

Overview of Health System-Level Interventions and Financial Strategies to Facilitate Multidisciplinary, Multispecialty Expert Care for People with Cancer

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National Cancer Policy Forum

*Developing a Multidisciplinary and Multispecialty Workforce for Patients with Cancer, From
Diagnosis to Survivorship: A Workshop*

July 17, 2023

Disclosures

- David W. Dougherty, MD MBA FASCO
 - None
- Amye Tevaarwerk, MD
 - MITRE (Research Funding to Mayo Clinic)
 - Epic Systems (Family Member)

Goals & Objectives

- How can health systems facilitate multidisciplinary, multispecialty expert care for people with cancer?
 - Structures & Processes to achieve the Outcome
- How can health systems realize the value of multidisciplinary, multispecialty expert care for people with cancer?
- Making a case for the importance of data, informatics and leveraging technology

Overview of Health System-Level Interventions and Financial Strategies to Facilitate Multidisciplinary, Multispecialty Expert Care for People with Cancer

Structures & Processes to Support the Outcome: *Practical Perspectives from the Penn Medicine “Cancer System”*

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The Cancer Care Landscape Continues to Evolve

- ▶ Hospital-Physician Consolidation has Accelerated, with highest rate in Oncology
 - 51% of independent practices in 2007 had become vertically integrated by 2017
- ▶ 55% of all Adult Cancer Visits take place in Independent Practice settings

Percentages of practices that were independent in 2007 and had integrated with either a hospital or a health system by 2017, by specialty

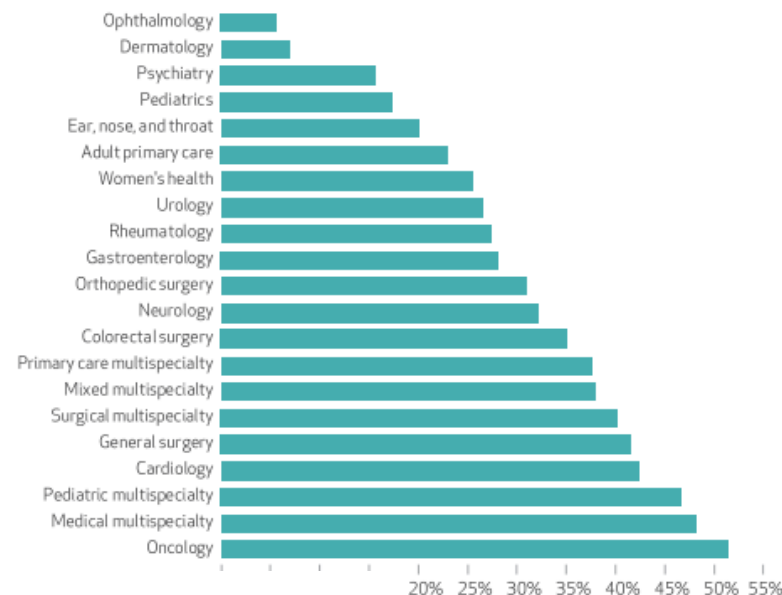


TABLE 2. Proportion of Adult Cancer Visits by Oncology Discipline and System Type

Oncology Discipline	NCI Cancer Center System	Non-NCI Academic System	Nonacademic System	Independent Practice
Adult medical oncologists	10.0	4.3	33.9	51.8
Radiation oncologists	13.4	5.1	29.3	52.3
Surgical/gynecologic oncologists	18.5	9.3	39.3	33.0
Other surgeons performing cancer surgeries	6.0	3.4	29.9	60.7
Palliative care physicians	14.6	4.7	42.4	38.4
Overall	8.7	4.1	32.2	55.0

Nikpay et al. Health Affairs 2018 37(7): 1123-1127

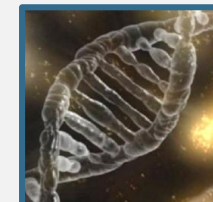
Nguyen et al. JCO.23.00626 *Journal of Clinical Oncology*
Published online June 28, 2023.

NOTE. This table shows the proportion of face-to-face office visits for evaluation and management services (Current Procedural Terminology codes 99201-99215) provided to fee-for-service Medicare beneficiaries by oncologist discipline and system type, adding up to 100% in each row. Abbreviation: NCI, National Cancer Institute.

Cancer Trends

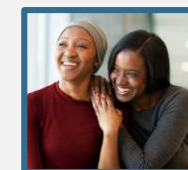
Staggering rate of discovery in biology and immunology in last 20 years

- Assays multiplexed and fast, generating huge amounts of data especially from NGS
- Bioinformatics essential for discovery but validation is needed
- **Implication: More and more opportunities “to start at the bedside”**



Practice of oncology increasingly complex

- Sub-sub-specialized knowledge and multidisciplinary approach needed
- New modalities highly technical; more is not better; and stakes are higher
- **Implication: Optimal patient care is now very hard but can be facilitated with innovation**



