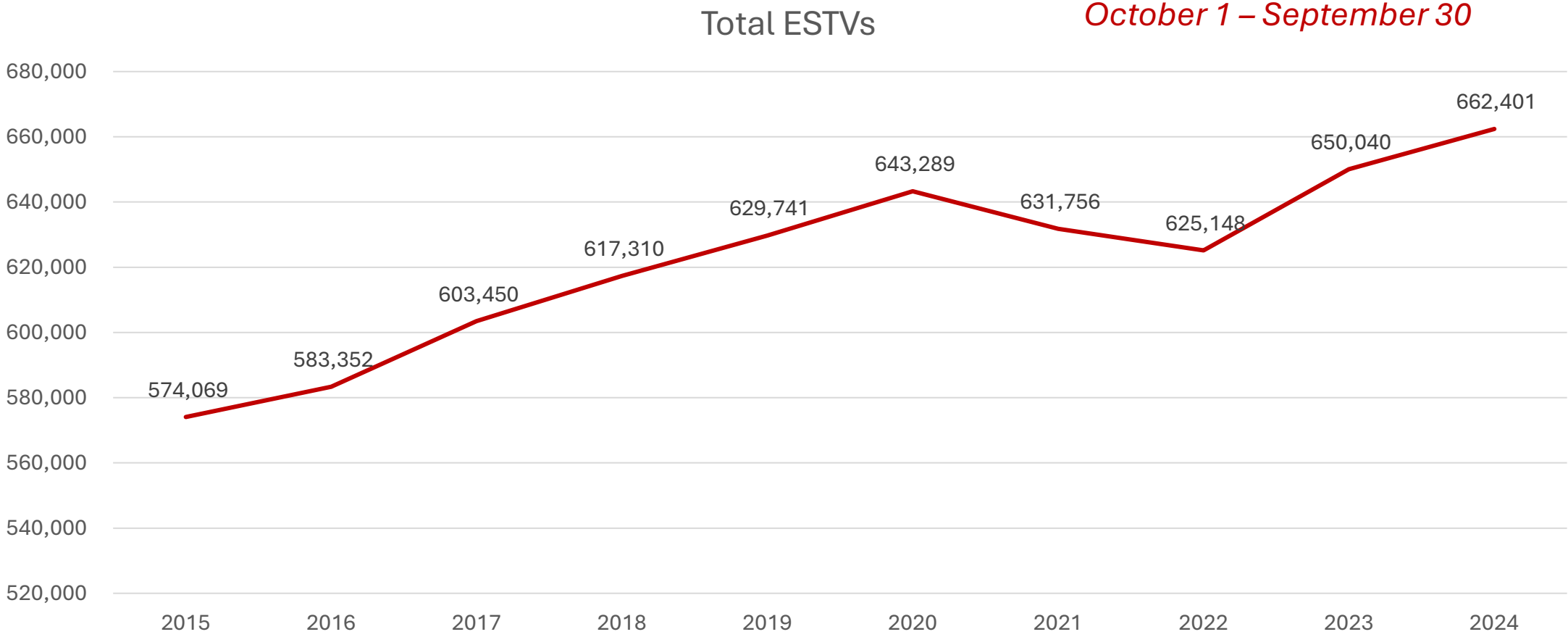
Measures of Utilization

- ESTVs
 - Scenarios for next meeting will use ESTVs
 - Should we re-weight them beforehand? If so, how?
 - We use individual CPT codes and then weight them, but is use of individual CPT codes necessary?
 - Most are weighted “1.00”
 - Categorize?
 - List procedures with higher weights (e.g., SRS, IGRT) separately and use residual category for all procedures weighted “1.00?”
 - Recall that we do not have internal capacity to review and update CPT codes
- Number of patients per LINAC
 - Is this as “good” as measure as ESTV?
 - If facility treats more than x patients per LINAC, then it has a deficit of LINACs
- Other?
 - Record and Verify System
 - Do all facilities have this?
 - Is data consistent across types of facilities?

