Assessing cancer system performance in Mexico:

Results from the pilot implementation of the All.Can Action Guide

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Executive Summary

This report presents the results of the pilot implementation of the All.Can Action Guide in Mexico, with the objective of identifying system-level bottlenecks and priority investment areas to improve the efficiency, coordination, and patient-centredness of cancer care. The assessment provides decision-makers with a structured, evidence-informed diagnostic of where existing resources and policies are generating value—and where targeted reforms and investments could yield the greatest impact.

Using a stakeholder-informed framework, the pilot evaluates three critical dimensions of cancer system performance: timeliness of care, coordination of care, and patient-centredness. These dimensions were selected because delays, fragmentation, and poor patient experience are consistently associated with avoidable morbidity, inefficient use of resources, and inequities in cancer outcomes. The analysis focuses on the *availability of system enablers* rather than clinical outcomes, allowing policymakers and funders to identify upstream levers for change.

Key findings

1. Timeliness of care: strategic intent exceeds operational execution

Mexico shows moderate system readiness to support timely cancer care, with several strategic and regulatory instruments already in place. National cancer strategies, regulatory alignment, and selected financing mechanisms are perceived as available and functional. However, these strengths are not consistently translated into operational tools that directly reduce delays in care.

Key constraints include the limited availability of formal waiting-time standards, weak governance accountability, incomplete interoperability across data systems, and insufficient use of effectiveness data for performance management. While cancer registries and mandatory reporting mechanisms exist, critical enablers—such as unique patient identifiers, systematic staging data, and real-time monitoring—remain underdeveloped. These gaps limit the system's ability to detect delays early, manage patient pathways, and hold providers accountable for timely access.

2. Coordination of care: structural fragmentation persists despite institutional assets

Coordination of cancer care remains one of the most constrained domains, with fragmentation across workforce policy, service organisation, and referral pathways. Although multidisciplinary tumour boards and comprehensive cancer centres are present in many settings, their population coverage, standardisation, and monitoring are inconsistent, reducing their system-wide impact.

Workforce capacity emerges as a critical bottleneck. While monitoring of workforce shortages exists, it is not consistently accompanied by policy action, sustainable financing, or effective referral communication mechanisms. Oncology nursing and patient navigation—both high-value, cost-effective coordination functions—are only partially institutionalised, with limited regulatory support and weak integration into performance frameworks. Task sharing and substitution show growing political recognition but remain insufficiently regulated and implemented, constraining their potential to mitigate specialist shortages.

3. Patient-centredness: measurement is advancing faster than system use

Patient-centred principles are increasingly recognised at the policy level, particularly in relation to patient involvement in governance, shared decision-making, and the collection of patient-reported experience measures (PREMs). However, patient-reported outcomes (PROMs) remain weakly integrated into national strategies, registries, and performance management systems.

While PROMs are increasingly captured within electronic health records, their systematic use for quality improvement, accountability, and incentive mechanisms is limited. This disconnect reduces the return on existing investments in data collection and constrains the ability of the system to respond to patient needs in a structured and measurable way.

Implications for decision-makers

The pilot implementation highlights a consistent pattern across all three clusters: Mexico has invested in strategies, institutions, and selected data systems, but has not yet fully converted these investments into integrated, performance-driven cancer care delivery.

For policymakers and funders, this creates a clear opportunity space. High-impact investments are likely to be those that:

- Strengthen governance and accountability mechanisms that link existing strategies to measurable performance targets;
- Improve data interoperability, patient identification, and real-time monitoring to support timely and coordinated care;
- Institutionalise workforce coordination tools such as patient navigation, oncology nursing roles, and task sharing through regulation and sustainable financing;
- Embed patient-reported data into routine decision-making, quality improvement, and incentive frameworks.

The All.Can Action Guide pilot demonstrates its value as a practical decision-support tool to prioritise reforms, guide strategic investment, and establish a baseline for monitoring progress over time. By focusing on system enablers rather than isolated interventions, this assessment provides funders and decision-makers with actionable insights to improve efficiency, equity, and patient outcomes in cancer care in Mexico.

Background and Rationale

Cancer is one of the leading causes of morbidity and mortality worldwide, with its burden increasing steadily as a result of population ageing, epidemiological transition, and improvements in survival (GBD 2021 Diseases and Injuries Collaborators, 2022). While advances in prevention, early detection, and treatment have transformed cancer into a chronic condition for many patients, health systems continue to face substantial challenges in delivering timely, coordinated, and patient-centred care (WHO, 2020; OECD, 2023).

Inefficiencies across cancer care pathways represent a major barrier to achieving optimal outcomes. These inefficiencies arise at multiple stages of the continuum of care, including delays in diagnosis, fragmented referral pathways, duplication of services, insufficient coordination across providers, and limited integration of patient-reported information into clinical and managerial decision-making (All.Can International, 2020; OECD, 2023). Beyond their impact on clinical outcomes, such inefficiencies contribute to avoidable patient suffering and place significant pressure on already constrained health system resources.

Importantly, efficiency in cancer care should not be understood solely as cost containment. Rather, it refers to the optimal use of available resources to maximise health outcomes and patient experience, consistent with the principles of value-based health care (Porter, 2010; All.Can International, 2020). Inefficiencies may therefore coexist with high levels of spending, particularly in fragmented systems where incentives and governance structures are poorly aligned with patient-centred care delivery.

The All.Can initiative was established to address these challenges by promoting a value-based and patient-centred approach to cancer care efficiency. The All.Can Action Guide provides a structured yet adaptable framework to identify inefficiencies across the cancer care pathway, focusing on three interrelated dimensions: timeliness of care, coordination of care, and patient-centredness (All.Can International, 2020). Rather than prescribing a single model of reform, the Action Guide supports context-specific assessment and encourages multi-stakeholder dialogue grounded in empirical evidence.

Mexico represents a particularly relevant setting for the application of the All.Can Action Guide. The Mexican health system is characterised by institutional fragmentation, heterogeneous coverage arrangements, and pronounced socioeconomic and geographic inequalities (OECD, 2016; Knaul et al., 2012). Despite important efforts to expand access to health services over recent decades, significant challenges remain in ensuring timely cancer diagnosis, continuity of care, and equitable access to specialised treatment, particularly for populations without social security coverage.

Evidence from Mexico indicates that delays in cancer diagnosis and treatment initiation are common, especially among uninsured populations and those living in rural or marginalised areas (Frenk et al., 2019; Unger-Saldaña, 2014). Referral pathways are often complex and poorly coordinated, leading to repeated consultations, diagnostic delays, and discontinuity of care. Shortages and unequal distribution of specialised personnel, limited availability of comprehensive oncology services, and weak information systems further constrain system performance (OECD, 2016; Knaul et al., 2021).

Recent institutional reforms and the COVID-19 pandemic have exacerbated these challenges. Service disruptions, reallocation of resources, and delays in screening and treatment during the pandemic have generated diagnostic backlogs and worsened outcomes for many cancer patients (Maringe et al., 2020; GBD 2021 Cancer Collaborators, 2022). These shocks have highlighted the limited resilience of cancer care delivery and the underlying inefficiencies embedded within the system.

From a policy perspective, addressing inefficiencies in cancer care is critical for advancing universal health coverage and ensuring financial protection. Cancer care is resource-intensive and requires sustained investments across the care continuum. Inefficiencies not only reduce the value generated by these investments but also increase the risk of catastrophic health expenditures for households, particularly when services are fragmented or inadequately covered (Knaul et al., 2012; Wagstaff et al., 2018). Improving efficiency is therefore central to both health system sustainability and equity.

International experience demonstrates that system-level approaches focusing on integration, coordination, and patient-centredness can yield meaningful efficiency gains. The pilot implementation of the All.Can Action Guide in Greece illustrated how a structured, indicator-based framework can identify inefficiencies and support evidence-informed dialogue among policymakers, providers, and patient organisations (Vozikis & Athanasakis, 2022). Crucially, the Greek experience showed that inefficiencies often stem from governance and system design issues rather than isolated operational failures.

Building on this experience, the Mexican pilot aims to adapt and apply the All.Can Action Guide to a middle-income country context marked by fragmentation and inequality. By systematically assessing inefficiencies across key dimensions of cancer care, the pilot seeks to generate actionable insights to inform national and subnational policy discussions, support health system strengthening, and contribute to the global evidence base on cancer care efficiency. Consistent with All.Can principles, particular emphasis is placed on incorporating patient perspectives and fostering multi-stakeholder engagement.

In this context, the rationale for the Mexican pilot is threefold. First, it addresses an urgent need to better understand where inefficiencies arise along cancer care pathways beyond aggregate measures of spending or coverage. Second, it provides a structured approach to linking efficiency assessment with policy-relevant questions related to access, equity, and system performance. Third, it positions Mexico within a growing international effort to reframe cancer care discussions from cost containment toward value creation grounded in patient outcomes and experiences (Porter, 2010; All.Can International, 2020).

Methods and Pilot Implementation

Study design and analytical framework

This project adopted a mixed-methods, descriptive and analytical design to assess inefficiencies along the cancer care pathway in Mexico, following the methodological framework proposed in the All.Can Action Guide (All.Can International, 2020). The analysis focused on identifying system-level inefficiencies related to timeliness, coordination, and patient-centredness, rather than evaluating clinical effectiveness or cost-effectiveness of specific interventions.

