



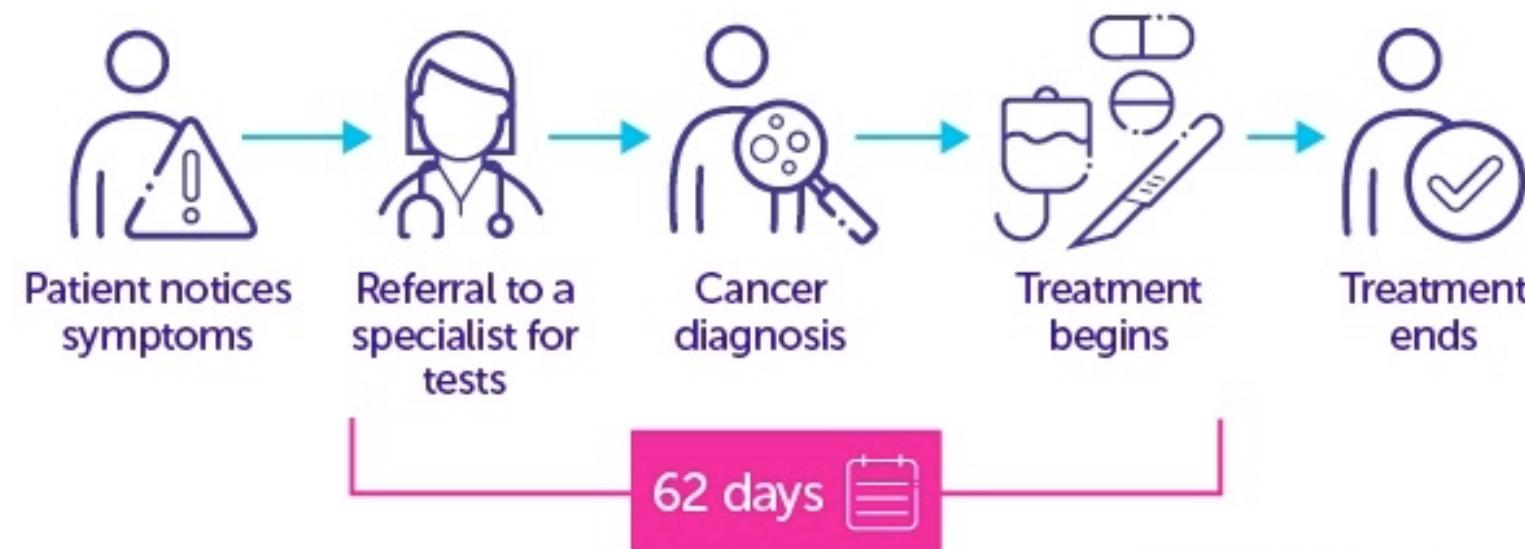
# Optimising Healthcare Operations: An Analysis of Cancer Treatment Waiting Times (Portfolio Project)

By Omar Mandy

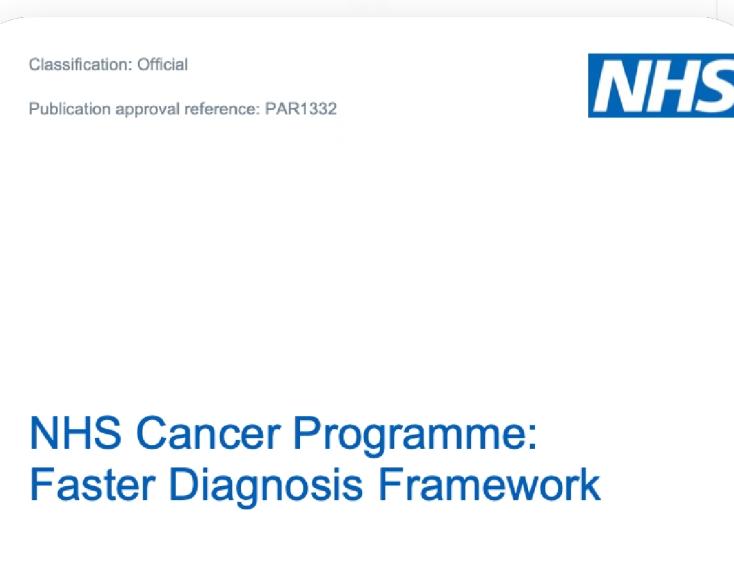
# The Current Landscape: UK Cancer Care Waiting Times

## What is the 62-day standard?

Patients should begin treatment within 62 days of an urgent cancer referral



NHS England has set a target that 85% of patients should meet this standard.



The UK's healthcare system is grappling with unprecedented challenges in cancer care. NHS England's 2022 report revealed record-breaking waiting times for cancer treatments:

- Over **69,000** patients waited beyond the **62-day** recommended period for treatment initiation in the past year, a significant rise from 2017-18 figures.
- By September 2022, **13%** had waited over **104 days**, exceeding the advised limit.
- Despite declining waiting times since 2013, the COVID-19 pandemic has intensified the issue, underscoring the pressing need for improvements in the UK's cancer care framework.

# Strategic Implications of Waiting Time Dynamics in Healthcare



## Financial Repercussions:

Extended waiting times can lead to increased treatment costs due to potential complications from delays, more extended recovery periods, and the risk of legal repercussions.



## Operational Insight:

Delving into waiting time metrics can reveal operational bottlenecks. Such insights are crucial for healthcare institutions striving for efficient resource allocation and streamlined operations. Given the current discussions about revising cancer waiting times in England, institutions must stay informed and adjust their operational strategies.



## Patient-Centric Impacts:

In a publicly funded system like the NHS, timely care is about patient satisfaction and public trust. Delays can diminish the public's confidence in the system, potentially leading to reputational damage. This, in turn, can have cascading effects, including financial repercussions and increased stakeholder scrutiny.