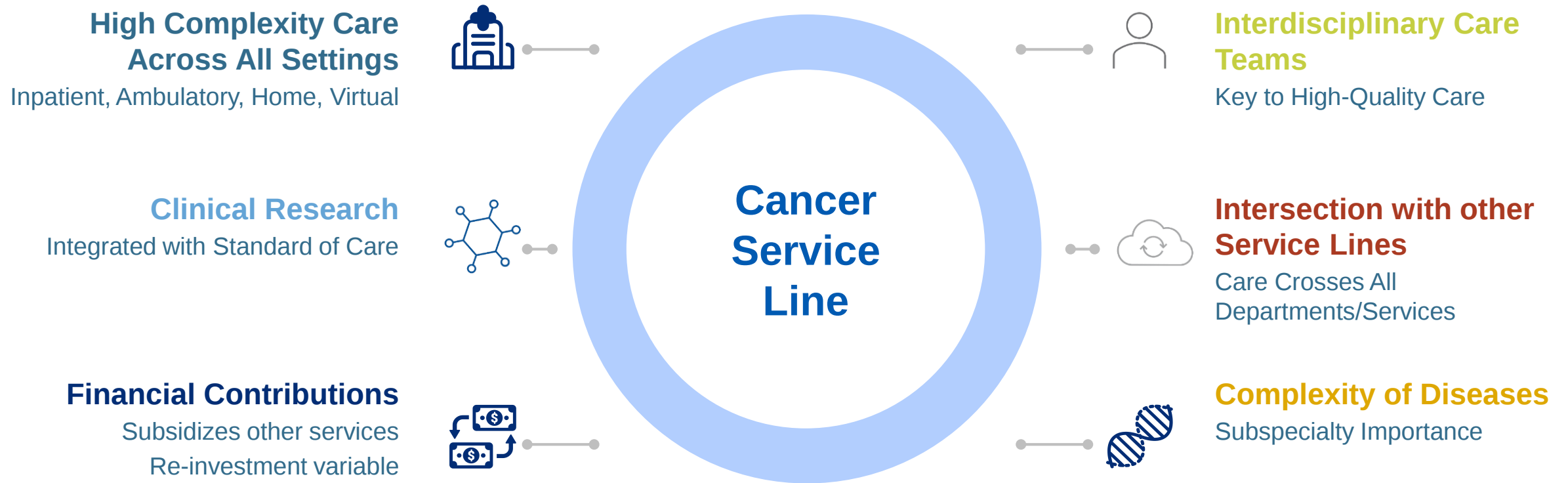
Alternative payment models are upon us

- Payors/CMS don't have the answer; ask AMCs to innovate to reduce costs and offer quality
- Margins from fee-for-service threatened so efficiency is important, scientific- and evidence-guided medicine are part of the value being sought
- **Implication: We can scale and align – let's think about a Cancer System, not Cancer Programs!**



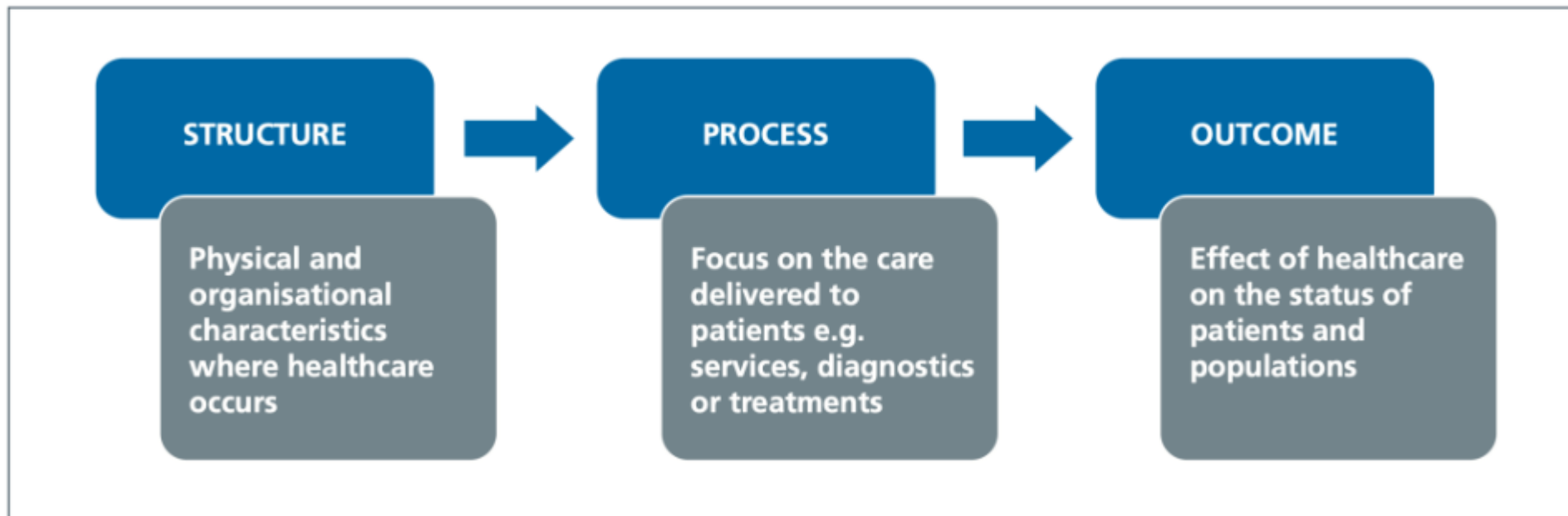
Cancer's Unique, Critical Position in Health Systems

CANCER IS THE MOST COMPLEX SERVICE LINE



Getting the *Right Care* to the *Right Patient* at the *Right Time* & *Right Location*

Figure 1: The Donabedian model for quality of care



- ▶ How can health systems support the Structure & Process to achieve this Outcome?
 - Structures (Hospitals, Disease Teams)
 - Infrastructure (IS, Tumor Boards)
 - People
- ▶ How can health systems realize the value of providing multidisciplinary, multispecialty expert care for people with cancer?