Consistent with the approach used in the Greek pilot implementation (Vozikis & Athanasakis, 2022), the Mexican study combined quantitative indicators derived from secondary data sources with qualitative insights obtained through structured stakeholder engagement. This design allows for triangulation of evidence and facilitates interpretation of inefficiencies within their institutional and policy context (OECD, 2017).

The unit of analysis was the cancer care pathway, defined from first symptom recognition or screening contact through diagnosis, initiation of treatment, and follow-up care. The analysis did not aim to cover all cancer types comprehensively, but rather to assess cross-cutting system features that affect cancer care delivery broadly.

Adaptation of the All.Can Action Guide to the Mexican context

The All.Can Action Guide provides a flexible framework intended to be adapted to country-specific contexts (All.Can International, 2020). For the Mexican pilot, an initial scoping exercise was conducted to identify priority inefficiency areas based on existing evidence, policy relevance, and data availability.

This adaptation process considered the structural characteristics of the Mexican health system, including its institutional fragmentation across social security schemes and services for the uninsured, as well as known gaps in cancer service availability and information systems (OECD, 2016; Knaul et al., 2021). Particular attention was paid to ensuring that selected indicators could capture disparities in access and continuity of care across population groups.

Indicators were mapped to the three core dimensions of the All.Can framework:

1. Timeliness of care, including delays in diagnosis and treatment initiation;
2. Coordination of care, including referral pathways, continuity between levels of care, and information exchange; and
3. Patient-centredness, including patient experience, access to information, and engagement in care decisions.

Data sources and quantitative indicators

Quantitative indicators were drawn from multiple secondary data sources to ensure national coverage and comparability over time. These included administrative health statistics, national cancer registries where available, population-based surveys, and published reports from national and international institutions.

Key sources included data from the Ministry of Health, social security institutions, and national statistical agencies, complemented by international databases such as the Global Burden of Disease Study for contextual benchmarking (GBD 2021 Cancer Collaborators, 2022). Where possible, indicators were aligned with those used in the Greek pilot to facilitate methodological consistency (Vozikis & Athanasakis, 2022).

Indicators were selected based on relevance to inefficiency domains, data quality, and interpretability for policy discussions. Given limitations in data integration and availability in Mexico, the analysis prioritised descriptive statistics and trend analysis rather than causal inference. This approach is consistent with previous system-level efficiency assessments in cancer care (OECD, 2017; All.Can International, 2020).

Qualitative component and stakeholder engagement

To complement the quantitative findings, a qualitative component was implemented through structured stakeholder engagement. This process involved representatives from patient organisations, clinicians, health system managers, policymakers, and researchers with expertise in oncology and health systems, ensuring a multisectoral and nationally representative perspective.

Stakeholder engagement was conducted using breast cancer as a tracer condition, reflecting its relevance for assessing cancer system performance and its sensitivity to delays, coordination failures, and patient experience across the care continuum. A total of 15 stakeholders participated, including decision-makers and policymakers, government agents, clinical experts, academics, and patients and/or civil society organisations, allowing for triangulation of perspectives across policy, service delivery, research, and lived experience.

Stakeholder discussions were guided by the All.Can Action Guide and focused on three main objectives:

(1) validating quantitative findings;
(2) identifying bottlenecks not fully captured by existing indicators; and
(3) exploring potential institutional, organisational, and resource-related drivers of inefficiency within the cancer care pathway (All.Can International, 2020).

Particular emphasis was placed on incorporating patient perspectives, consistent with international evidence highlighting the importance of patient-reported experiences and outcomes in identifying inefficiencies, improving care delivery, and strengthening accountability within health systems (OECD, 2017; WHO, 2020).

Insights from stakeholder engagement were synthesised thematically and used to contextualise and interpret quantitative results, rather than being treated as standalone qualitative outcomes. This integrative approach mirrors the methodology applied in the Greek pilot implementation of the All.Can Action Guide, where structured stakeholder dialogue was central to translating descriptive system assessments into actionable insights for policy and system reform (Vozikis & Athanasakis, 2022).

Analytical approach

The analysis proceeded in three sequential stages. First, quantitative indicators were analysed descriptively to identify patterns, variation, and potential inefficiencies across the cancer care pathway. Second, findings were organised according to the All.Can framework dimensions—timeliness of care, coordination of care, and patient-centredness—to ensure conceptual coherence and comparability across domains. Third, qualitative insights derived from stakeholder engagement were integrated to interpret observed inefficiencies in light of institutional arrangements, governance structures, and resource constraints.

Rather than ranking inefficiencies or assigning composite efficiency scores, the study prioritised transparency, interpretability, and policy relevance. This analytical choice reflects the recognition that efficiency is highly context-dependent and that overly aggregated metrics may obscure critical system-level dynamics relevant for decision-making, investment prioritisation, and system reform (OECD, 2017; Porter, 2010).

Ethical considerations

The study relied exclusively on secondary, anonymised data sources and did not involve the collection of individual-level identifiable information. Stakeholder engagement activities were conducted on a voluntary basis and focused on professional perspectives rather than personal health information. As such, formal ethical approval was not required, consistent with international practice for policy-oriented health system analyses (WHO, 2020).

Alignment with international experience

Methodologically, the Mexican pilot was explicitly informed by the Greek pilot implementation of the All.Can Action Guide, which demonstrated the feasibility of applying a structured efficiency framework in a real-world policy context (Vozikis & Athanasakis, 2022). While differences in health system organisation limit direct comparability, maintaining alignment in analytical logic enhances the contribution of the Mexican case to the broader All.Can evidence base.

Results

Cluster 1: Timeliness of care

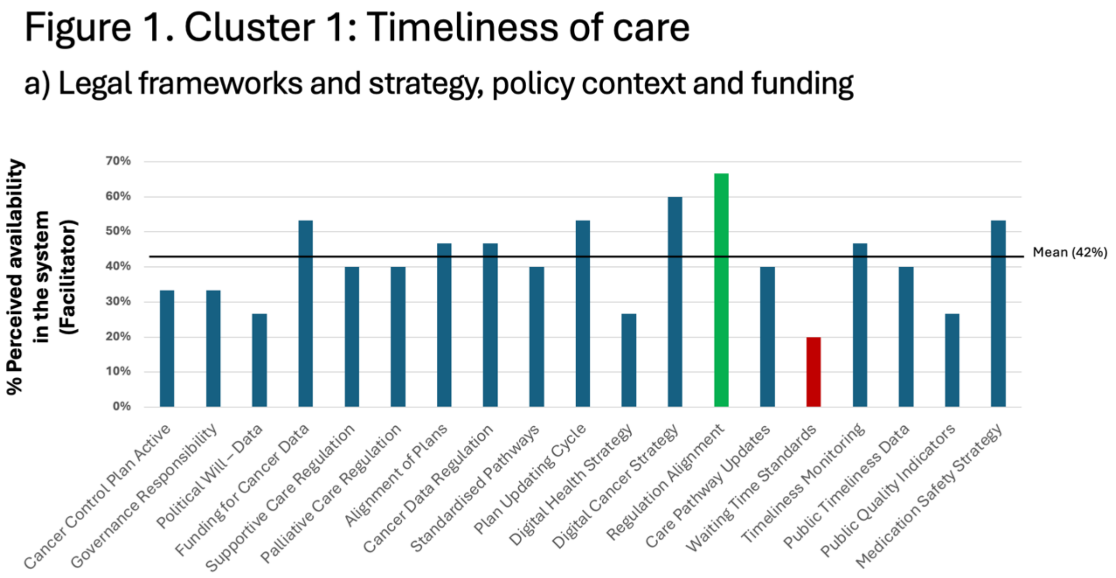
Timeliness of care focuses on the system-level enablers that support timely delivery of cancer care across the continuum, from early detection and diagnosis to prompt initiation of treatment and follow-up. This cluster comprises three complementary components: (a) legal frameworks and strategy, policy context, and funding, which capture the extent to which regulatory, strategic, and financing instruments are in place to prioritise timeliness; (b) data governance, reflecting the availability of infrastructure and interoperability to collect, integrate, and manage clinical and system-level information; and (c) data use and performance monitoring, which assesses the degree to which data are actively used to monitor delays, manage performance, and inform decision-making aimed at improving the timeliness of care

1.a Legal frameworks and strategy, policy context, and funding

This sub-dimension examines the extent to which cancer care timeliness is embedded within national legal frameworks, strategic plans, and policy instruments, as well as the adequacy and alignment of financing mechanisms to support these objectives. It assesses whether countries have explicit cancer control strategies with measurable targets related to timely diagnosis and treatment, dedicated budget lines, and regulatory frameworks that enable coordinated action across levels of care. Strong performance in this area reflects not only the formal existence of policies and laws, but also their coherence with funding arrangements that sustain implementation and reduce structural delays in cancer pathways

Figure 1 summarises stakeholder perceptions of system-level facilitators related to cancer care timeliness. Overall, the average perceived availability across indicators was 42%, highlighting moderate but uneven system readiness within this cluster.

Figure 1. Cluster 1: Timeliness of care – a) Legal frameworks and strategy, policy context and funding



Higher perceived availability was reported for strategic and regulatory elements, including *Digital cancer strategy* (60%), *Funding for cancer data* (53%), *Plan updating cycles* (53%), and *Alignment* *of plans* (46%). These findings suggest that, from a policy and planning perspective, core strategic instruments are present in the system and are relatively well recognized by stakeholders.