# Comprehensive Breakdown of NHS Cancer Care Metrics

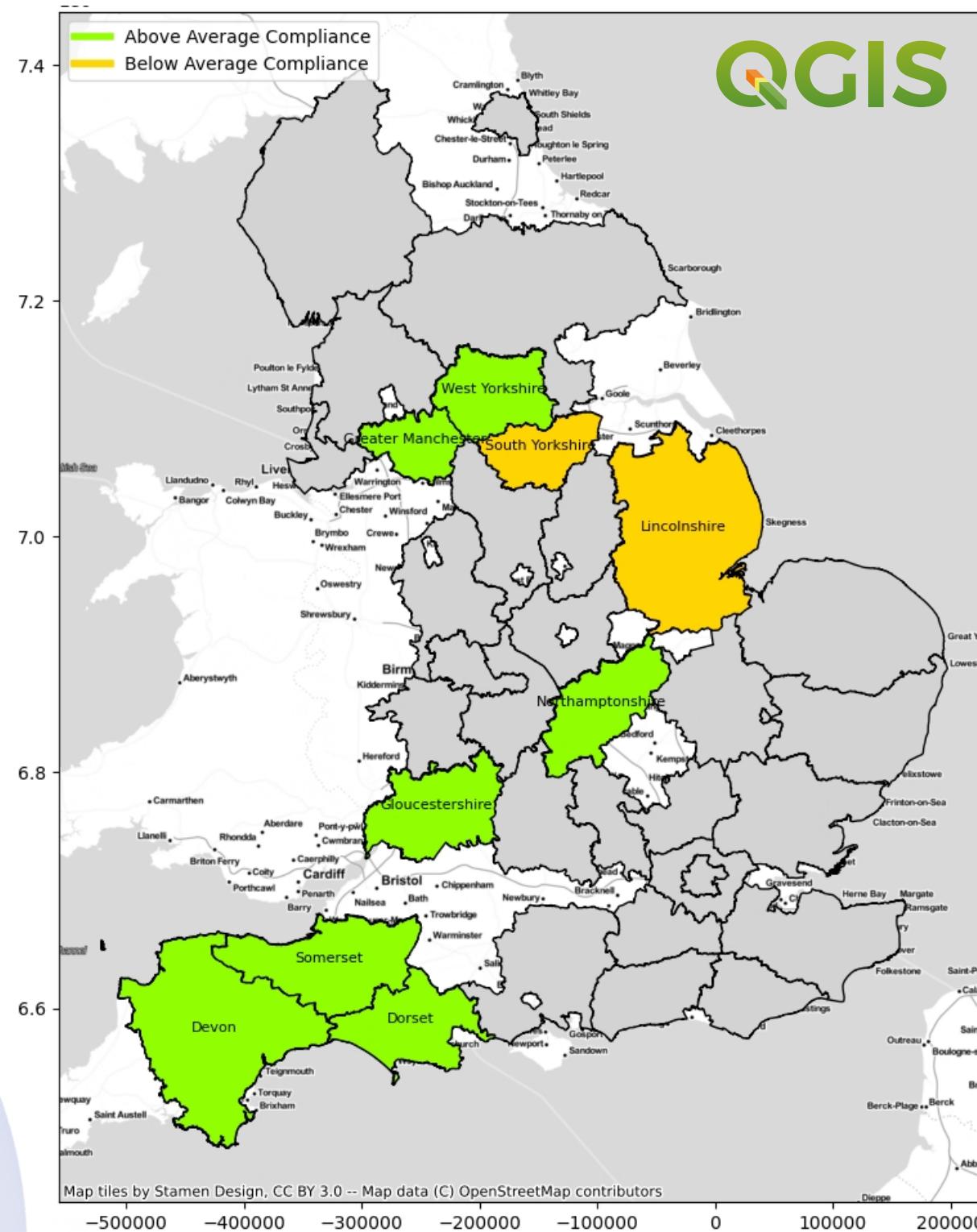
## Dataset Head

Period	Year & Month	Month	Standard	ICB (Integrative Care Board) Sub Location Org Code	Total Treated	Within Standard	Breaches
JUN-23	2023/24	JUN	2WW	91Q	10142	9667	475
JUN-23	2023/24	JUN	28 Days FDS	W2U3Z	9793	7751	2042

## Column Explanations:

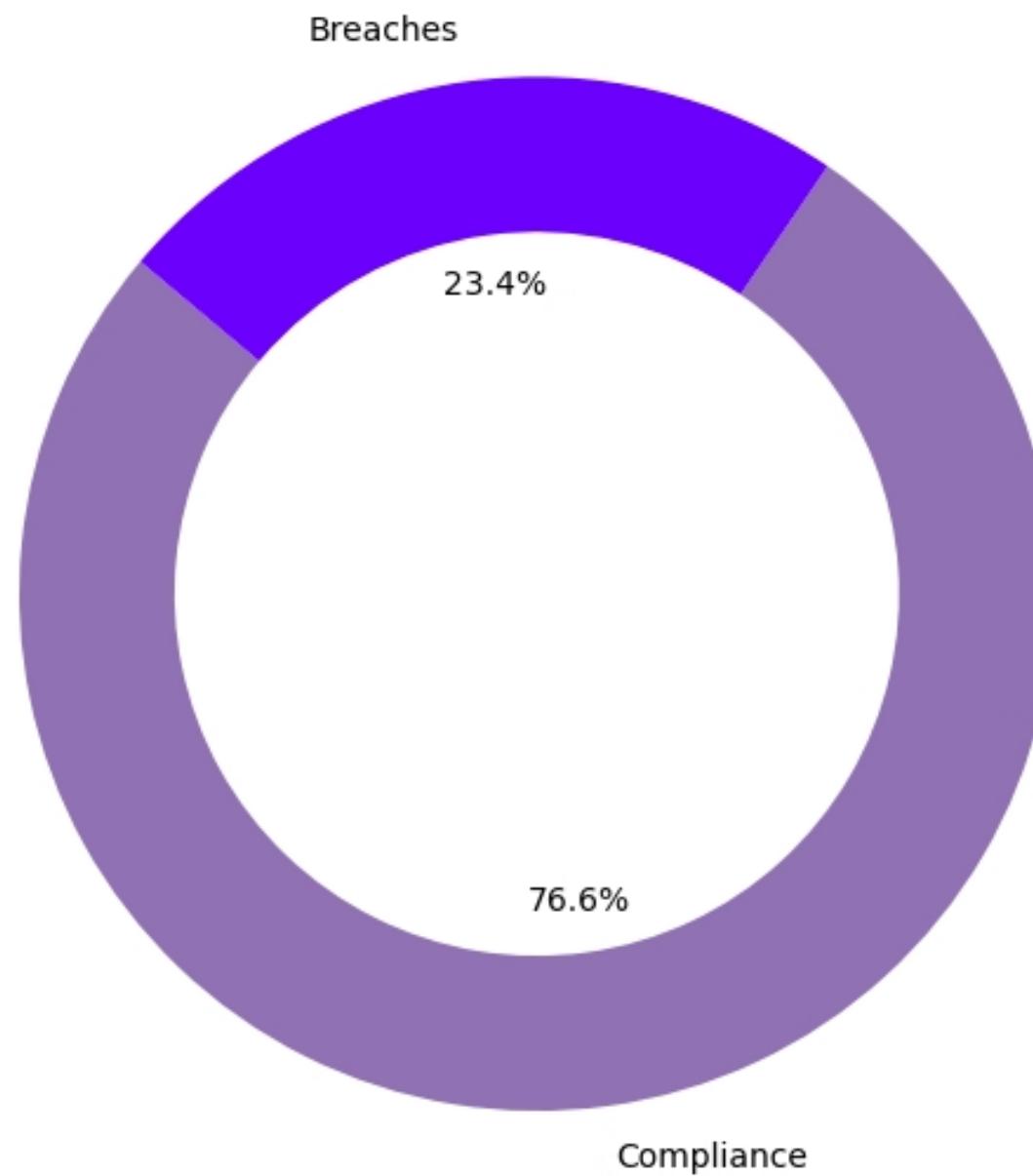
- Period:** Time frame of the data, indicating the month and year.
- Year & Month:** Provides specific details about the period of the data.
- Standard:** Represents the waiting time standard. For instance, "2WW" signifies a 2-week wait.
- ICB (Integrative Care Board) Sub Location Org Code:** This represents the particular geographic area or venue of treatment
- Total Treated:** Denotes the total number of patients treated within the specified period.
- Within Standard:** Indicates the number of patients treated within the stipulated time.
- Breaches:** Represent the instances where the treatment did not meet the standard time.