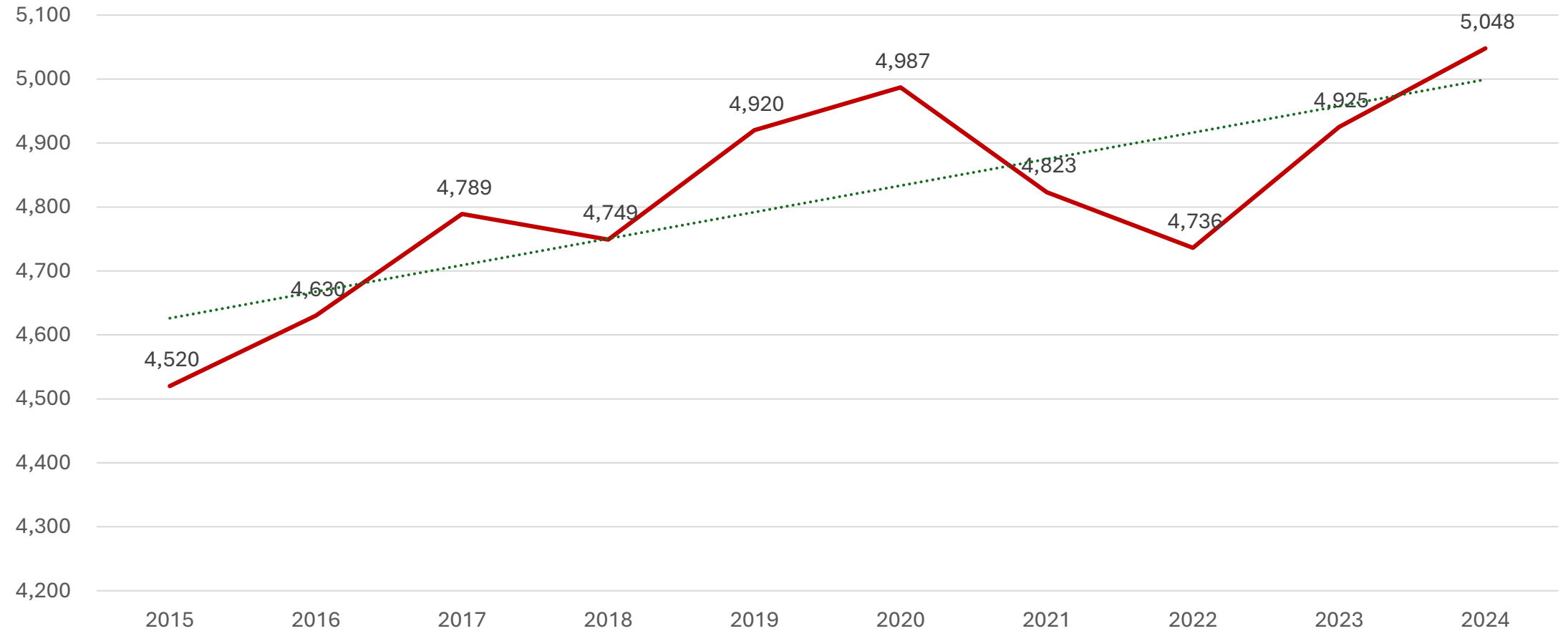
Planning Horizon

- Based on
 - Utilization in current reporting year
 - Population projections for planning horizon
- Any choice is arbitrary to a degree – substantial variability in how long it takes to bring a LINAC online based on proposed location
- Project current reporting year utilization x years beyond reporting year
 - 3 years?
 - 2027 SMFP
 - Reporting year = 2025
 - Projection year = 2028
 - 5 years?
 - 2027 SMFP
 - Reporting year = 2025
 - Projection year = 2030