In contrast, governance and political commitment dimensions showed substantially lower perceived availability. Indicators such as *Political will – data* (26%), *Digital health strategy* (26%), *Cancer control plan active* (33%), and *Governance responsibility* (33%) fell well below the cluster mean. This pattern points to gaps between the existence of formal strategies and their perceived operationalization or ownership within the health system.

Marked heterogeneity was also observed across regulatory mechanisms. While *Regulation alignment* displayed the highest perceived availability within the cluster (66%), *Waiting time standards* represented a notable outlier, with only 20% of respondents identifying this as available, indicating limited formalization or enforcement of time-based access standards.

Finally, transparency and accountability tools related to system performance showed mixed results. *Timeliness monitoring* (46%) exceeded the cluster mean, whereas *Public timelines data* (40%) and *Public quality indicators* (26%) remained below average, suggesting partial development of monitoring systems with limited public dissemination.

Taken together, the results from Figure 1 indicate that, within the domain of timeliness of care, Mexico demonstrates stronger perceived availability of strategic planning and regulatory alignment instruments than of governance, political commitment, and operational accountability mechanisms. This imbalance may constrain the translation of existing policy frameworks into consistent, timely cancer care delivery.

1.b Data governance

Data governance is a critical enabler of timely cancer care, as it underpins the ability of health systems to generate, integrate, and use information across the care pathway. Within Cluster 1, this domain captures the availability of core data infrastructures, registries, interoperability mechanisms, and patient-level identifiers required to support coordination, monitoring, and continuity of cancer services.

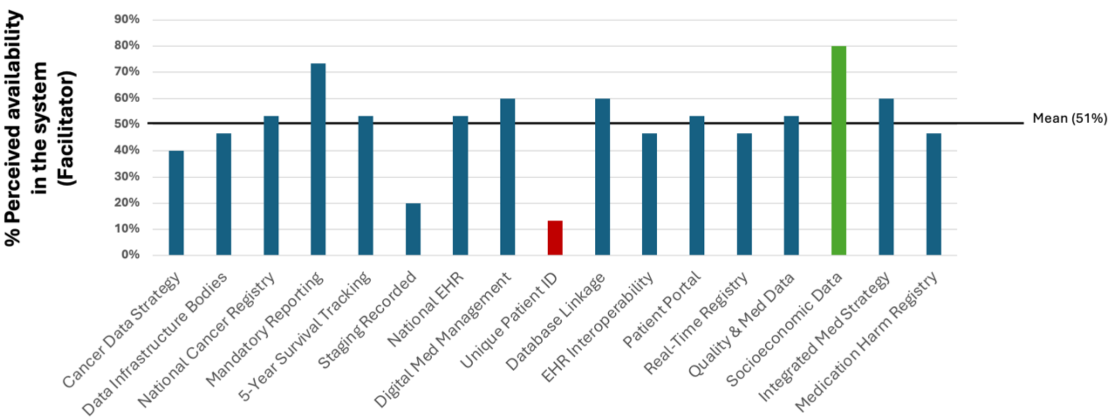
Figure 2 presents stakeholder perceptions regarding the availability of data governance structures supporting timely cancer care. Across all indicators included in this sub-cluster, the average perceived availability was 51%, indicating a moderately higher level of system readiness compared with the legal and policy framework domain presented in Figure 1.

Several foundational data components were perceived as relatively well established. *Mandatory reporting* showed high availability (73%), followed by *National cancer registry* (53%) and *5-year survival tracking* (53%). Similarly, *Digital medical data* and *Integrated medical strategy* both reached 60%, suggesting that core reporting and data management functions are broadly in place.

Figure 2. Cluster 1: Timeliness of care – b) Data governance

Figure 2. Cluster 1: Timeliness of care

b) Data governance



In contrast, substantial gaps were observed in key elements required for longitudinal and coordinated care. *Staging recorded* exhibited low perceived availability (20%), indicating limited systematic documentation of disease stage at diagnosis. Even more pronounced was the low availability of a *Unique patient ID* (13%), representing a major constraint for patient tracking, data linkage, and continuity of care across providers.

Indicators related to interoperability showed mixed performance. While *Database linkage* reached 60%, *EHR interoperability* remained below the cluster mean (46%). Patient-facing tools such as *Patient portals* (53%) and system-level functions such as *Real-time registry* (46%) also showed only partial availability.

The highest perceived availability within this sub-cluster was observed for *Socioeconomic data* (80%), highlighting strong recognition of contextual information relevant to equity analyses. However, this contrasts with lower availability of *Quality and medical data* (53%) and *Medication harm registry* (46%), which are essential for outcome monitoring and patient safety.

Overall, the results in Figure 2 indicate that while Mexico demonstrates moderate strength in core cancer data infrastructure, persistent weaknesses in patient identification, staging completeness, interoperability, and real-time data use may limit the capacity of existing systems to fully support timely and coordinated cancer care.

1.c Data use and performance monitoring

Beyond the existence of legal frameworks and data infrastructure, the effectiveness of timely cancer care depends critically on how data are actively used for monitoring, feedback, and performance improvement. This sub-domain within Cluster 1 focuses on the operational use of information to track timeliness, identify system bottlenecks, and support learning mechanisms across the cancer care pathway.

Figure 3. Cluster 1: Timeliness of care – c) Data use and performance monitoring

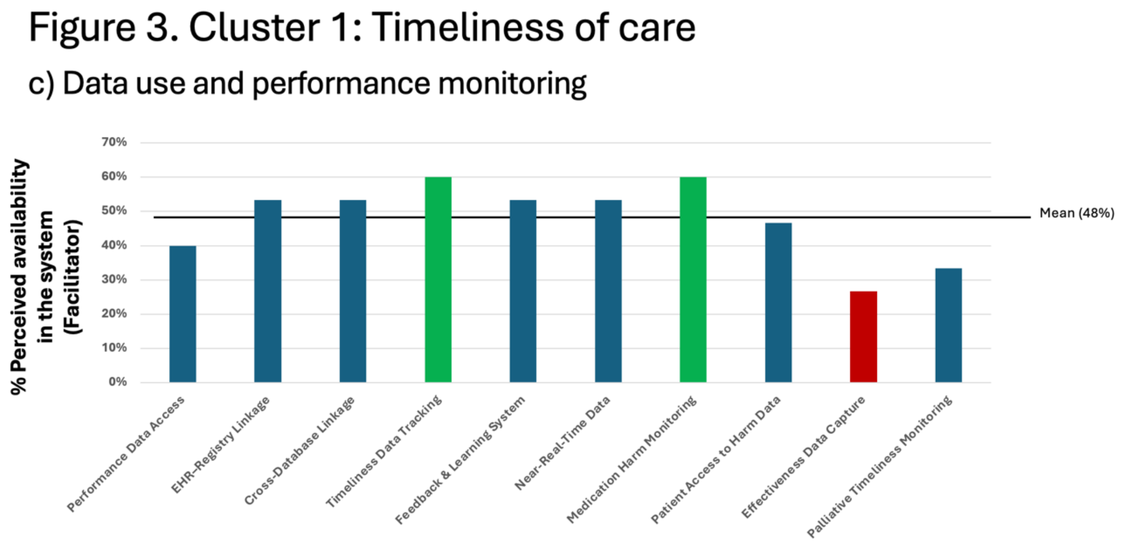


Figure 3 summarises stakeholder perceptions regarding the availability of mechanisms for data use and performance monitoring. The overall mean perceived availability for this sub-cluster was 48%, indicating a moderate but uneven capacity to translate data into actionable insights for improving timeliness of care.

Several system-level functions related to data integration showed relatively higher availability. *EHR–registry linkage* and *Cross-database linkage* were both perceived as available in 53% of cases, suggesting that basic connections between clinical and registry data exist. Similarly, *Feedback and learning systems* reached 53%, reflecting partial implementation of mechanisms to review and respond to performance information.

Timeliness-specific monitoring functions showed mixed performance. *Timeliness data tracking* and *Medication harm monitoring* were among the strongest indicators, both reaching 60%, indicating comparatively better availability of tools to track delays and medication-related safety issues. *Near-real-time data* also exceeded the cluster mean (53%), suggesting some capacity for more responsive system monitoring.

In contrast, notable gaps were observed in patient-centred and outcome-focused data use. *Performance data access* was reported at 40%, while *Patient access to harm data* reached only 47%, pointing to limited transparency and patient engagement in safety and quality monitoring. Most critically, *Effectiveness data capture* showed very low perceived availability (27%), representing a major constraint on the ability to assess whether timely care translates into improved clinical outcomes.

Palliative timeliness monitoring also remained below the cluster mean (33%), highlighting insufficient tracking of delays and access issues in palliative care services, an area particularly sensitive to timeliness failures.

Overall, the results in Figure 3 suggest that while Mexico has made progress in establishing certain monitoring and tracking functions, the systematic use of data to assess effectiveness, support patient-centred transparency, and close feedback loops remains limited. These gaps may undermine the capacity of existing data systems to fully support continuous performance improvement in timely cancer care.