# Mapping ICB Compliance in UK Cancer Care

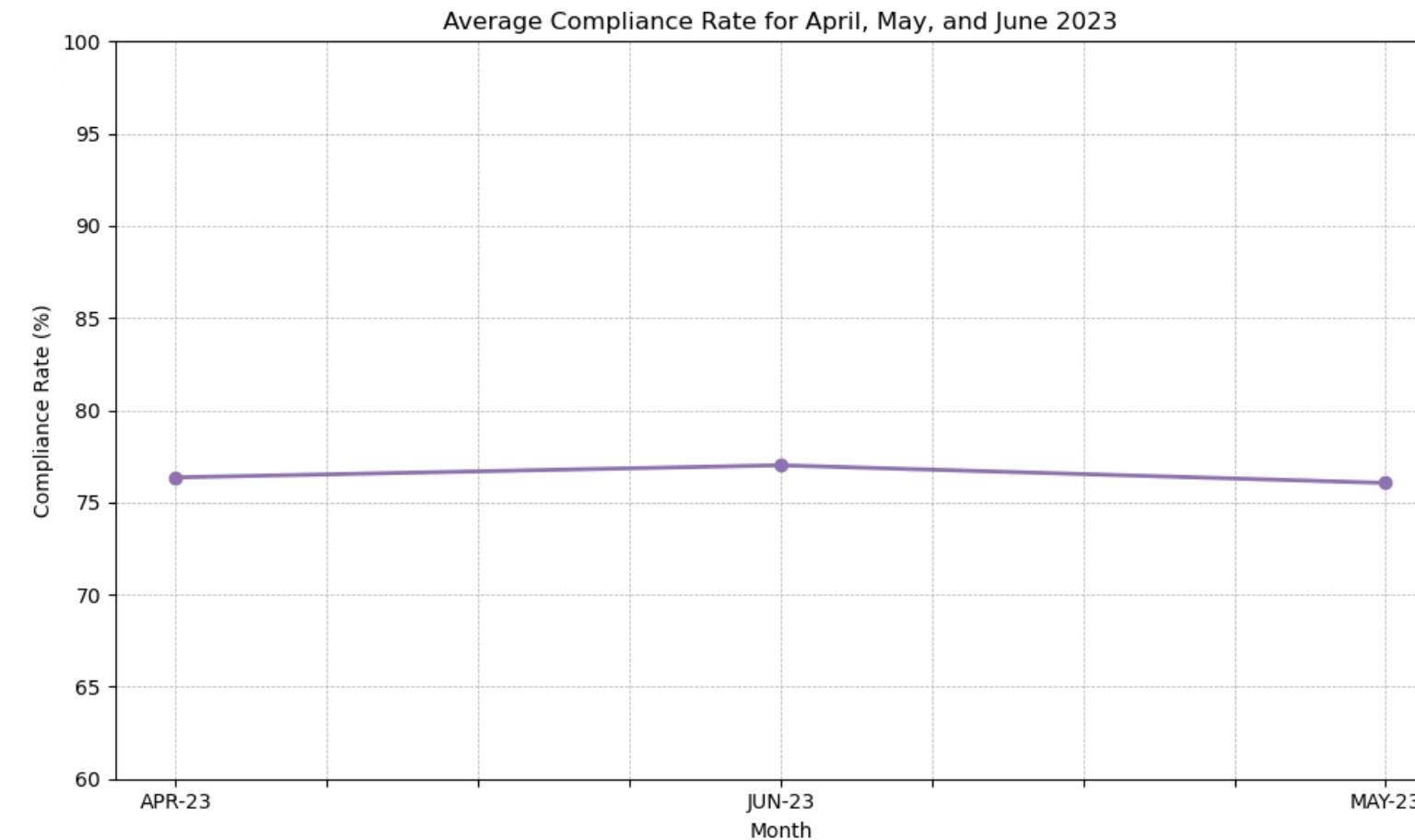


# Cancer Care Compliance Analysis: April to June 2023

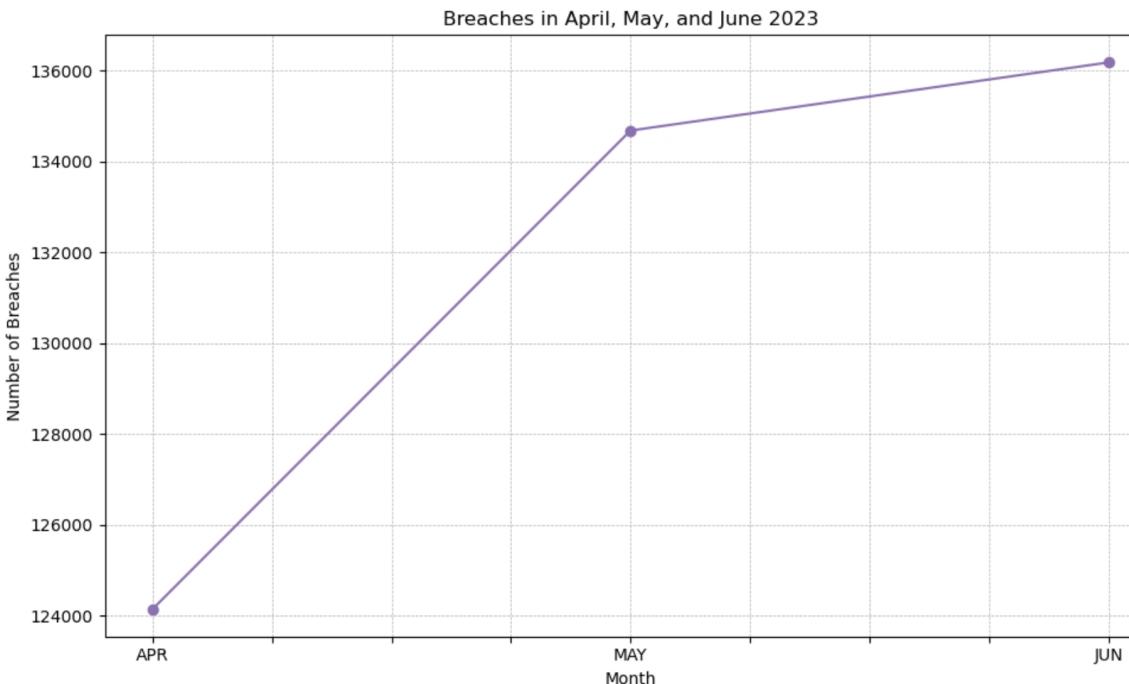
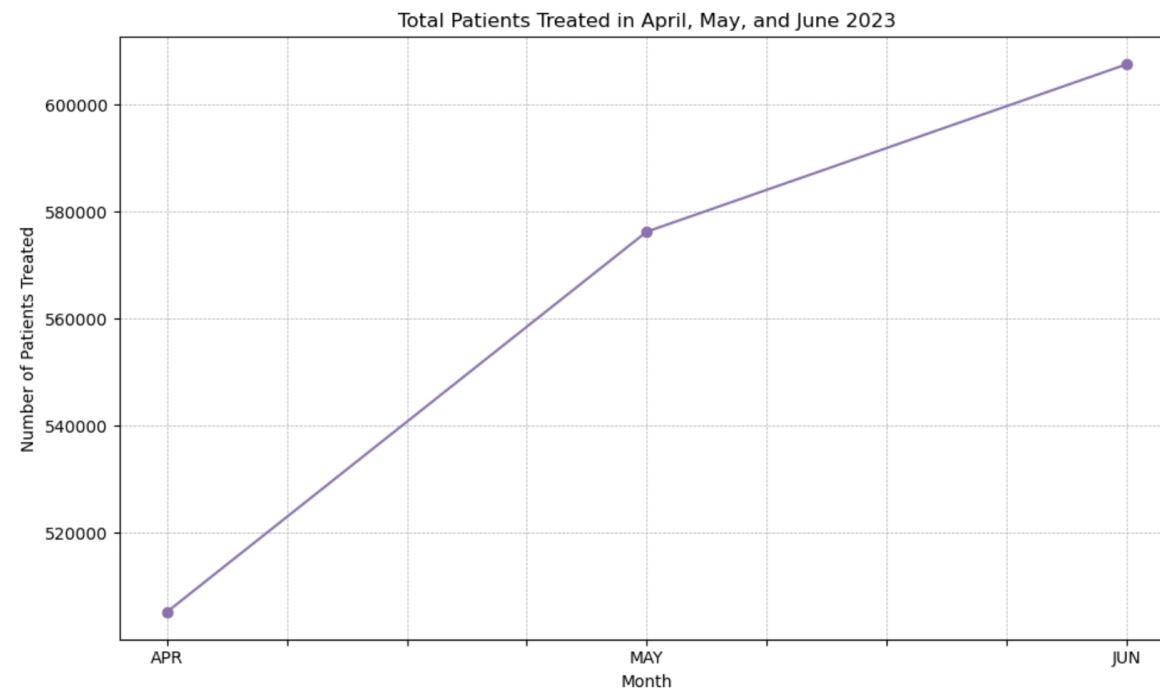
Overall Compliance vs. Breaches (April-June 2023)



From April to June 2023, the overall compliance rate for cancer care stood at **76%**, with a