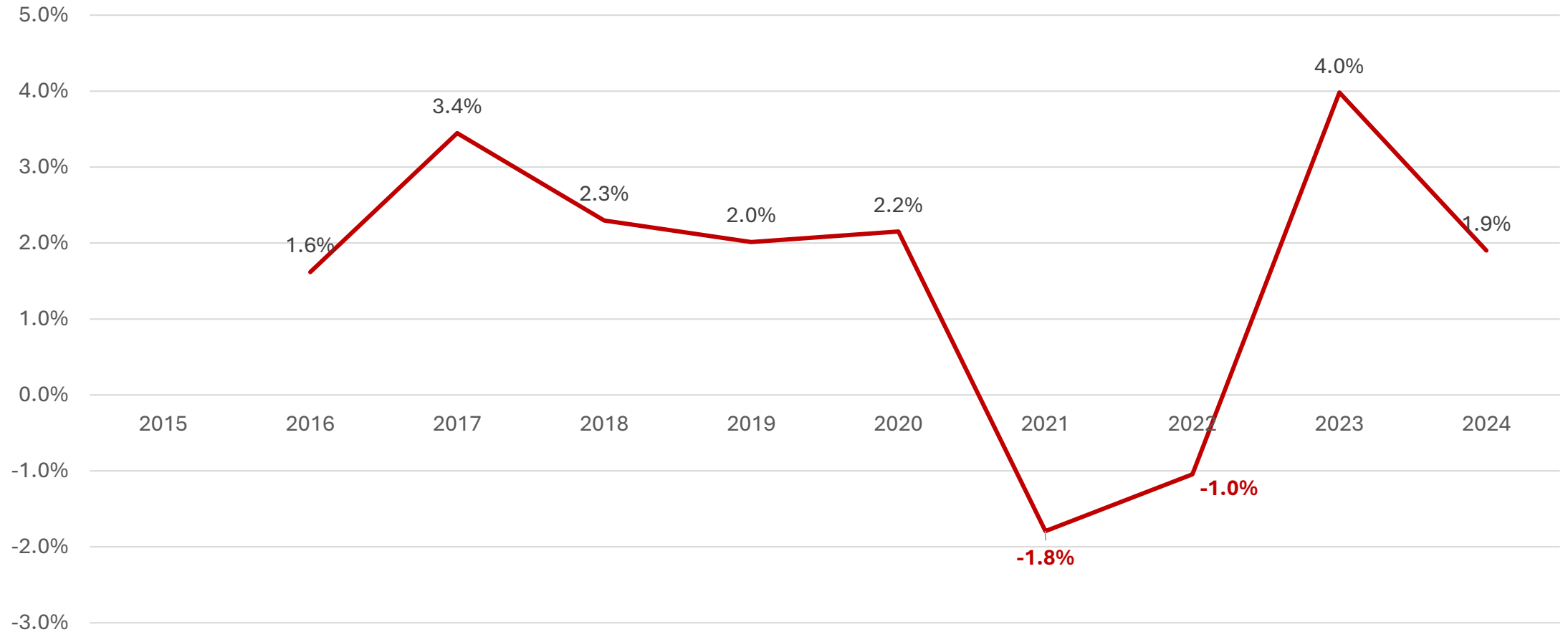
Total ESTVS: 2015-2024



ESTVs per LINAC: 2015-2024



Change Rates in Utilization: 2015-2024



Methodology Approach

- **ALL Need Determinations in SMFP are for Service Areas**, but we will test calculation of deficits...
 - based on individual facilities
 - PET methodology uses this approach
 - Need determination is sum of deficits for individual facilities
 - Minus the number of new CONs and placeholders for need determinations
 - based on health systems
 - OR methodology uses this approach
 - Need determination is the sum of each health system's deficits
 - Minus the number of new CONs and placeholders for need determinations
- Should the methodology impose a limit on need determinations?
 - For equipment, two is common
- Criterion 4 allows county with no LINAC that reaches 120,000 population to become separate service area and have need determination
 - Recommend keeping this aspect of methodology

Other Considerations – Part 1

- Group facilities within Service Areas based on utilization
 - Like OR methodology
 - Require higher economy of scale in areas that perform more procedures
 - More utilization would be required to trigger need determination
 - *Does this make sense in context of LINAC treatment?*
 - If so, can look at this option for methodology scenarios
- Use of cancer incidence rates
 - Incidence = new diagnoses
 - Prevalence = number of people living with cancer in a given year
 - Incorporate a “presumed” increase in “expected” utilization based on average annual increase in cancer incidence?
 - Statewide, cancer incidence is growing more than state population (~1.9% compared to ~1%)
 - Should we?
 - If so, what % of incidence (50%, 25%)

More Considerations – Part 2

- Underutilized facilities
 - Freestanding centers usually have lower utilization than hospitals
 - Often in rural areas – comparatively low utilization not a sign of “under” utilization
 - Changing basis for calculating deficits/need determinations may help address this concern
- Consider excluding facility from methodology if approved LINAC is not in operation by **x** years after CON was issued
 - All “active” CONs are treated the same in the methodologies
 - Problematic given that LINACs are often approved for hospitals
 - May legitimately require long lead time

Policy

General Policy Categories

1. Allow especially highly-utilized facilities to qualify for additional LINAC(s)
2. Emerging/evolving technologies
3. How a radiation oncology program can obtain first LINAC

How Can a Radiation Oncology Program Obtain First LINAC?

- Does SMFP need a policy?
 - If not, a LINAC would be approved/not approved using petition process
 - If so, what are appropriate elements of policy?
- Policy versus petition
 - A policy allows a specific applicant to apply for a CON. If the CON is denied, no CON is issued and no one gets the LINAC
 - A petition allows a need determination to be placed in the SMFP. Anyone can apply and the petitioner may or may not be issued the CON for the LINAC.
- For all policies, CON evaluates whether applicant satisfies the stipulations
 - Once a CON is issued and the recipient develops approved asset, no mechanism exists for Agency to withdraw CON if program fails to follow stipulations

Potential Policy Elements Exclusive of Quality Measures

- Location of program
 - Population of service area/county
 - Type of facility (hospital versus freestanding)
- Stability and staff
 - How long in operation
 - Staffing thresholds (number and type of staff)
- Services provided
 - Inpatient and outpatient
 - Chemotherapy, surgery
 - Other services (e.g., patient education, palliative care, social worker services)
- Thresholds for “amount” of service provided
 - Number of patients
 - Volume of certain treatments (e.g., surgery, chemotherapy)
 - Number of types of cancer treated

Quality of Care

- Should a policy require plans for accreditation?
- If so, what type?
 - American Society for Radiation Oncology (ASTRO)
 - American College of Radiology (ACR)
 - American College of Radiation Oncology (ACRO)
 - Others?