Conclusions of Cluster 1

Across Figures 1–3, the findings for Cluster 1 reveal a moderate but fragmented level of system readiness to support timely cancer care. While several strategic and regulatory elements are present in a substantial share of systems, their availability is inconsistent across domains, resulting in uneven performance along the care pathway.

At the level of legal frameworks, strategy, and funding (Figure 1), the overall mean availability of facilitators stands at 42%, indicating that foundational policy instruments—such as cancer control plans, regulatory alignment, and funding mechanisms—are present in many systems but rarely comprehensive. Notably, strategic alignment and regulation-related indicators tend to score higher than operational instruments such as waiting time standards and systematic monitoring, suggesting that policy intent is more developed than enforcement and measurement.

The data governance dimension (Figure 2) shows comparatively stronger performance, with a mean availability of 51%, driven by higher presence of national cancer registries, mandatory reporting, and digital health infrastructure. However, gaps persist in key enabling components, including real-time registries, unique patient identifiers, and systematic staging data, which are essential for tracking timeliness across the full continuum of care.

Finally, data use and performance monitoring (Figure 3) reveals that although mechanisms such as EHR–registry linkage and near–real-time data are available in roughly half of systems, the translation of data into actionable performance management remains limited. Indicators related to effectiveness data capture and palliative care timeliness consistently fall below the cluster mean, underscoring weaknesses at the later stages of the care pathway.

Taken together, Cluster 1 highlights a pattern in which strategic intent and data infrastructure are more developed than operational execution and continuous performance monitoring, limiting the ability of cancer systems to systematically identify and address delays in care delivery.

Cluster 2: Coordination of care

Cluster 2 examines the extent to which coordination mechanisms are embedded within the cancer care system. This cluster focuses on the organisational and human resource capacities required to ensure continuity of care across services and levels of the health system. It encompasses six interrelated domains: (a) workforce capacity, (b) oncology nursing, (c) cancer patient navigators, (d) task sharing and substitution, (e) multidisciplinary tumour boards, and (f) comprehensive cancer centres. Together, these elements capture the system's ability to coordinate clinical pathways, align professional roles, and reduce fragmentation in cancer care delivery.

2.a workforce capacity

Within Cluster 2, *workforce capacity* captures the system's ability to ensure that an adequate, well-supported, and appropriately coordinated oncology workforce is available to deliver timely and continuous cancer care. This sub-domain focuses on the presence of policies and mechanisms related to workforce planning, monitoring of shortages, staff well-being, referral communication, and financing arrangements that support coordination across services. Workforce capacity is a foundational element for effective care coordination, as deficits in human resources or weak governance structures can undermine the functioning of multidisciplinary teams and continuity along the cancer care pathway.

Figure 4. Cluster 2: Coordination of care – a) Workforce capacity

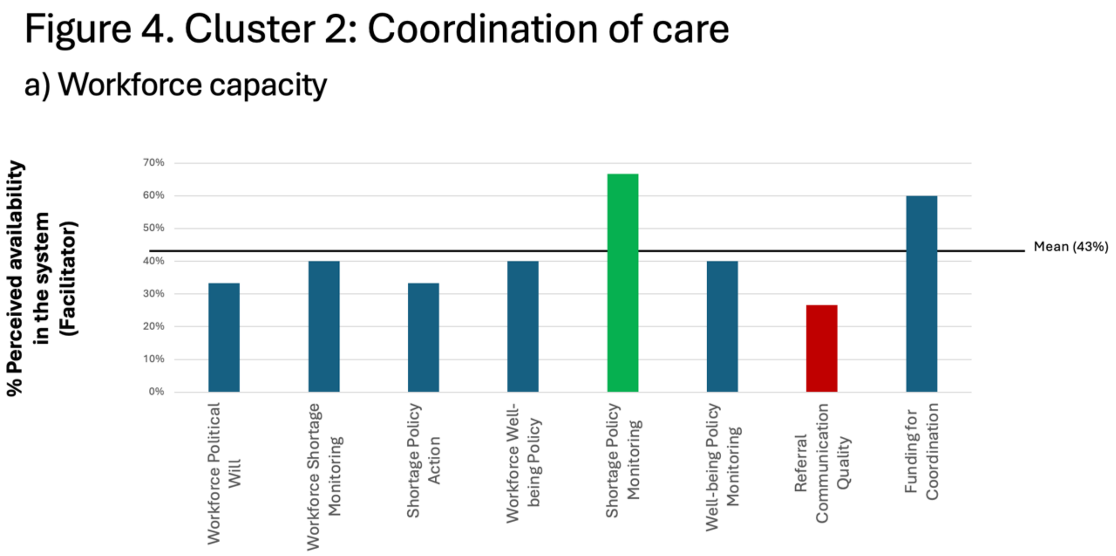


Figure 4 presents stakeholder perceptions regarding the availability of workforce-related coordination mechanisms within the cancer care system. The overall mean perceived availability for this sub-domain was 43%, indicating moderate but uneven capacity to plan, monitor, and coordinate the oncology workforce.

Several foundational elements related to workforce governance were reported below the cluster mean. *Workforce political will* and *shortage policy action* both showed perceived availability of 33%, suggesting limited translation of political commitment into concrete workforce interventions. Similarly, *workforce shortage monitoring* and *workforce well-being policy* were each reported at 40%, indicating partial but incomplete implementation of mechanisms to track workforce gaps and support staff sustainability.

In contrast, *shortage policy monitoring* emerged as the strongest component within this sub-domain, with 67% perceived availability, substantially exceeding the cluster mean. This suggests that while monitoring of workforce shortages exists, it is not consistently accompanied by corresponding policy action or workforce expansion strategies.

Two additional areas revealed important coordination gaps. *Referral communication quality* was reported at 27%, representing the lowest perceived availability within this sub-domain and highlighting weaknesses in information exchange between services. Conversely, *funding for coordination* reached 60%, indicating that financial resources for coordination activities are more frequently perceived as available than the operational mechanisms required to effectively deploy them.

Overall, the results shown in Figure 4 indicate an imbalance between monitoring capacity, funding availability, and actionable workforce policies. While certain coordination inputs are present, limitations in workforce planning, communication quality, and policy execution may constrain effective coordination of cancer care across the system.

2.b Oncology nurses

Oncology nurses are a central pillar of care coordination within cancer systems, acting as continuous points of contact for patients across diagnosis, treatment, and follow-up. Their roles extend beyond clinical care to include patient education, symptom management, treatment adherence, and navigation across services. Adequate regulation, workforce density, monitoring of nurse-to-patient ratios, and the use of digital tools are therefore critical for ensuring coordinated, patient-centred cancer care.

Figure 5. Cluster 2: Coordination of care – b) Oncology nurses

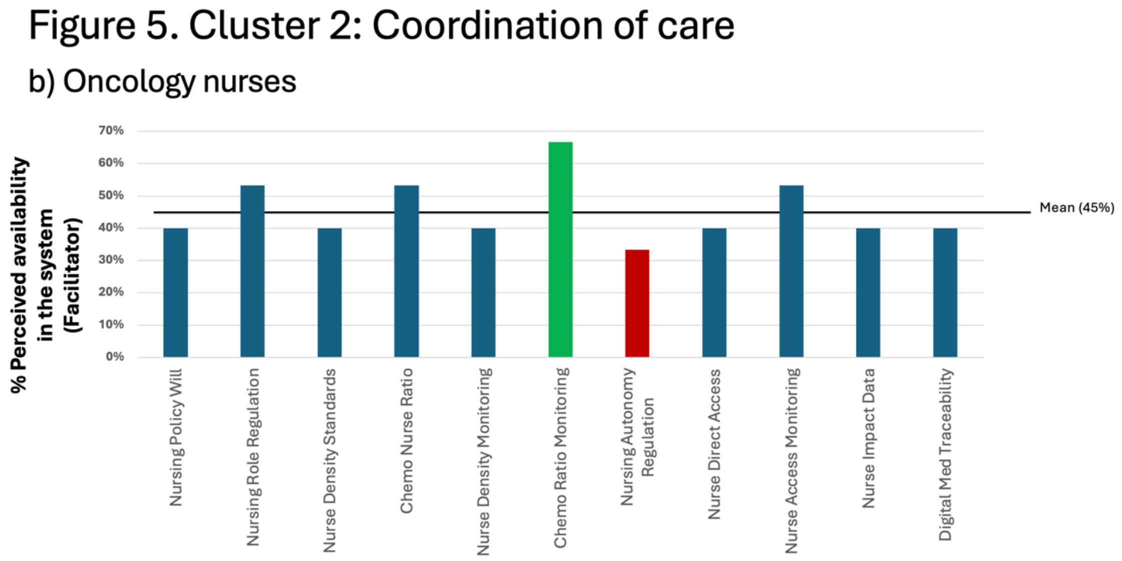


Figure 5 presents the perceived availability of system-level facilitators related to oncology nursing within the coordination of care cluster. Overall, the average availability across indicators is moderate, with a mean score of 45%, indicating partial but uneven integration of oncology nurses into coordinated cancer care pathways.

Regulatory and governance-related elements show mixed performance. While nursing role regulation and chemotherapy nurse ratios are reported above the cluster mean (both slightly above 50%), nursing policy will and nurse density standards remain below average, suggesting that formal recognition of oncology nursing roles is not consistently matched by comprehensive workforce planning frameworks.