breach rate of **23.4%**. Delving into the monthly specifics, April recorded compliance of **76.36%**, followed by a slight dip in May to **76.06%**. June, however, saw a marginal rise, achieving a compliance rate of **77.01%**.



# Patient Treatment and Breaches in Q2 2023



## Findings:

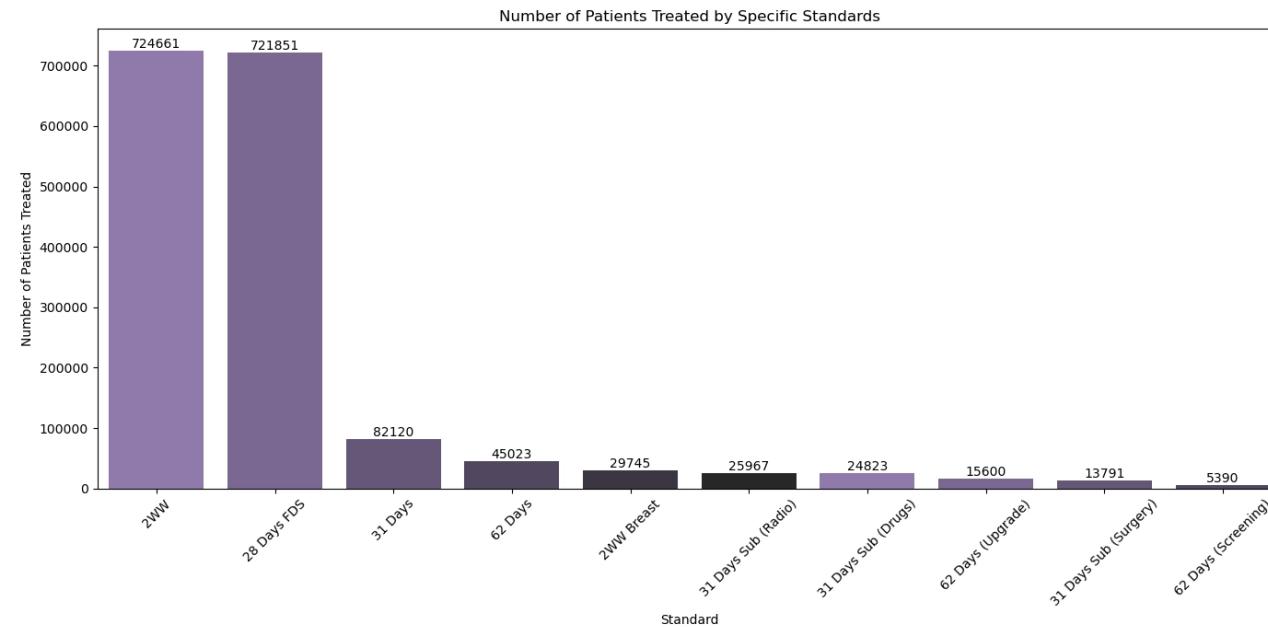
### Monthly Patient Treatment Trends:

