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Health system resource analyses on cancer often focus on a single medical specialty: medical oncology. We show there are at least **24 unique specialties** involved in best practice cancer care; **each cancer type typically has 10 or more**.

## Objectives

Demonstrating the **economic impact** of new technologies often accounts for changes in healthcare resource utilization (HCRU). These analyses are typically limited to specific sites of care (cancer center), specialties (medical oncology), and types of interventions (drug utilization). Broader assessment designs include a larger share of a cancer patient's interactions with the health system from prevention through end-of-life care or post-curative surveillance. This study **aims to determine which cancer types include a broad range of potential sources of HCRU**.

## Methods

We conducted a **literature review** of major cancer guidelines (NCCN and ESMO) across **10 major cancer types** as well as health system cancer strategies across different cancer types in Canada. We reviewed these documents to determine how many specialties were represented in authorship or content. We assessed differences between solid and liquid tumor types.

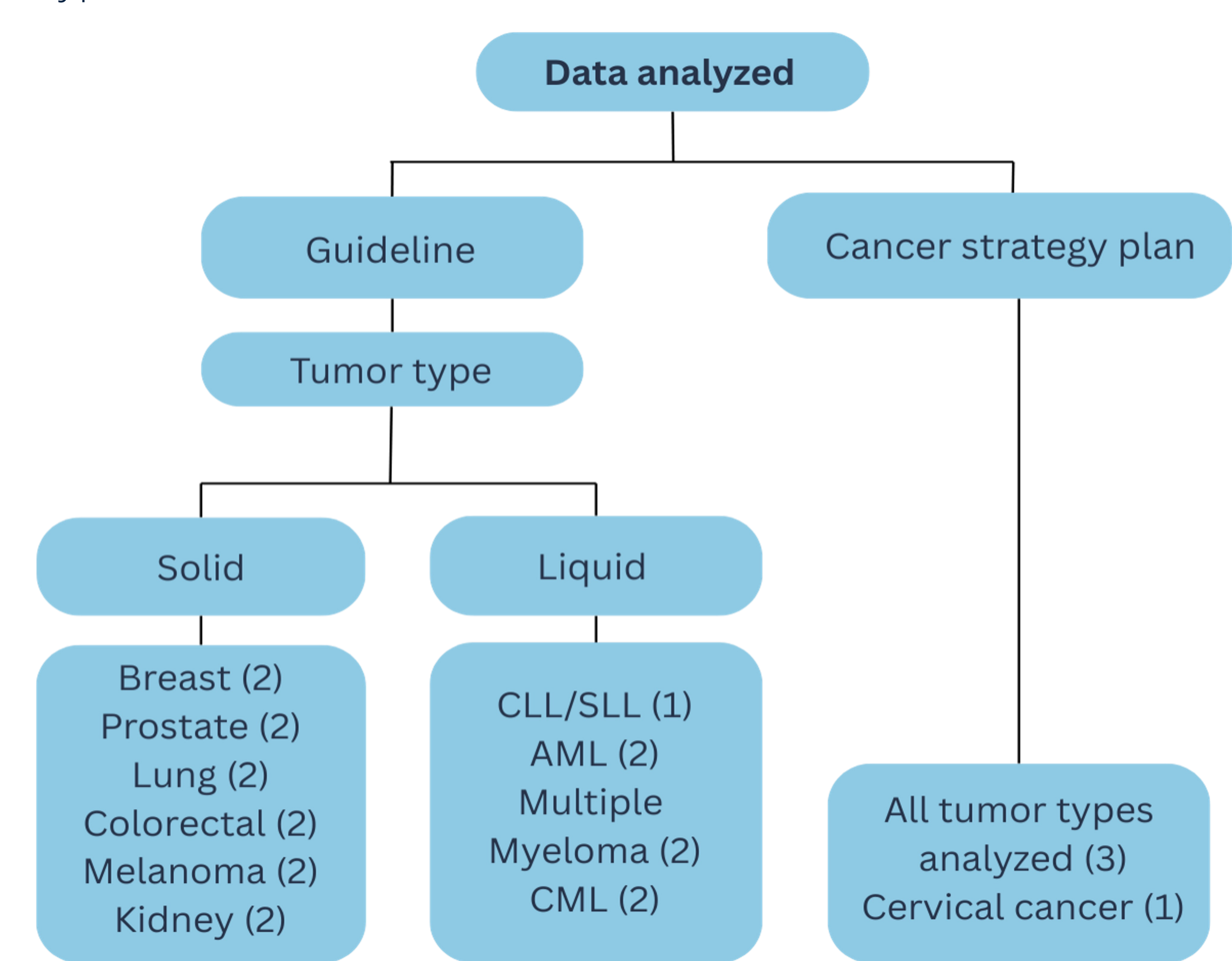


Fig 1. Major cancer guideline/plan types analyzed with numbers of documents reviewed.

## Results

Cancer patients interact with the health system across sites of care and specialties with regularity. While some core specialties (**medical oncology**) play a central role in all cancer types, specialties vary by cancer type with a total of **24 unique** specialties identified. These diverse specialties represent different potential sources of HCRU. **Solid tumor types tended to involve more specialties in the standard of care than liquid tumor types** (11.4 solid vs. 9.1 liquid). Health system cancer strategies also identified **similar numbers of specialties** (12.0) while emphasizing sites of care more often (primary care, community/rehabilitation care).

Speciality	Speciality involvement (% of guidelines which include this specliaty)	Speciality involvement (% of plans which include this specliaty)
Medical oncology	100%	100%
Pathology	100%	75%
Palliative Medicine	80%	75%
Radiation oncology	90%	100%
Haematology	90%	0%
Genetic counselling	45%	75%
Psychology/psychosocial	45%	100%
Primary care	25%	100%
Radiology	85%	100%
Public health/preventative	25%	100%
Community care/rehabilitation	20%	100%
Surgery	60%	75%

Fig 2. Selected medical specialties in patient care with over 75% involvement in either guidelines or plans among all 24 cancer guidelines reviewed.

## Conclusions

New technologies introduced within oncology may impact HCRU in many different aspects of care. A **“whole-of-health-system”** approach to assessing economic value is recommended in situations where a comprehensive, holistic assessment is appropriate, such as engagement with health system stakeholders and creating a value narrative that appeals to a wide range of system stakeholders including and going beyond medical oncology.

## Case study

We applied this methodology working with a pharma company to identify eight sources of healthcare utilization across five health systems for an oncology therapeutic. The analysis showed that introducing the drug would increase hours for medical oncologists in cancer centers, but **decrease hours in primary care**.

Activity	Workforce	Setting of care	SoC	Drug 1	Drug 2
Treatment planning (med onc)	Medical oncology	Physician CC	0.75	4.50	4.50
Follow-up visit (med onc)	Medical oncology	Physician CC	-	-	-
Follow-up visit (primary care)	Primary care	Primary ex-CC	0.56	-	-
Cardiologist consults	Cardiology	Physician ex-CC	-	0.03	-
Specialist supportive care	Other specialist	Physician ex-CC	0.02	0.06	0.07
Laboratory testing	Non-physician caregivers	Other caregiver	0.01	6.00	3.00
ECG testing	Cardiology	Other caregiver	-	1.50	-
Psychosocial support	Nurse and social work team	Other caregiver	-	-	-
Total			0.78	12.08	7.57
vs SoC			1.0x	15.6x	7.57x

Fig 3. Health system capacity required to deliver care for each cancer patient (Hours).  
\*CC (cancer center)  
\*ex-CC (external cancer center)