Monitoring mechanisms exhibit a clearer contrast. Chemotherapy nurse ratio monitoring stands out as one of the strongest elements within this sub-domain, with perceived availability exceeding 65%, reflecting greater attention to safety and staffing adequacy in high-risk treatment settings. In contrast, broader nurse density monitoring remains limited, indicating gaps in systematic oversight of oncology nursing capacity beyond chemotherapy services.

Areas related to professional autonomy and system integration appear particularly weak. Nursing autonomy regulation shows one of the lowest scores (approximately one-third of respondents reporting availability), highlighting persistent constraints on expanded nursing roles that could enhance task sharing and continuity of care. Similarly, indicators related to nurse impact data and digital medication traceability remain below the cluster mean, pointing to underdeveloped information systems for capturing the contribution of oncology nurses to patient outcomes.

Finally, access-related indicators display moderate performance. Nurse direct access and nurse access monitoring are reported around the mean, suggesting that while oncology nurses are present within care pathways, their role as first points of contact or navigators is not yet fully institutionalised. Taken together, these findings indicate that oncology nurses represent a partially leveraged resource for care coordination, with notable strengths in chemotherapy-related domains but significant gaps in regulation, autonomy, data systems, and strategic workforce development.

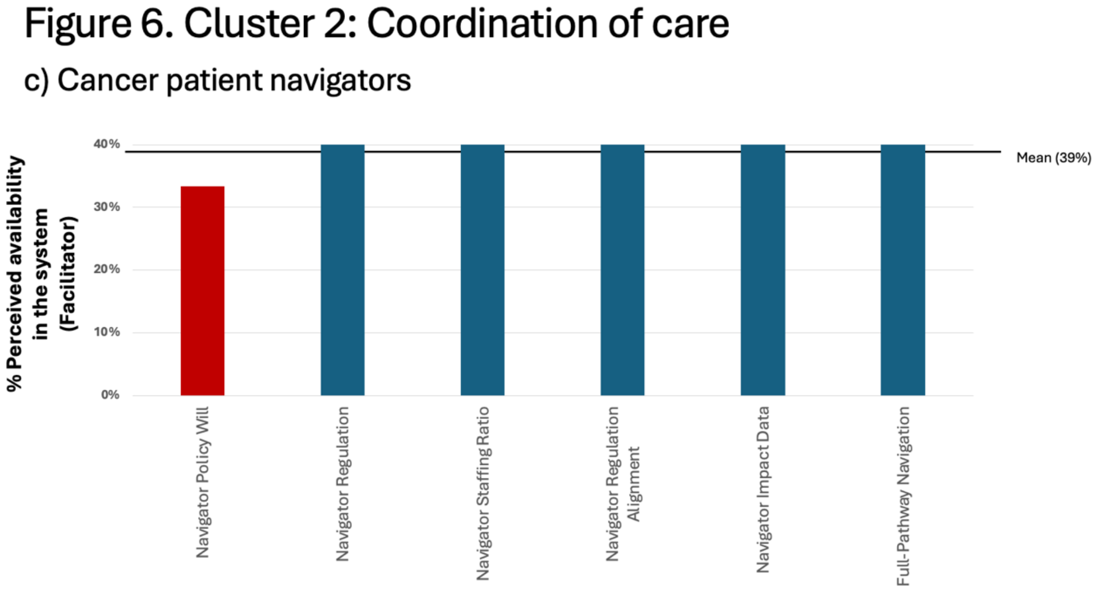
2.c Cancer patient navigators

Cancer patient navigation programmes are designed to reduce fragmentation of care by supporting patients throughout the cancer continuum, from diagnosis to treatment and follow-up. Navigators play a critical role in addressing administrative, logistical, and informational barriers, particularly for vulnerable populations, and are increasingly recognised as a key mechanism to improve timeliness, continuity, and equity in cancer care. Effective navigation systems require not only staffing and role definition, but also clear policy commitment, regulatory alignment, and mechanisms to measure their impact on patient outcomes.

Figure 6 presents the perceived availability of facilitators related to cancer patient navigation within the coordination of care cluster. Overall availability across these indicators is relatively low, with a mean score of 39%, making this one of the weakest-performing sub-domains within Cluster 2.

Structural and operational elements of navigation programmes show moderate presence. Indicators related to navigator regulation, staffing ratios, regulatory alignment, impact data, and full-pathway navigation all cluster around the mean, with approximately 40% of respondents reporting their availability. This suggests that, where navigation programmes exist, they tend to be relatively well defined in scope and integrated across the care pathway.

Figure 6. Cluster 2: Coordination of care – c) Cancer patient navigators



In contrast, policy-level commitment emerges as a major gap. Navigator policy will is the lowest-performing indicator in this sub-domain, with perceived availability just above 30%. This finding points to limited strategic prioritisation of patient navigation at the system level, despite the presence of operational components in some settings.

Taken together, these results indicate that cancer patient navigation remains unevenly institutionalised. While some systems have developed regulatory frameworks and operational capacity for navigation, the absence of strong policy commitment may constrain scale-up, sustainability, and consistent national implementation. Strengthening governance and explicit policy support for patient navigation could therefore represent a high-impact opportunity to improve coordination of cancer care, particularly for patients facing complex treatment pathways and social barriers.

2.d Task sharing and substitution

Task sharing and substitution are increasingly recognised as critical strategies to address workforce shortages and improve access to cancer care, particularly in settings with limited specialist availability. By redistributing selected clinical and supportive tasks from highly specialised professionals to adequately trained non-physician providers or allied health workers, health systems can enhance efficiency, continuity of care, and system resilience. Successful implementation, however, depends on clear policy endorsement, formal regulation, and alignment between practice and governance frameworks.

Figure 7. Cluster 2: Coordination of care – d) Task sharing and substitution

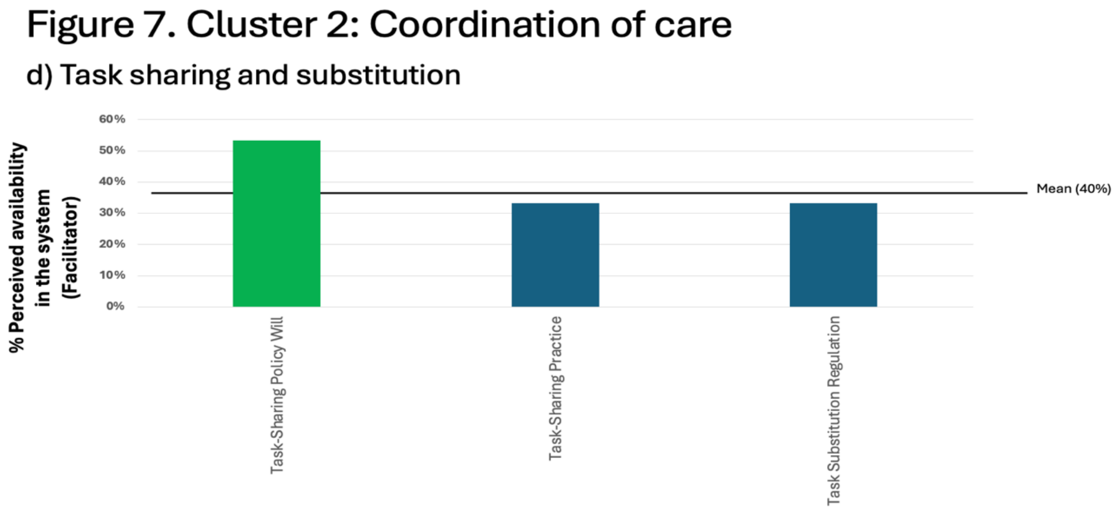


Figure 7 summarises the perceived availability of facilitators related to task sharing and substitution within cancer care coordination. Overall availability across this sub-domain is modest, with a mean score of 40%, reflecting partial but incomplete adoption of these strategies.

Policy-level support for task sharing emerges as the strongest element, with just over half of respondents reporting the presence of political will to promote task sharing within the system. This suggests growing recognition of task sharing as a necessary response to workforce constraints in cancer care.

In contrast, implementation and regulation lag behind policy intent. Both task-sharing practice and task substitution regulation are reported by approximately one-third of respondents, falling below the overall mean. This gap indicates that, while strategic endorsement exists, translation into routine clinical practice and formal regulatory frameworks remains limited.

The imbalance between political will and operational execution highlights a key bottleneck in the effective use of task sharing and substitution. Without clear regulatory guidance and structured implementation, health systems may struggle to safely and sustainably leverage these approaches to expand workforce capacity. Strengthening regulatory frameworks and supporting implementation at the service delivery level could therefore unlock the potential of task sharing to improve coordination and access across the cancer care pathway.

2.e Multidisciplinary tumour boards

Multidisciplinary tumour boards (MDTs) are a cornerstone of coordinated, high-quality cancer care. By bringing together specialists from surgery, medical oncology, radiation oncology, pathology, radiology, nursing, and supportive care, MDTs aim to ensure evidence-based, patient-centred decision-making across the cancer care continuum. Their effectiveness depends not only on their existence, but also on formal requirements, regulatory frameworks, systematic case review, and integration of MDT decisions into quality improvement and clinical governance processes.