- **April 2023:** A total of **505,227** patients were treated.
- **May 2023:** The number increased to **576,244**, marking an upsurge of approximately **14%** from the previous month.
- **June 2023:** The upward trend continued with **607,500** patients treated, indicating a **5.4%** increase from May.

### Monthly Breach Analysis:

- **April 2023:** Breaches were reported for **124,151** cases.
- **May 2023:** The breaches escalated to **134,687**, a rise of approximately **8.5%** from April.
- **June 2023:** The breaches increased, albeit slower, to **136,186**, marking a **1.1%** increment from May.

# Treatment and Breaches Across Standards

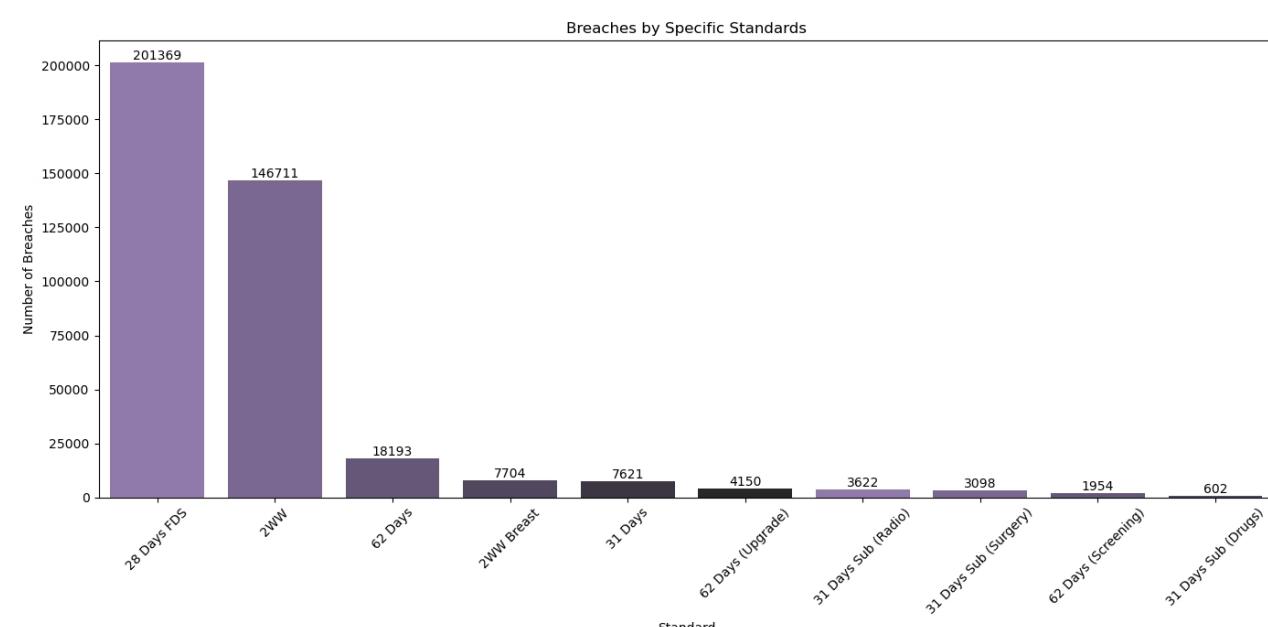


## High Volume, High Breaches:

- "2WW" and "28 Days FDS" have the largest patient counts at 724,661 and 721,851, respectively. They also report the highest breaches, with "28 Days FDS" notably higher.

## Disproportionate Breaches:

- Despite only 45,023 treated patients under the "62 Days" standard, breaches are significant at 18,193. Similarly, "2WW Breast" sees 7,704 breaches from 29,745 patients.



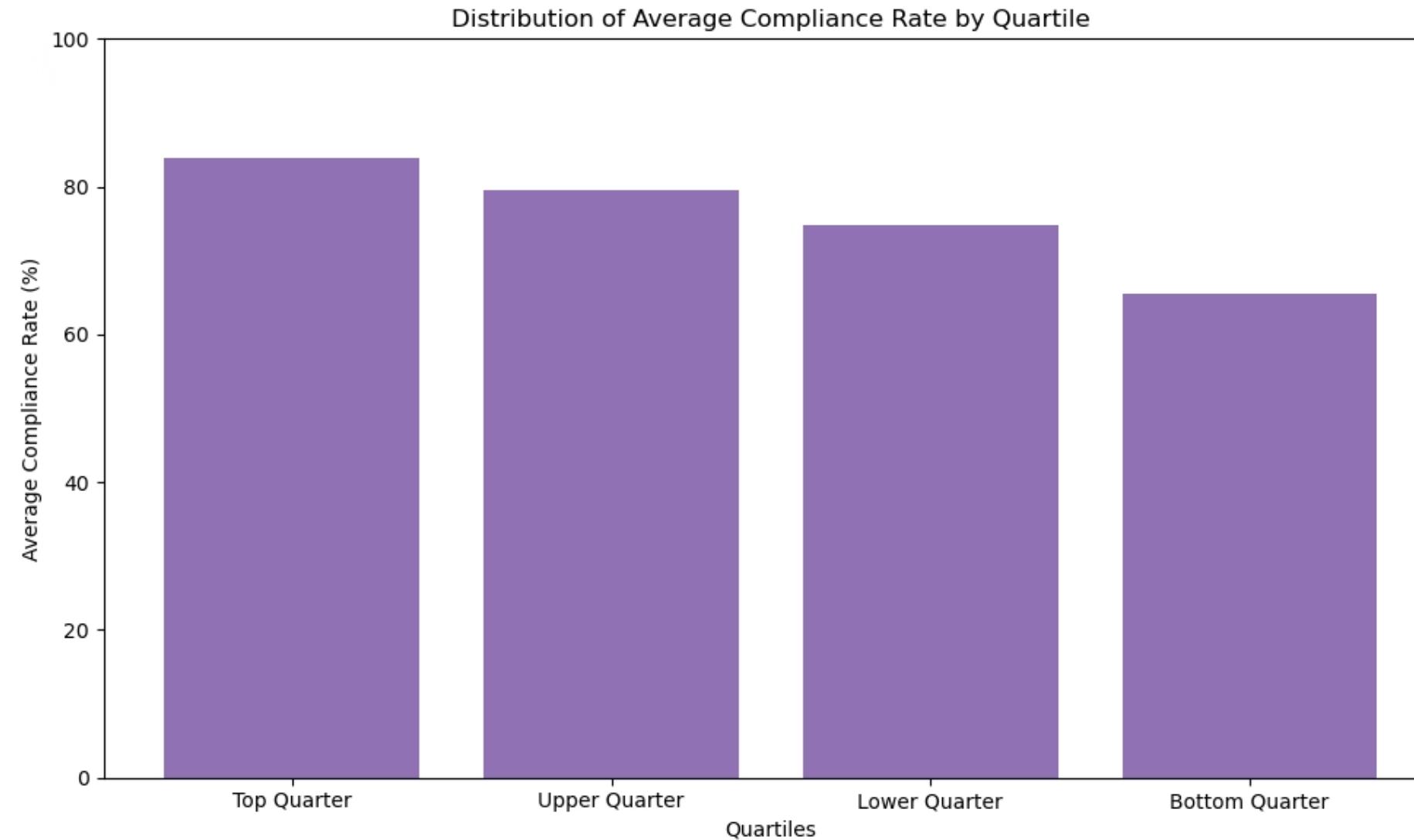
## Efficiency in Sub-Categories:

- "31 Days Sub (Drugs)" stands out with only 602 breaches from 24,823 patients, indicating efficient management. However, "31 Days Sub (Surgery)" and "31 Days Sub (Radio)" still face challenges despite lower patient counts.

## Concern Areas:

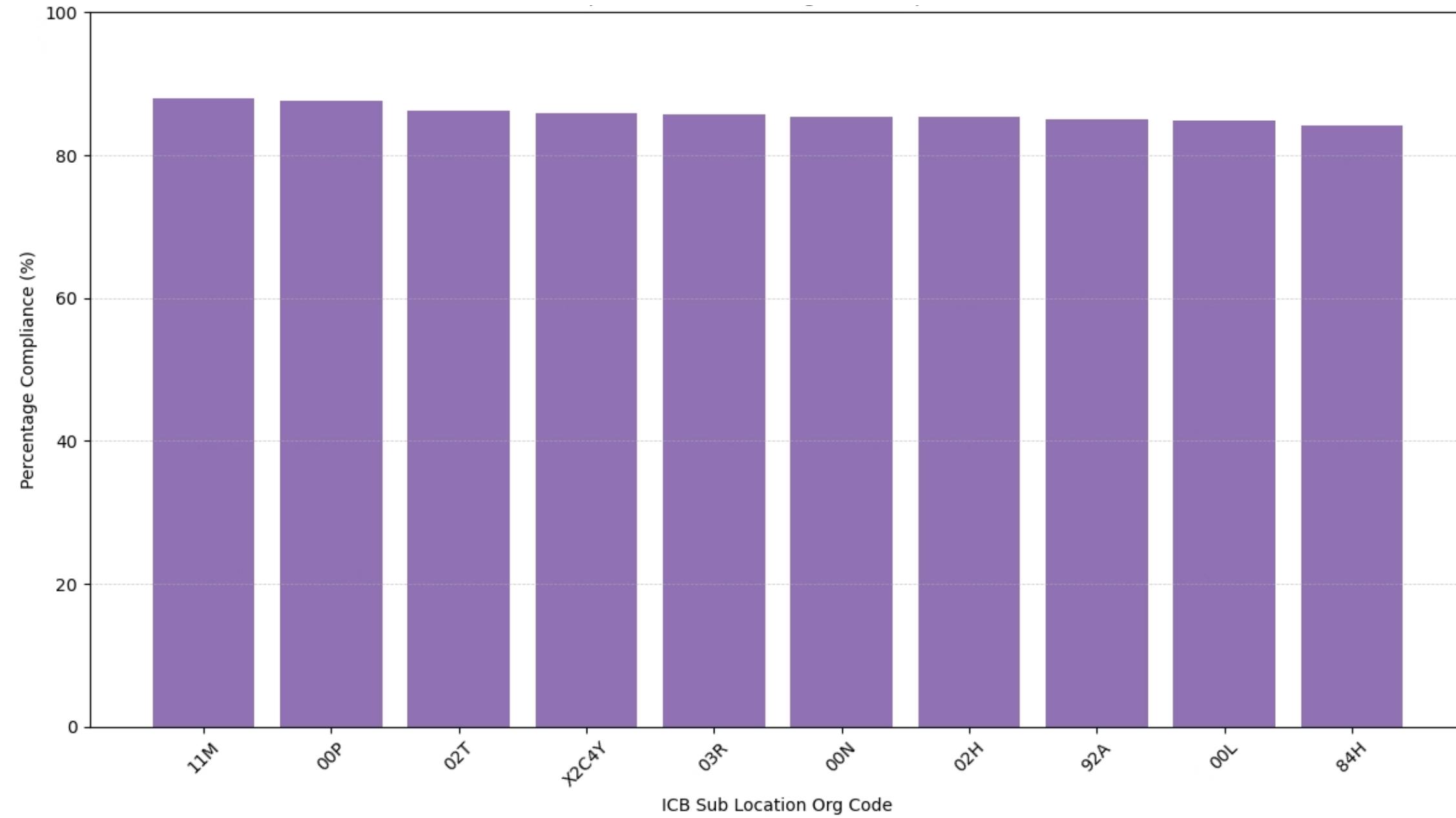
- "62 Days (Upgrade)" and "62 Days (Screening)" standards, with lower patient volumes, report breaches of 4,150 and 1,954, suggesting potential bottlenecks.