Abramson Cancer Center & Cancer Service Line: *Structures & Processes*

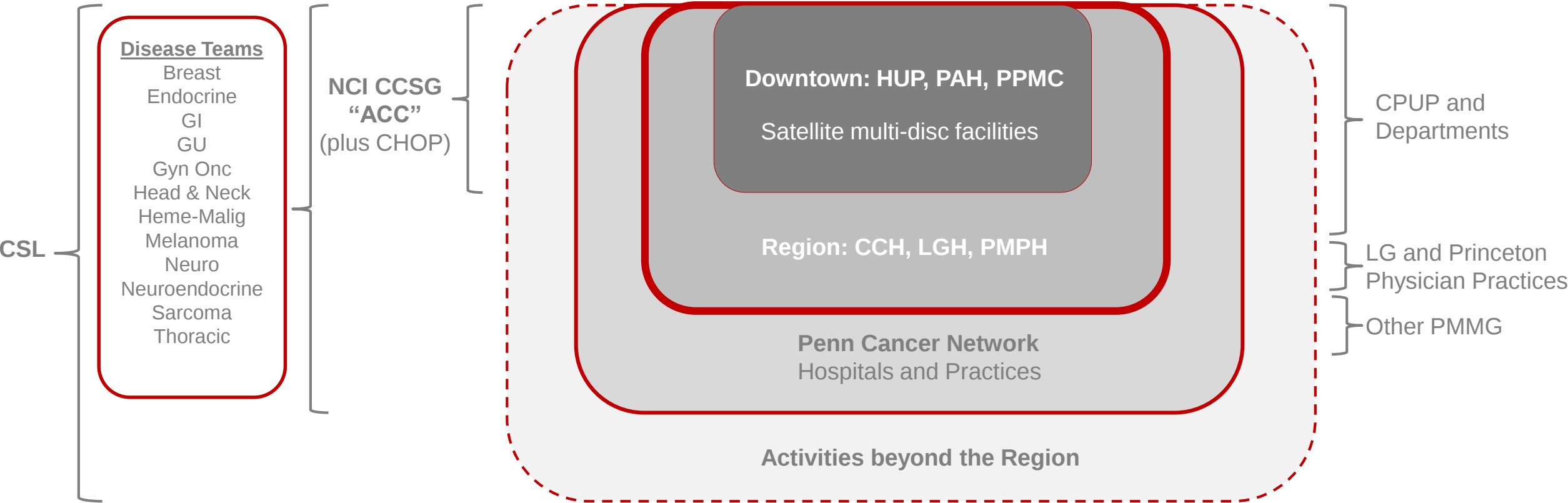


Penn Medicine Cancer Service Line

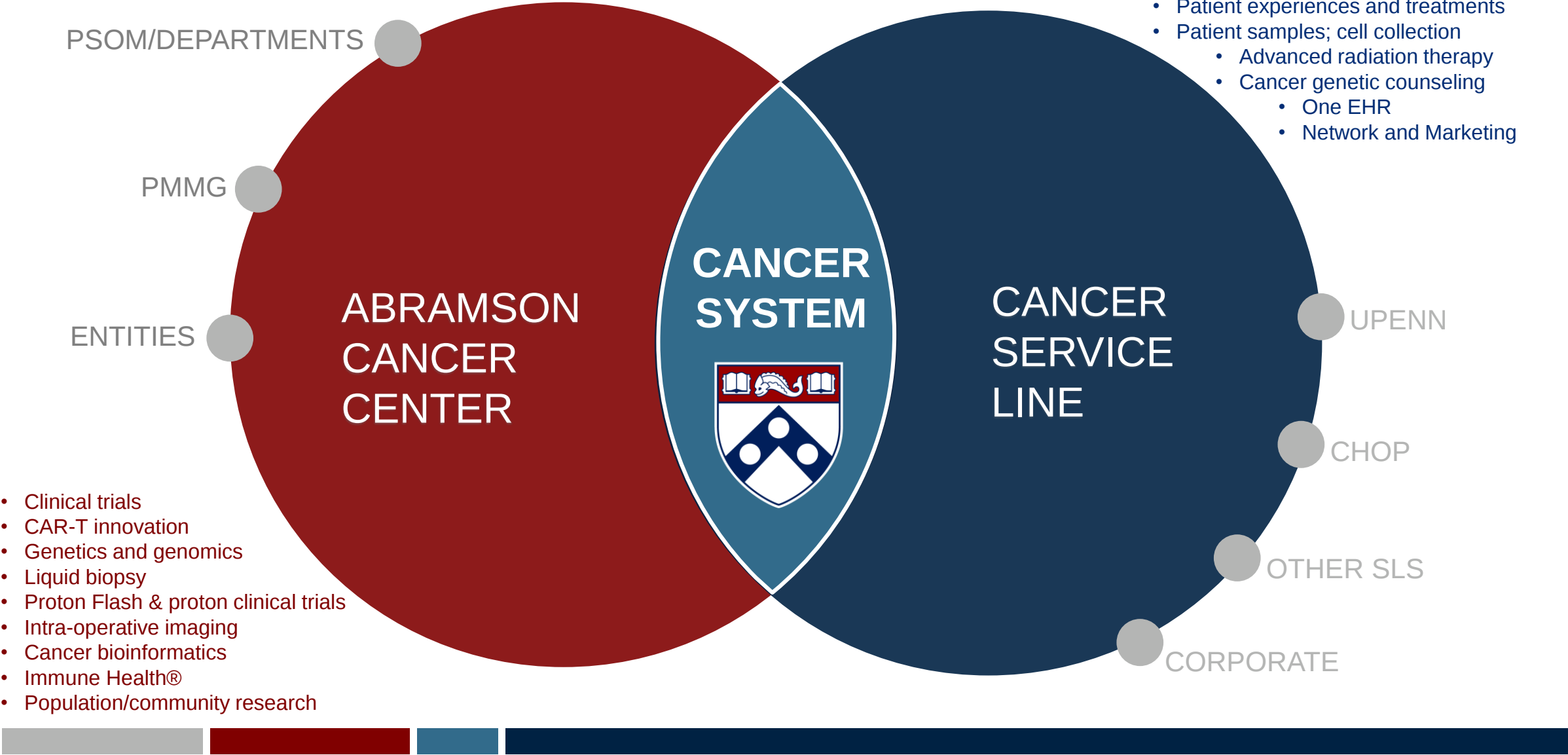
- ▶ Integrated Network: 6 hospitals, 18 cancer care locations, virtual care, cancer care at home
 - Annual Statistics: **42,000 new patient visits***, **350,000 visits***, 17,000 surgeries, 205,000 infusions, & 145,000 radiation treatments
 - Over 2,500 patient encounters per day
- ▶ 12 Disease specific, multidisciplinary leadership teams
 - Disease specific subspecialists in Surgical Oncology, Medical Oncology, Radiation Oncology, Diagnostic & Interventional Radiology, Pathology & Other Relevant Areas
 - 20 Disease specific Tumor Boards
- ▶ NCI-Designated Comprehensive Cancer Center
- ▶ National Comprehensive Cancer Network Member
 - \$158 Million in research funding
 - 1,260 annual publications
 - Over 7,000 patients accrued to clinical trials
 - 20 FDA approved Cancer Treatments and Therapies in the past 5 years