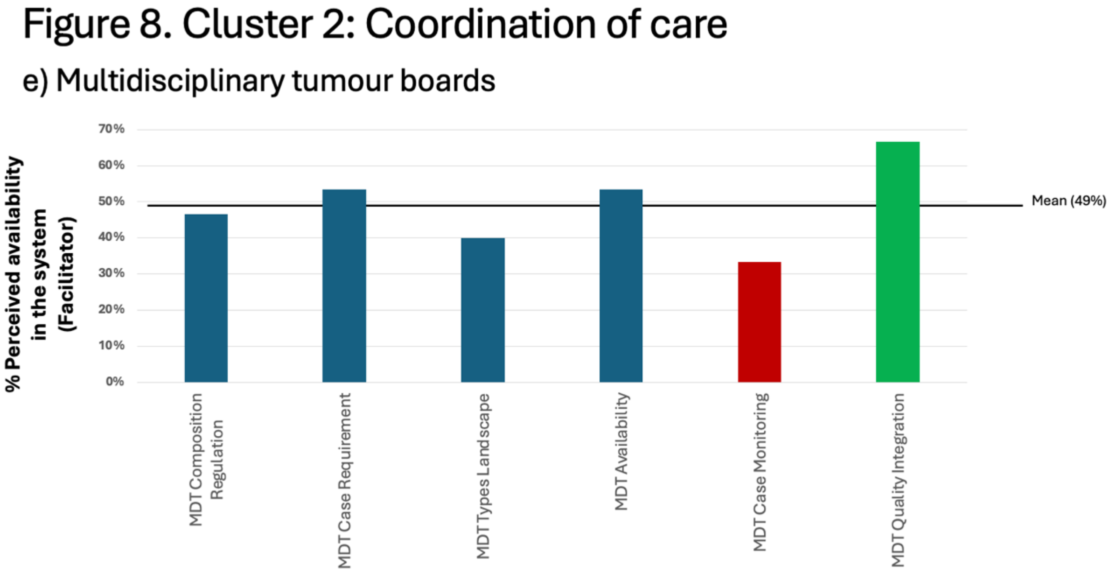
Figure 8 presents the perceived availability of facilitators related to multidisciplinary tumour boards within the health system. Overall, this sub-domain shows moderate development, with a mean availability of 49%, indicating that MDTs are present in many settings but remain unevenly institutionalised.

Formal requirements for MDT case discussion and the general availability of MDTs are reported by just over half of respondents, suggesting that multidisciplinary review is recognised as an important component of cancer care. Similarly, regulatory frameworks governing MDT composition are reported by nearly half of respondents, indicating partial formalisation of MDT structures.

In contrast, gaps emerge in more operational and evaluative dimensions. Only 40% of respondents report a comprehensive landscape of MDT types, suggesting limited differentiation by tumour site, complexity, or level of care. More notably, systematic monitoring of MDT case discussions is reported by just one-third of respondents, highlighting weak feedback mechanisms and limited use of MDTs for continuous performance improvement.

The strongest-performing element within this sub-domain is the integration of MDTs into quality frameworks, reported by approximately two-thirds of respondents. This suggests that where MDTs are established, they are increasingly linked to quality assurance processes, even if routine monitoring and comprehensive implementation remain incomplete.

Figure 8. Cluster 2: Coordination of care – e) Multidisciplinary tumour board



Overall, the findings indicate that multidisciplinary tumour boards are relatively well recognised as a quality instrument, but their full potential for strengthening coordination of care is constrained by gaps in systematic monitoring, standardisation across tumour types, and consistent regulatory enforcement.

2.f Comprehensive cancer centres

Comprehensive cancer centres (CCCs) are widely recognised as institutional anchors for high-quality, coordinated cancer care. By integrating prevention, diagnosis, treatment, research, training, and supportive services within a single organisational framework, CCCs are intended to reduce fragmentation, improve clinical outcomes, and strengthen system-wide coordination. Their effectiveness depends not only on physical availability, but also on political commitment, regulatory frameworks, certification mechanisms, and population coverage.

Figure 9. Cluster 2: Coordination of care – f) Comprehensive cancer centres

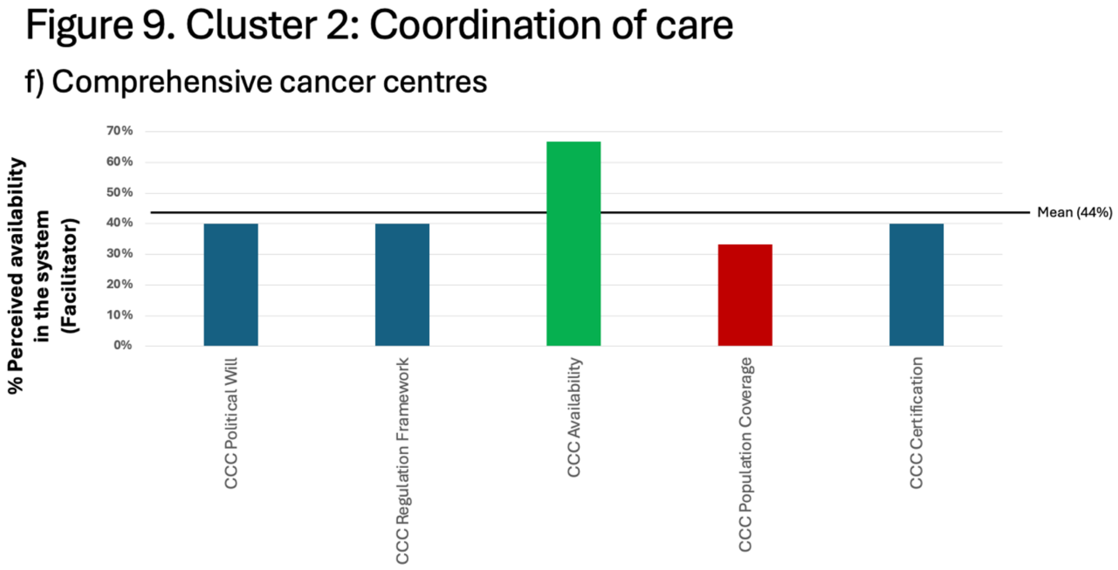


Figure 9 summarises the perceived availability of facilitators related to comprehensive cancer centres within the health system. Overall, this sub-domain shows moderate development, with a mean availability of 44%, reflecting partial institutionalisation of CCCs across settings.

Availability of comprehensive cancer centres emerges as the strongest-performing element, reported by approximately two-thirds of respondents. This suggests that CCCs exist in a substantial proportion of countries or systems, often concentrated in major urban or tertiary-care settings.

In contrast, political will and regulatory frameworks supporting CCCs are reported by only 40% of respondents, indicating that the presence of CCCs is not consistently underpinned by formal national strategies or governance structures. Similarly, certification mechanisms for CCCs are reported at comparable levels, suggesting limited standardisation and external quality assurance.

The most pronounced gap is observed in population coverage, reported by just one-third of respondents. This highlights a critical equity challenge: while CCCs may be available, their reach remains limited, potentially reinforcing geographic and socioeconomic disparities in access to coordinated cancer care.

Taken together, the findings indicate that comprehensive cancer centres are more often established in practice than embedded within robust policy, regulatory, and coverage frameworks. Strengthening governance, certification, and equitable access to CCCs appears essential to fully realise their role as system-level drivers of coordinated cancer care.

Conclusions of Cluster 2

The results for Cluster 2, presented across Figures 4–9, illustrate that coordination of care remains one of the most structurally constrained domains of cancer system performance, with marked variability across workforce, organisational, and service integration components.

Within workforce capacity (Figure 4), the mean availability of facilitators is 43%, reflecting partial recognition of workforce shortages and wellbeing concerns, but limited implementation of concrete policy actions. While monitoring of workforce shortages is relatively common, fewer systems report active policy responses or sustained funding mechanisms to support coordination across levels of care.

The subdomains of oncology nursing (Figure 5) and patient navigation (Figure 6) demonstrate mixed progress. Oncology nursing shows a slightly higher mean availability (45%), supported by clearer role definitions and monitoring of chemotherapy nurse ratios, yet constrained by limited autonomy and regulatory support. Patient navigation, by contrast, presents a lower mean (39%), indicating that although staffing ratios and pathway integration exist in some systems, formal policy frameworks and national strategies remain underdeveloped.

Results for task sharing and substitution (Figure 7) further highlight coordination gaps. Despite moderate political support for task sharing, practical implementation and regulatory frameworks lag behind, suggesting that task redistribution has not yet been institutionalised as a systemic response to workforce constraints.

The organisational components—multidisciplinary tumour boards (Figure 8) and comprehensive cancer centres (Figure 9)—show relatively stronger performance in availability and quality integration, particularly for MDT implementation and CCC availability. However, population coverage, monitoring, and certification mechanisms remain inconsistent, limiting the system-wide impact of these structures.

Overall, Cluster 2 reveals a coordination landscape characterised by islands of functional integration embedded within fragmented systems. While several coordination mechanisms are present, their uneven distribution and limited linkage to workforce policy and financing constrain their effectiveness in ensuring continuity and coherence of cancer care.

Cluster 3: Patient-centredness

This cluster examines whether patient-centred principles are embedded structurally and operationally within cancer systems, through both policy frameworks and the way information is governed, used, and reported. It recognises that timely access and coordination of care are insufficient if patients are not adequately informed, supported, and empowered throughout their cancer journey.