# Divergence in Compliance Rates



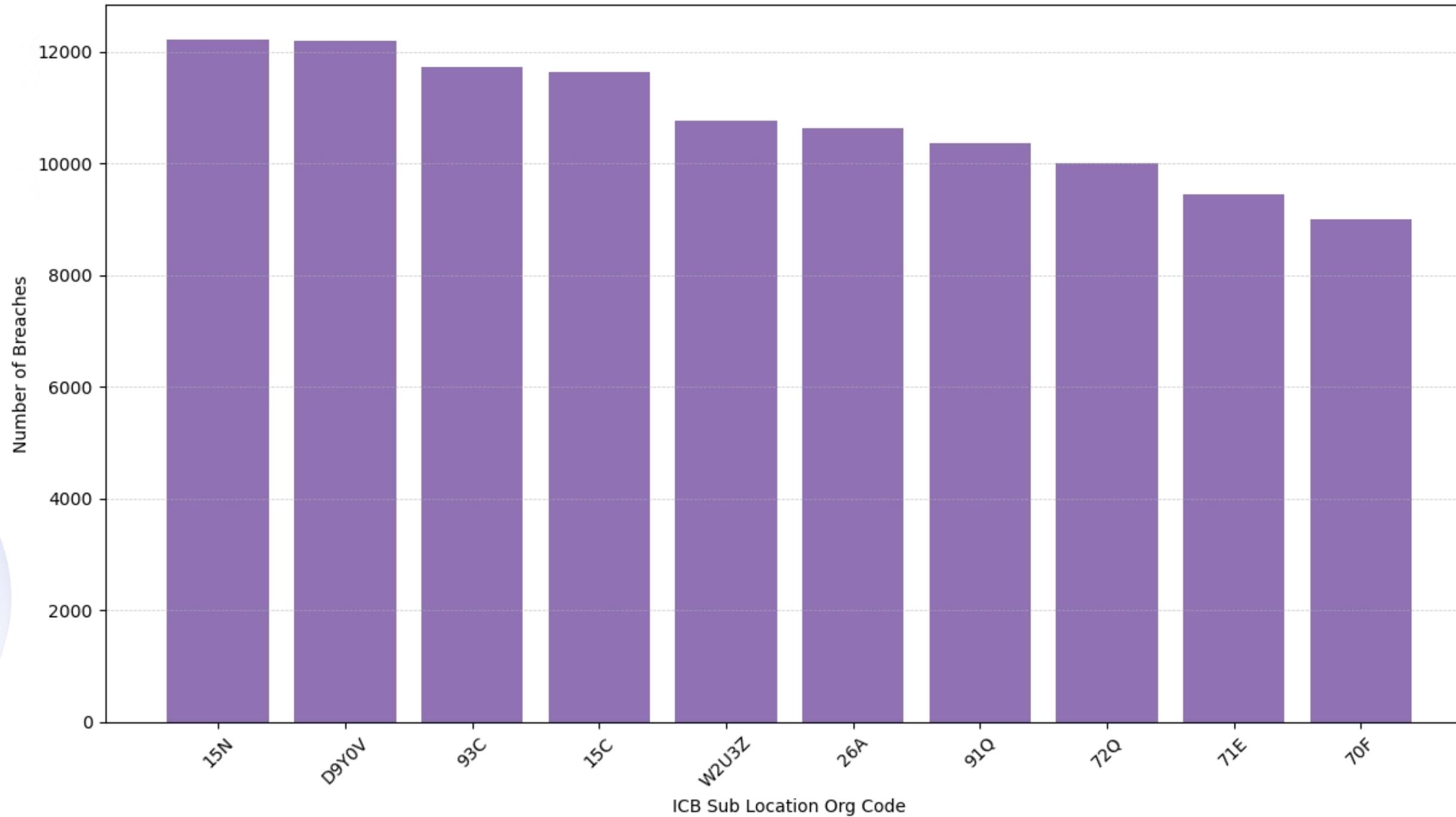
The distribution of compliance rates across quartiles showcases a marked variability in performance standards. From the top to the bottom quartile, there's a discernible gradient, indicating differences in numbers and operational consistency. This spread suggests that while some ICB Sub Locations consistently meet or exceed standards, others face challenges that impact their compliance. Addressing this variability is essential to achieve a more uniform standard of care across all locations.

# Top 10 ICB Locations with Highest Compliance



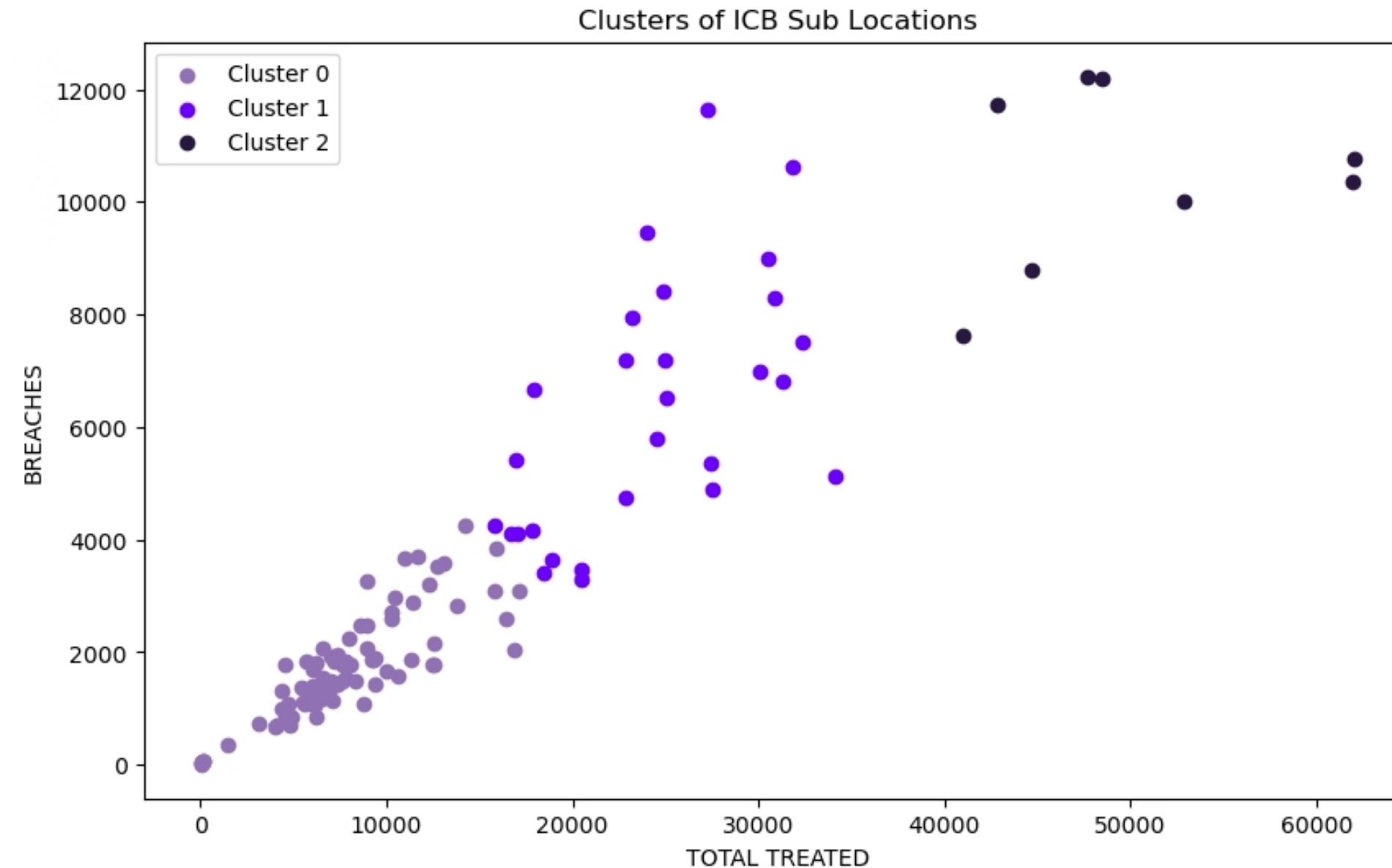
**11M** leads in compliance, registering at **87.91%**. This is followed by **00P** at **87.61%** and **02T** at **86.15%**. Notably, locations **X2C4Y**, **03R**, **00N**, **02H**, **92A**, **00L**, and **84H** consistently exceed the **84%** compliance threshold.