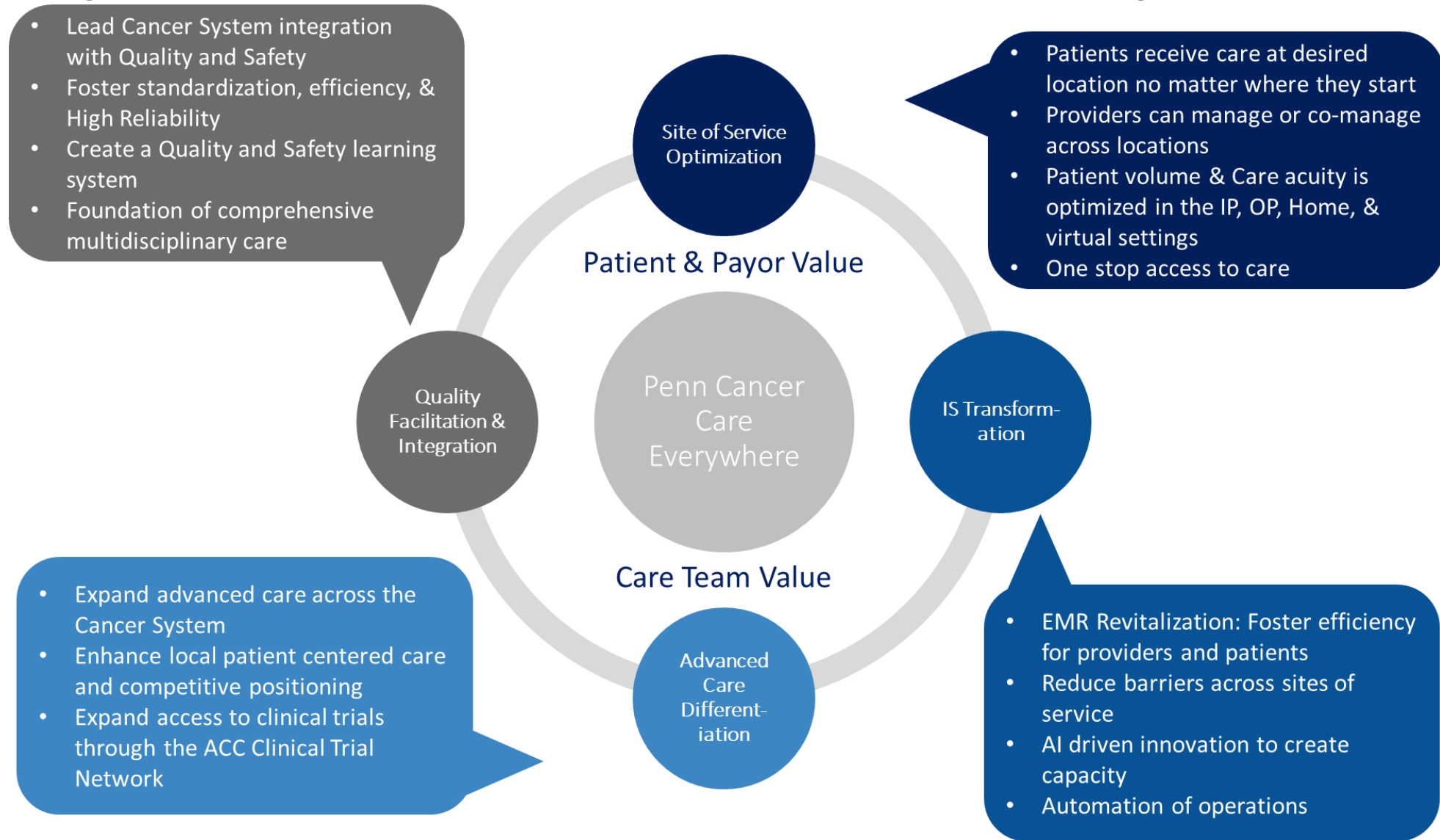
Cancer Service Line Structure



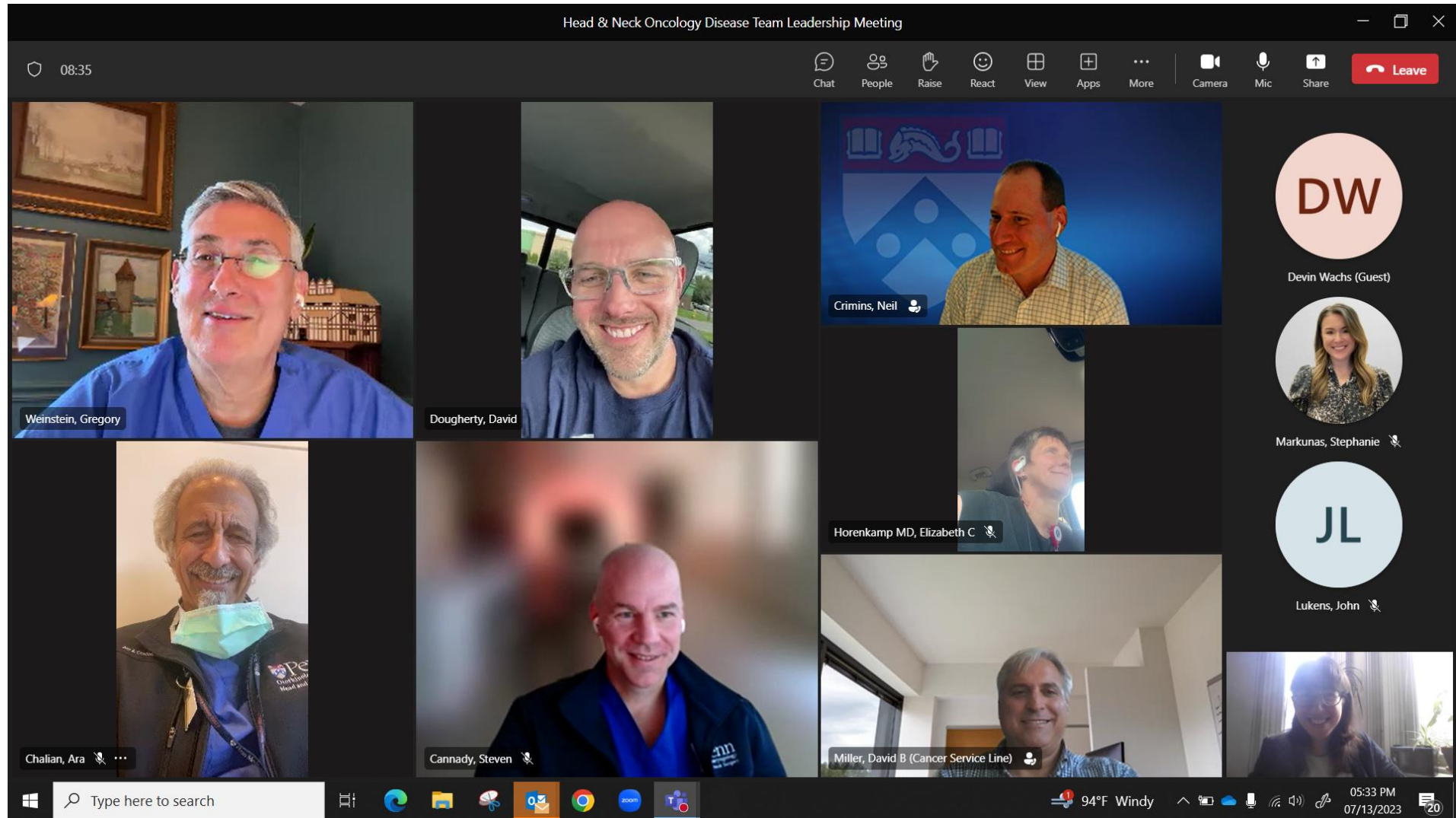
Setting the Vision: *The Cancer System*



Cancer System Priorities: *Penn Cancer Care Everywhere*



Cancer System Structure: *Disease Teams*

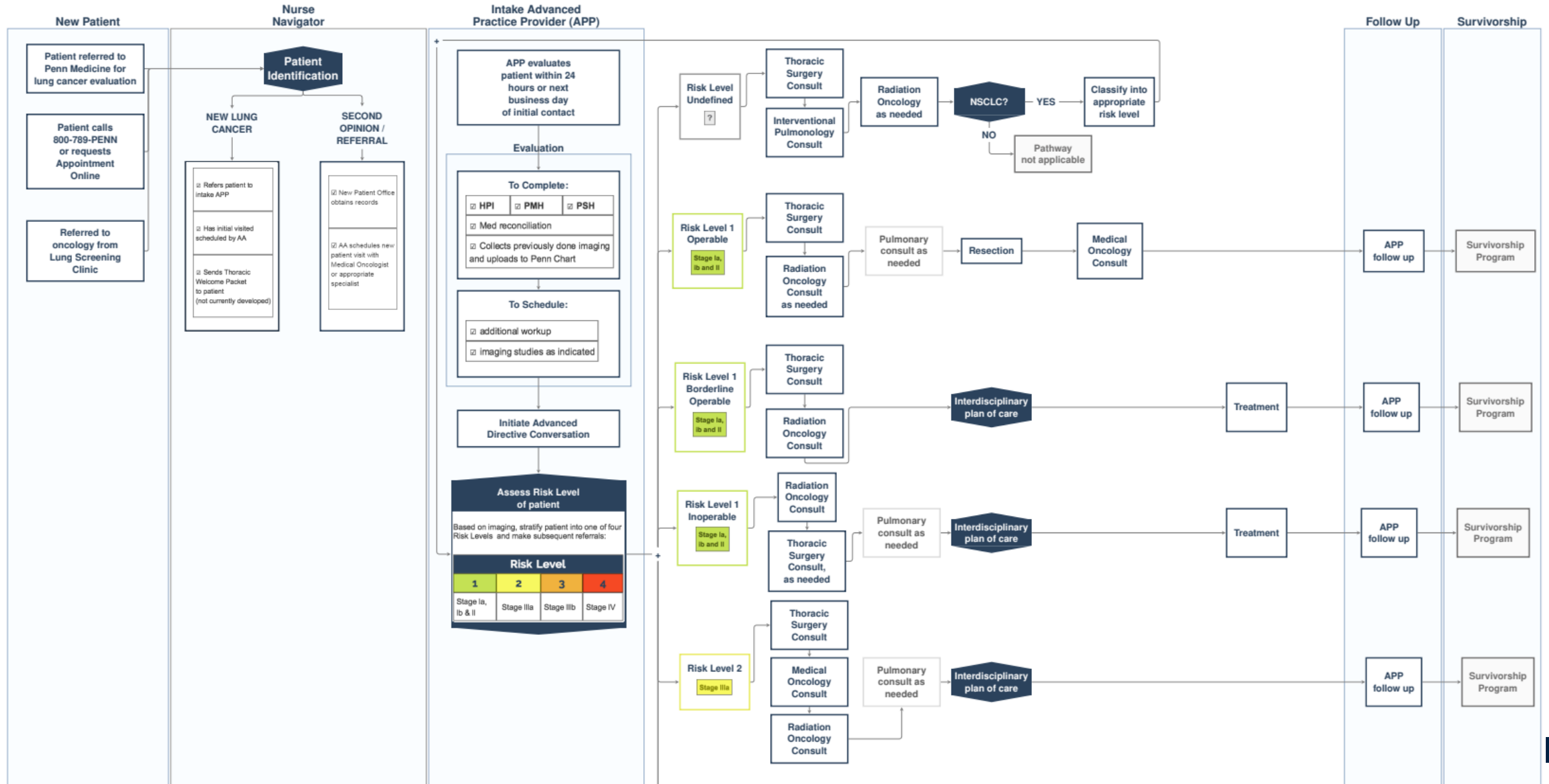


Cancer System Process: *Disease Team Goals*

Diseaes Team	Goal Type	Goal	Measure	Baseline	Target
GI	Access	Increase NPV volume	NPVs	3,256	3% increase
GU	Access	Increase NPV volume	NPVs	3,629	3% increase
Head and Neck	Access	Increase NPV volume	NPVs	1,222	3% increase