Cluster 3 includes two key sub-domains:

a) Legal frameworks and strategy, policy context and funding, and

b) Data governance, use, and reporting.

3.a Legal frameworks and strategy, policy context and funding

This sub-domain assesses the extent to which patient-centredness is embedded within the legal, strategic, and policy architecture of cancer systems, as well as the degree to which it is supported through formal funding mechanisms. It captures whether patient engagement, patient rights, shared decision-making, and the systematic use of patient-reported information are recognised not only at the level of practice, but also through explicit strategies, regulations, and national coordination frameworks. Strong performance in this area indicates that patient-centred care is institutionalised and sustained at the system level rather than relying on isolated initiatives.

Figure 10. Cluster 3: Patient-centredness – a) Legal frameworks and strategy, policy context and funding

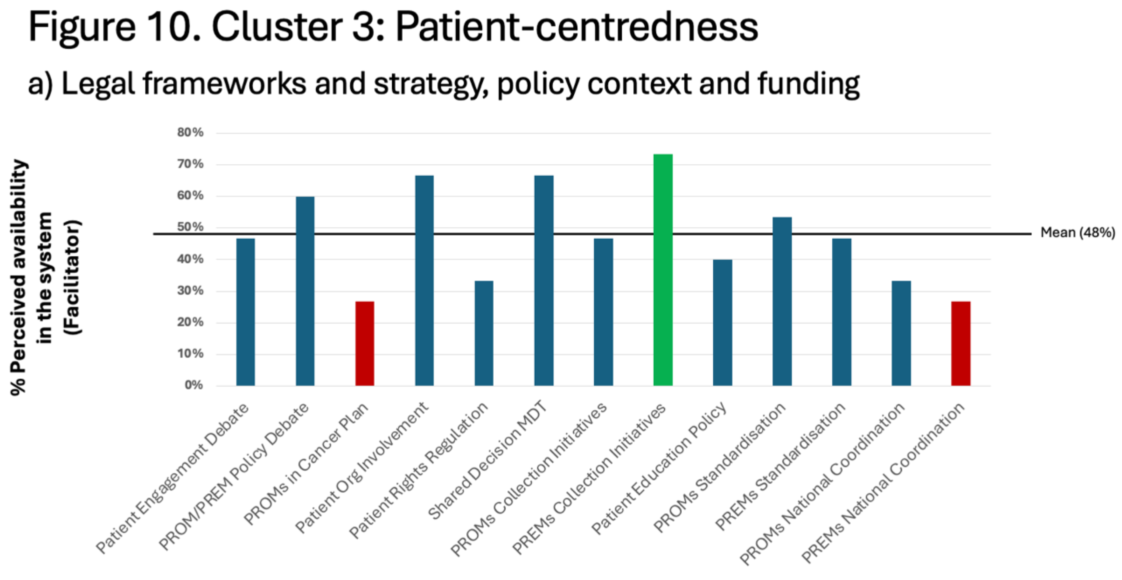


Figure 10 presents the perceived availability of key facilitators related to legal frameworks, policy context, and funding for patient-centredness across cancer systems. The overall mean availability across indicators is 48%, indicating moderate but uneven integration of patient-centred principles.

Several elements exceed the cluster mean, suggesting relatively stronger institutionalisation. Patient involvement in organisational governance and shared decision-making within multidisciplinary tumour boards (MDTs) both show availability levels of approximately 66–67%, reflecting comparatively widespread recognition of patients' roles in care processes. Similarly, PREMs collection initiatives stand out as the highest-scoring indicator, at around 73%, highlighting stronger system-level uptake of patient experience measurement compared with other patient-centred dimensions.

In contrast, multiple indicators fall substantially below the mean, revealing important structural gaps. PROMs inclusion in cancer plans shows low availability (approximately 27%), indicating limited formal integration of patient-reported outcomes into national cancer strategies. Patient rights regulation and patient education policies also display lower availability, at roughly 33% and 40%, respectively, suggesting that legal protections and empowerment mechanisms for patients are inconsistently embedded across systems.

Indicators related to standardisation and national coordination show mixed performance. While PROMs standardisation and PREMs standardisation reach moderate levels (around 53% and 47%, respectively), national coordination mechanisms for PROMs and PREMs remain weak, with availability close to 33% and 27%. This pattern indicates that, even where measurement initiatives exist, they are often fragmented and lack central governance or sustained funding.

Overall, Figure 10 demonstrates that patient-centredness within legal and policy frameworks is characterised by selective strengths alongside persistent structural gaps. While patient involvement and experience measurement are increasingly recognised, their translation into comprehensive strategies, binding regulations, and coordinated national systems remains limited.

3.b Data governance, use, and reporting

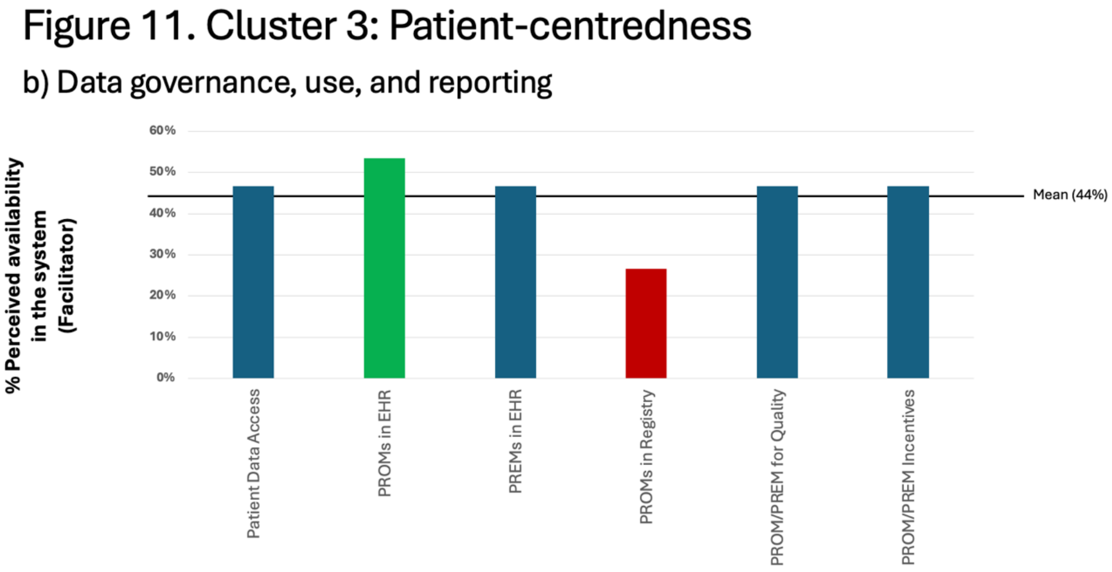
This sub-domain focuses on the governance, integration, and use of patient-reported and patient-level data as a core component of patient-centred cancer care. It assesses whether systems enable patients to access their own data, whether PROMs and PREMs are embedded within electronic health records and registries, and whether patient-reported information is actively used for quality improvement through incentives or performance mechanisms. Strong performance in this area reflects the operationalisation of patient-centredness through routine data flows rather than isolated measurement efforts.

Figure 11 shows the perceived availability of facilitators related to data governance, use, and reporting for patient-centredness. The overall mean availability across indicators is 44%, indicating modest and uneven implementation across systems.

Several indicators cluster around or slightly above the mean. Patient data access, PREMs embedded in EHRs, PROM/PREM use for quality improvement, and PROM/PREM incentives each show availability levels of approximately 46–47%, suggesting that foundational elements for patient-facing data use are present in roughly half of systems, but are far from universal.

The highest-scoring indicator is PROMs integrated into EHRs, with an availability of approximately 53%, indicating that electronic capture of patient-reported outcomes is more advanced than other dimensions of patient-centred data use. This contrasts sharply with PROMs embedded in registries, which show the lowest availability at approximately 26%, highlighting a substantial gap in linking patient-reported outcomes with population-level cancer surveillance and longitudinal monitoring.

Figure 11. Cluster 3: Patient-centredness – b) Data governance, use, and reporting



Overall, Figure 11 illustrates that while patient-centred data collection within clinical systems—particularly EHRs—is progressing, systematic governance, registry integration, and structured use of patient-reported data remain limited. The results point to fragmentation between data capture, data integration, and data use, constraining the ability of cancer systems to fully operationalise patient-centred care through robust information infrastructures.

Conclusion of Cluster 3

Taken together, the results from Figures 10 and 11 indicate that patient-centredness is partially embedded but unevenly operationalised across cancer systems. At the policy and strategic level (Figure 10), several foundational elements—such as patient engagement in policy debates, shared decision-making within multidisciplinary teams, and the collection of PROMs and PREMs—are present in a substantial proportion of systems, with average availability close to 48%. However, key structural components, including formal patient rights regulation, national coordination of PROMs and PREMs, and patient education policies, remain below this threshold, signalling gaps between policy intent and systematic implementation.

At the data governance and operational level (Figure 11), the overall mean availability drops slightly to 44%, reflecting challenges in translating patient-centred principles into routine data use and reporting. While integration of PROMs into electronic health records shows comparatively higher availability, their incorporation into registries and population-level monitoring remains limited. Similarly, although mechanisms for patient data access and the use of PROMs and PREMs for quality improvement are present in nearly half of systems, structured incentive frameworks and registry-based feedback loops are less consistently established.

Overall, the cluster highlights a pattern in which patient-centred data collection is advancing faster than patient-centred data governance and system-wide use. The findings suggest that patient-centredness is more strongly expressed at the point of care than at the level of system integration, performance management, and accountability. This fragmentation constrains the ability of cancer systems to fully leverage patient-reported information as a driver of quality improvement and responsive care.

Discussion

This assessment provides a system-level analysis of cancer care performance in Mexico across three interrelated domains: timeliness of care, coordination of care, and patient-centredness. Framing the results within these clusters allows for identification of structural strengths as well as persistent bottlenecks that limit the effective delivery of high-quality cancer care.

Across all clusters, a consistent pattern emerges: strategic intent and partial infrastructure development have advanced more rapidly than operational execution and system-wide integration. Similar dynamics have been described in international analyses of cancer systems, where the existence of national cancer plans and digital infrastructure does not necessarily translate into measurable improvements in access, continuity, or outcomes without strong governance and accountability mechanisms (WHO, 2017; OECD, 2020).

Within Cluster 1 (Timeliness of care), the results show that strategic and regulatory instruments—such as cancer strategies, regulatory alignment, and funding for cancer data—are relatively more developed than operational tools such as waiting time standards, enforcement mechanisms, and public reporting. This finding aligns with evidence from OECD countries showing that delays in diagnosis and treatment are often driven not by lack of formal strategies, but by weak implementation, limited performance monitoring, and insufficient use of data to manage bottlenecks along the care pathway (OECD, 2023; Hanna et al., 2020).

Cluster 2 (Coordination of care) reveals more pronounced fragmentation, particularly in workforce-related domains. While multidisciplinary tumour boards and comprehensive cancer centres show moderate availability, their impact is constrained by limited population coverage, inconsistent monitoring, and weak linkage to workforce policy and financing. Prior international experience demonstrates that coordination mechanisms are most effective when embedded within coherent workforce strategies that address shortages, professional roles, and communication across levels of care (Atun et al., 2015; All.Can International, 2022). The relatively low availability of patient navigation programmes and task sharing arrangements observed here suggests missed opportunities to mitigate fragmentation, particularly for patients with complex care needs.

Cluster 3 (Patient-centredness) highlights an important asymmetry between practice-level initiatives and system-level integration. While patient involvement in decision-making and the collection of PREMs and PROMs are increasingly present, their limited incorporation into national strategies, registries, and performance frameworks constrains their potential impact. This pattern mirrors findings from other health systems, where patient-reported data are frequently collected but insufficiently used to inform policy, quality improvement, or accountability (Black et al., 2016; OECD, 2019).

Taken together, the findings suggest that the Mexican cancer system exhibits islands of functionality within a fragmented governance environment, a pattern commonly observed in middle-income health systems undergoing cancer system transformation (Knaul et al., 2018; WHO, 2020). Addressing these gaps requires not only technical solutions, but sustained political commitment and system-wide alignment.

Policy considerations and implications

The results point to several priority areas for policy action aimed at strengthening cancer system performance.

First, governance and accountability mechanisms must be reinforced. The limited availability of waiting time standards, systematic performance monitoring, and public reporting indicates a need to move beyond strategic planning toward enforceable policies with clear targets and transparent oversight. International evidence shows that explicit timeliness standards, combined with routine monitoring and public reporting, are associated with improved cancer outcomes and reduced delays (Hanna et al., 2020; OECD, 2023).

Second, workforce policy represents a critical leverage point for improving coordination of care. Expanding oncology nursing roles, formalising patient navigation, and operationalising task sharing require regulatory reform, professional consensus, and dedicated financing. Experiences from integrated cancer systems demonstrate that coordinated workforce strategies can significantly improve continuity of care and patient experience, particularly in resource-constrained settings (Atun et al., 2015; WHO, 2022).

Third, data systems must evolve from infrastructure to intelligence. While registries and digital records are partially established, their value depends on interoperability, real-time use, and integration into decision-making. Investments in unique patient identifiers, staging completeness, and effectiveness data are essential to enable longitudinal tracking and performance management, as emphasised in global cancer control frameworks (IARC, 2014; WHO, 2017).

Fourth, advancing patient-centredness as a system property requires embedding PROMs and PREMs within governance, financing, and quality improvement mechanisms. Evidence from multiple countries shows that patient-reported data have the greatest impact when standardised, nationally coordinated, and linked to incentives and accountability frameworks, rather than remaining isolated measurement initiatives (Black et al., 2016; OECD, 2019).

Finally, the findings underscore the importance of equity-oriented implementation. Limited population coverage of comprehensive cancer centres and uneven access to coordination mechanisms risk exacerbating geographic and socioeconomic disparities. Addressing these gaps is essential to ensure that system improvements translate into equitable gains in cancer outcomes, consistent with universal health coverage goals (WHO, 2010; Knaul et al., 2018).

Conclusions

This assessment provides a comprehensive, system-oriented view of cancer care performance in Mexico across timeliness, coordination, and patient-centredness. The findings reveal meaningful progress in strategic planning, data infrastructure, and selected organisational mechanisms, alongside persistent gaps in governance, workforce integration, data use, and equity.

Overall, the cancer system demonstrates partial readiness rather than full maturity. Strategic intent and technical components are present, but their uneven implementation limits the system's capacity to deliver timely, coordinated, and patient-centred care consistently across populations.

Strengthening cancer care in Mexico will require integrated, system-wide reforms that align policy, workforce, data governance, and patient engagement. By addressing these interconnected domains, the system can better translate existing strengths into sustained improvements in cancer outcomes, patient experience, and equity—objectives that are central to global cancer control and universal health coverage agendas (WHO, 2017; OECD, 2020).

existing strengths into sustained improvements in cancer outcomes, patient experience, and equity.

References

1. All.Can International. All.Can Action Guide: identifying and addressing inefficiencies in cancer care. Brussels: All.Can International; 2020.
2. All.Can International. Improving efficiency in cancer care: what can we learn from patient perspectives? Brussels: All.Can International; 2020.
3. All.Can International. Tackling inefficiencies in cancer care: the patient perspective. Brussels: All.Can International; 2022.
4. Vozikis A, Athanasakis K. Mapping inefficiencies in cancer care: results from the pilot implementation of the All.Can Action Guide in Greece. Health Policy. 2022;126(8):734–742.
5. World Health Organization. Guide to cancer early diagnosis. Geneva: WHO; 2017.
6. World Health Organization. Cancer control: knowledge into action. WHO guide for effective programmes. Geneva: WHO; 2007.
7. World Health Organization. Monitoring the building blocks of health systems: a handbook of indicators and their measurement strategies. Geneva: WHO; 2010.
8. World Health Organization. Global strategy on people-centred and integrated health services. Geneva: WHO; 2015.
9. Organisation for Economic Co-operation and Development. OECD reviews of health systems: Mexico 2016. Paris: OECD; 2016.
10. Organisation for Economic Co-operation and Development. Health care quality indicators: cancer care. Paris: OECD; 2017.
11. Organisation for Economic Co-operation and Development. Health at a Glance 2023: OECD indicators. Paris: OECD; 2023.
12. Porter ME. What is value in health care? N Engl J Med. 2010;363(26):2477–2481.
13. Atun R, Jaffray DA, Barton MB, Bray F, Baumann M, Vikram B, et al. Expanding global access to radiotherapy. Lancet Oncol. 2015;16(10):1153–1186.
14. Hanna TP, King WD, Thibodeau S, Jalink M, Paulin GA, Harvey-Jones E, et al. Mortality due to cancer treatment delay: systematic review and meta-analysis. BMJ. 2020;371:m4087.
15. Maringe C, Spicer J, Morris M, Purushotham A, Nolte E, Sullivan R, et al. The impact of the COVID-19 pandemic on cancer deaths due to delays in diagnosis in England. Lancet Oncol. 2020;21(8):1023–1034.
16. GBD 2021 Cancer Collaborators. Global cancer burden 1990–2021: incidence, mortality, years of life lost, years lived with disability, and disability-adjusted life-years. Lancet. 2022;400(10355):1853–1878.
17. International Agency for Research on Cancer. Planning and developing population-based cancer registration in low- and middle-income settings. Lyon: IARC; 2014.
18. Black N, Burke L, Forrest CB, Sieberer UR, Ahmed S, Valderas JM, et al. Patient-reported outcomes: pathways to better health, better services, and better societies. Qual Life Res. 2016;25(5):1103–1112.
19. Organisation for Economic Co-operation and Development. Patient-reported indicators survey (PaRIS): results and lessons learned. Paris: OECD; 2019.
20. World Health Organization. WHO global report on cancer: setting priorities, investing wisely and providing care for all. Geneva: WHO; 2020.

21. Knaul FM, Farmer PE, Krakauer EL, De Lima L, Bhadelia A, Jiang Kwete X, et al. Alleviating the access abyss in cancer care and control—an imperative of universal health coverage. Lancet. 2018;391(10128):1692–1705.
22. Unger-Saldaña K. Challenges to the early diagnosis and treatment of breast cancer in low- and middle-income countries. World J Clin Oncol. 2014;5(3):465–477.