Thoracic	Access	Increase NPV volume	NPVs	1,735	3% increase
Heme Malignancies	Access	Increase NPV volume	NPVs	3,343	3% increase
Neuro-Endo	Access	Increase NPV volume	NPVs	449	3% increase

Diseaes Team	Goal Type	Goal	Measure	Baseline	Target
Melanoma	Clinical Trials	Increase clinical trial accruals	Accruals	FY22 Y/E	10% Increase
Sarcoma	Clinical Trials	Increase clinical trial accruals	Accruals	FY22 Y/E	10% increase
Neuro	Clinical Trials	Increase clinical trial accruals	Accruals	FY22 Y/E	7% increase
Gyn Onc	Genetic Testing	Utilization of POLE testing in 2H FY23	% patients tested	N/A	30% utilization
Breast	Biopsy Access	Reduce to time from abnormal mammo to biopsy - PCAM Pilot	Days to next available biopsy	15 days	50% reduction
Endocrine	Pathway Utilization	Improve thyroid nodule FNA pathway concordance within the 3701 Market Internal Medicine practices in Q4 FY23	% Pathway Utilization	N/A	30% Utilization

Process: *Navigation & Pathways*



Structure: *Home Oncology Care Core Strategic Service*

Current Activities

Symptom Management

Anti-Cancer Therapies
(5 FU)

Hybrid Care – Home &
Clinic (Heme-Malig)

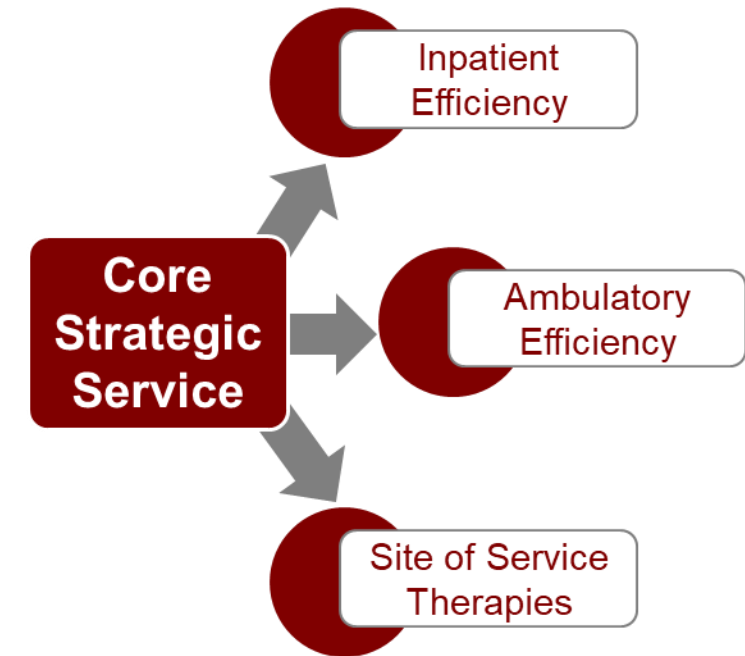
Cancer Treatment at
Home (Lupron & Epoch)

Other Therapies
(Pembro)

Opportunity Exploration

- ▶ Blood Products at Home
 - HUP LOS initiative
- ▶ Urgent Care Services
 - HUP LOS initiative
 - Potential for scalability across HUP, PAH, PPMC, CCH
 - Ambulatory access initiative
- ▶ Home Phlebotomy
 - Ambulatory efficiency initiative
- ▶ Symptom Monitoring
 - HUP LOS initiative
 - Ambulatory efficiency initiative
- ▶ Anti-Cancer Therapy Expansion
 - Site of service initiative

Strategy Development



Structure: *Supportive Care Core Strategic Service*

- ▶ Penn Lancaster OCM experience provides a blueprint for Cancer System preparation for Value-Based Care
- ▶ Transforming cancer care delivery while reducing total cost of care through care team innovation & process improvement, enhanced data systems & EMR optimization, and focus on enriched supportive care
- ▶ CSL Supportive Care Core Strategic Service
 - Penn Medicine Geriatric Oncology Core
 - Penn Medicine Palliative Oncology Core
 - Penn Medicine Cancer Survivorship Core
 - Clinical, Outreach, Research, Education
- ▶ Co-leadership between Penn Philadelphia and other campuses to foster bi-directional integration
- ▶ **CSL FY23 Quality Goal: *Electronic Frailty Screening Tool Implementation***

*Care Innovation Initiated in Regional Programs and Brought into the Cancer System
and Academic Programs*

Financial Strategies: *Survivorship Care Clinic*

Analysis courtesy of Linda Jacobs, PhD, CRNP, FAAN and Neil Crimins
Cancer Survivorship Clinical Program and Strategic Decision Support
Abramson Cancer Center, University of Pennsylvania



Making the Value Case: *Thinking Like an Accountant AND an Economist*

- ▶ Determining the potential population of eligible patients in GI, Breast, Thoracic, GU
 - Source: UPHS EPIC

Disease	Specialty	Physician	>6 Months		>9 Months		>12 Months		>24 Months		>36 Months		>48 Months		>60 Months	
			Post Interventior	No Recurrence	Post Interventior	No Recurrence	Post Interventior	No Recurrence	Post Interventior	No Recurrence	Post Interventior	No Recurrence	Post Interventior	No Recurrence	Post Interventior	No Recurrence
GI Cancer	GI Surgeons	Dr. A	153	124	63	56	62	55	53	49	37	35	23	22	14	14
		Dr. B	70	48	39	27	39	27	30	23	15	12	7	7	3	3
	Colorectal Surgeons	Dr. C	109	71	62	42	40	32	28	24	12	12	4	4	2	2
		Dr. D	98	76	32	26	28	22	22	16	12	10	6	5	3	2
		Dr. E	276	203	81	57	66	52	49	39	24	22	14	14	6	6
		Dr. F	27	20	2	1	2	1	1	1	1	1	1	1	0	0
		Dr. G	58	45	15	10	11	8	7	6	1	1	1	1	0	0
	Rad Onc	Dr. H	155	40	63	18	49	16	36	15	12	7	5	2	1	0
		Dr. I	121	15	46	9	36	9	27	9	9	2	6	0	1	0
		Dr. J	49	21	30	19	28	19	27	19	23	17	20	15	16	11
		Dr. K	143	52	69	37	62	36	57	36	38	23	21	15	12	9
	Med Onc	Dr. L	228	65	62	49	55	47	49	45	30	30	23	23	18	18
		Dr. M	281	61	66	44	51	42	39	35	8	7	6	5	5	4
		Dr. N	159	49	51	40	42	39	37	36	24	23	17	16	4	4
		Dr. O	57	5	2	0	1	0	1	0	0	0	0	0	0	0
		Dr. P	334	101	96	78	83	75	76	71	56	54	30	29	15	14
Per Year																
Unique Patients	Surgery	2,182														
	Radiation Oncology	523														
	Medical Oncology	1,726														

Making the Value Case: *Thinking Like an Accountant AND an Economist*

Advanced Practice Providers			PSR			LPN			
RPV Hours	Radiation Oncolog	0.3	Visits	Radiation Oncolog	4,100	Visits	Radiation Oncolog	4,100	
	Medical Oncology	0.3	per PSR	Medical Oncology	4,100	per LPN	Medical Oncology	4,100	
Per Year			Per Year	Surgery	0.6	Per Year	Surgery	0.6	
				PSRs	Radiation Oncolog	0.2	LPNs	Radiation Oncolog	0.2
Hours	Surgery	1,309			Medical Oncology	0.7		Medical Oncology	0.7
	Radiation Oncolog	314							
	Medical Oncology	1,036							
Per Year			Where the existing staff of PSR and LPN staff are currently seeing X return patient visits in the physician clinic and will now see Y return and new patient visits in the clinic, the difference between these two is an adj to the FTE of PSR and LPN needed to support						
Session	Surgery	328							
Equivalents (4	Radiation Oncolog	79							
Hr. Blocks)	Medical Oncology	259							
Per Year									
	Surgery	44							
Weeks of Work	Radiation Oncolog	44							
	Medical Oncology	44							
Per Week									
	Surgery	10							
Sessions per	Radiation Oncolog	10							
cFTE	Medical Oncology	10							
Per Year									
	Surgery	440							
Sessions per	Radiation Oncolog	440							
cFTE	Medical Oncology	440							
Per Year									
	Surgery	0.9							
FTEs	Radiation Oncolog	0.2							
	Medical Oncology	0.7							

Analysis courtesy of Linda Jacobs, PhD, CRNP, FAAN and Neil Crimins
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Follow Up Care Clinic -- Cancer Patients

Thoracic, Breast, GU, GI Cancer Patients

Version 3

		First Year (No Ramp Up)			
		Surgery	CPUP Radiation Oncolog	Hospitals Medical Oncolog	Thoracic, GI, GU, Breast Cancer
<i>Volume</i>					
Follow Up	Unique Follow Up Clinic Patients	2,182	523	1,726	
	Return Patient Visits (RPV) per Year (Follow Up Clinic)	2.0	2.0	2.0	
	Return Patient Visits	4,364	1,046	3,452	
Physician Clinic Backfill	Hours per Return Patient Visit	0.3	0.3	0.3	
	Physician Clinic Hours to Backfill	1,309	314	1,036	
	New Patient Visits (NPV) per Hour	1.0	1.0	1.0	
	Visit Ratio (RPV: NPV)	2.5	2.9	8.9	
	NPVs Physician Clinic Backfill	784	86	282	
	RPVs Physician Clinic Backfill	1,870	761	2,512	
	Unique New Treated Patients				876
<i>FTEs</i>					
	Advanced Practice Providers (APP)	0.9	0.2	0.7	
	Patient Service Reps (PSR)	0.6	0.2	0.7	
	License Practice Nurse (LPN)	0.6	0.2	0.7	
<i>Net Revenue (NPR)</i>					
	NRP per Return Patient Visit	\$130	\$130	\$130	
	Professional NPR (APP Follow Up Clinic)	\$567,320	\$135,980	\$448,760	
	NPR per New Patient Visit	\$210	\$210	\$210	
	Professional NPR (Difference in Physician Clinic vs. Backfill)	(\$159,580)	(\$18,990)	(\$62,980)	
	<u>Total Professional NPR</u>	<u>\$407,740</u>	<u>\$116,990</u>	<u>\$385,780</u>	
<i>Direct Costs</i>					
	Personnel Costs (Salary+Benefits APP, PSR, LPN)	\$301,061	\$77,619	\$255,487	
	All Other Direct Costs (Supplies, Services, Minor Equipment etc.)	\$32,750	\$10,452	\$34,478	
	<u>Total Direct Costs</u>	<u>\$333,811</u>	<u>\$88,071</u>	<u>\$289,965</u>	
<i>Indirect Costs</i>					
	Overhead (Department, Dean, CPUP, UPHS Corporate)	\$59,815	\$17,162	\$56,594	
	Contribution Margin	\$73,929	\$28,919	\$95,815	\$19,934,715
	Net Gain (Loss)	\$14,114	\$11,757	\$39,221	\$8,141,460

► Department and Hospital/System Components

► Volume Estimates

► Determining the Opportunity Costs

- Physician Visit Backfill
- Incremental New Patients to System
 - 76% Conversion Rate
 - Assumes Unlimited Demand

► Net Revenue Considerations

- Return Visit Revenue Exceeds Physician New Patient Visit Backfill but Total Professional NPR **POSITIVE**
- Aligning Revenue with Team, Not Individual

► Contribution Margin

- Break-Even at Department Level
- Substantial POSTIVE Contribution & Net Margin
 - Average CM & NM per Patient in Disease Teams



Important Challenges & Opportunities

- ▶ Employment Models & Incentives
 - Individual vs Team-Based Productivity
- ▶ Optimal Team Structures
- ▶ Models for Multidisciplinary, Multispecialty Expert Cancer Care
 - Synchronous, Asynchronous, Virtual
- ▶ Expanding Subspecialty Expertise across a Broad Geography/System
 - Fostering Subspecialization in the Community
- ▶ Care Pathways & Navigation
- ▶ Top of License Practice Facilitation
- ▶ Complex Financial Structures within an Integrated “System”
 - Individual vs System Budgeting
 - Investment Before Return vs ROI
- ▶ Value of Operational Metrics
 - New Patient Access
- ▶ Value of Professional Satisfaction & Burnout
- ▶ Data Assets & Information Systems

Structure + Process = Multidisciplinary, Multispecialty Expert Care *at Scale*