# Top 10 ICB Locations with Highest Breaches



Location **15N** reported a substantial **12,228 breaches**, marginally surpassed by **D9Y0V** with **12,205 breaches**. The breach figures for **93C** and **15C** are similarly elevated, at **11,740** and **11,637**, respectively. Other locations, such as **W2U3Z**, **26A**, **91Q**, **72Q**, **71E**, and **70F**, have also manifested significant breach numbers.

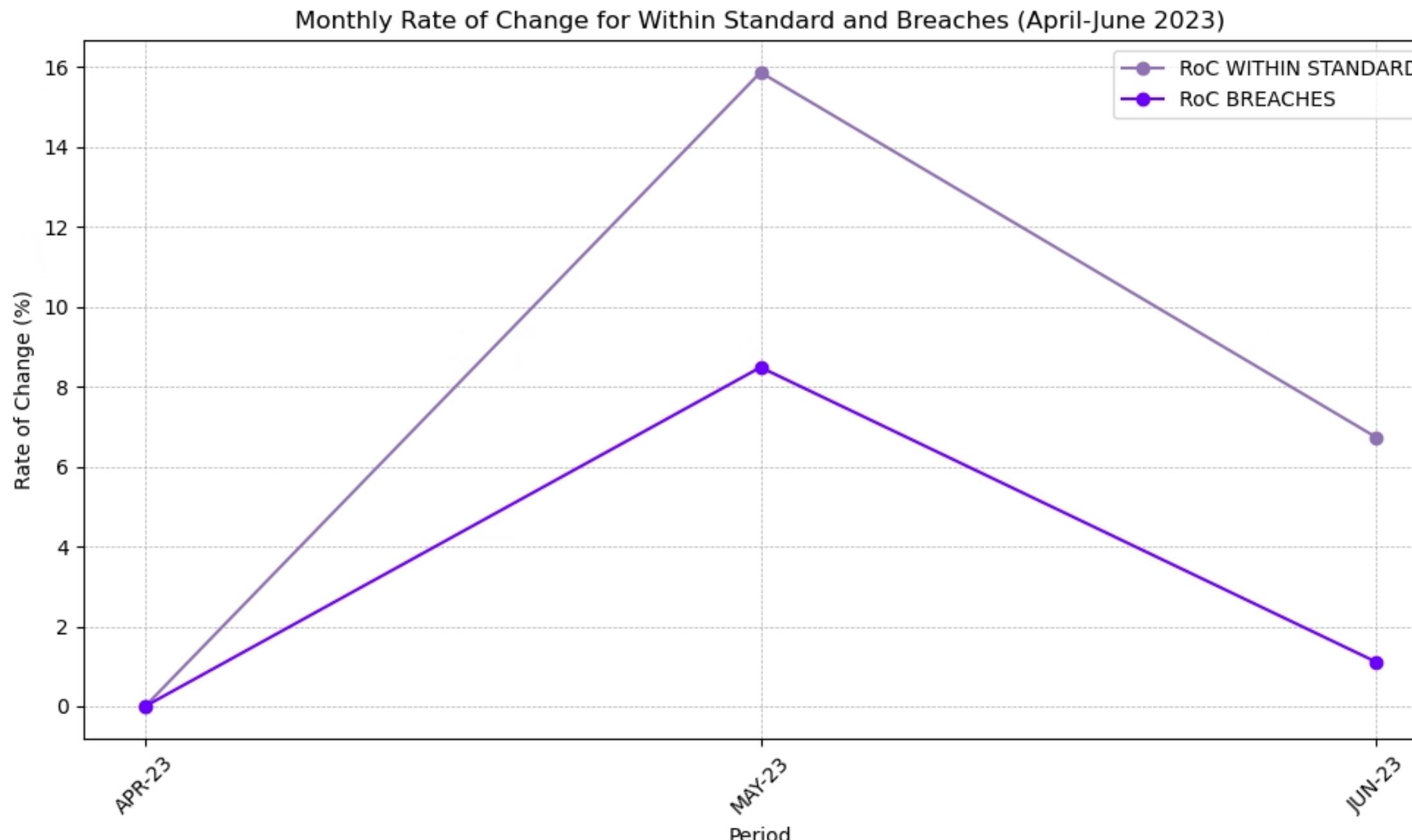
# ICB Location Performance Groupings



Three distinct clusters were identified among the ICB Sub Location Org Codes:

- **Cluster 0:** Represents locations with an average of 7,736 patients treated, with 6,023 treated within the standard.
- **Cluster 1:** Represents locations with an average of 24,152 patients treated, with 17,865 treated within the standard.
- **Cluster 2:** Represents locations with a significantly higher average of 50,191 treated, with 39,728 treated within the standard.

# Treatment Timeliness: Monthly Trends



May 2023 saw a rise of **15.87%** in patients treated within the standard and an increase of **8.49%** in breaches compared to April 2023.

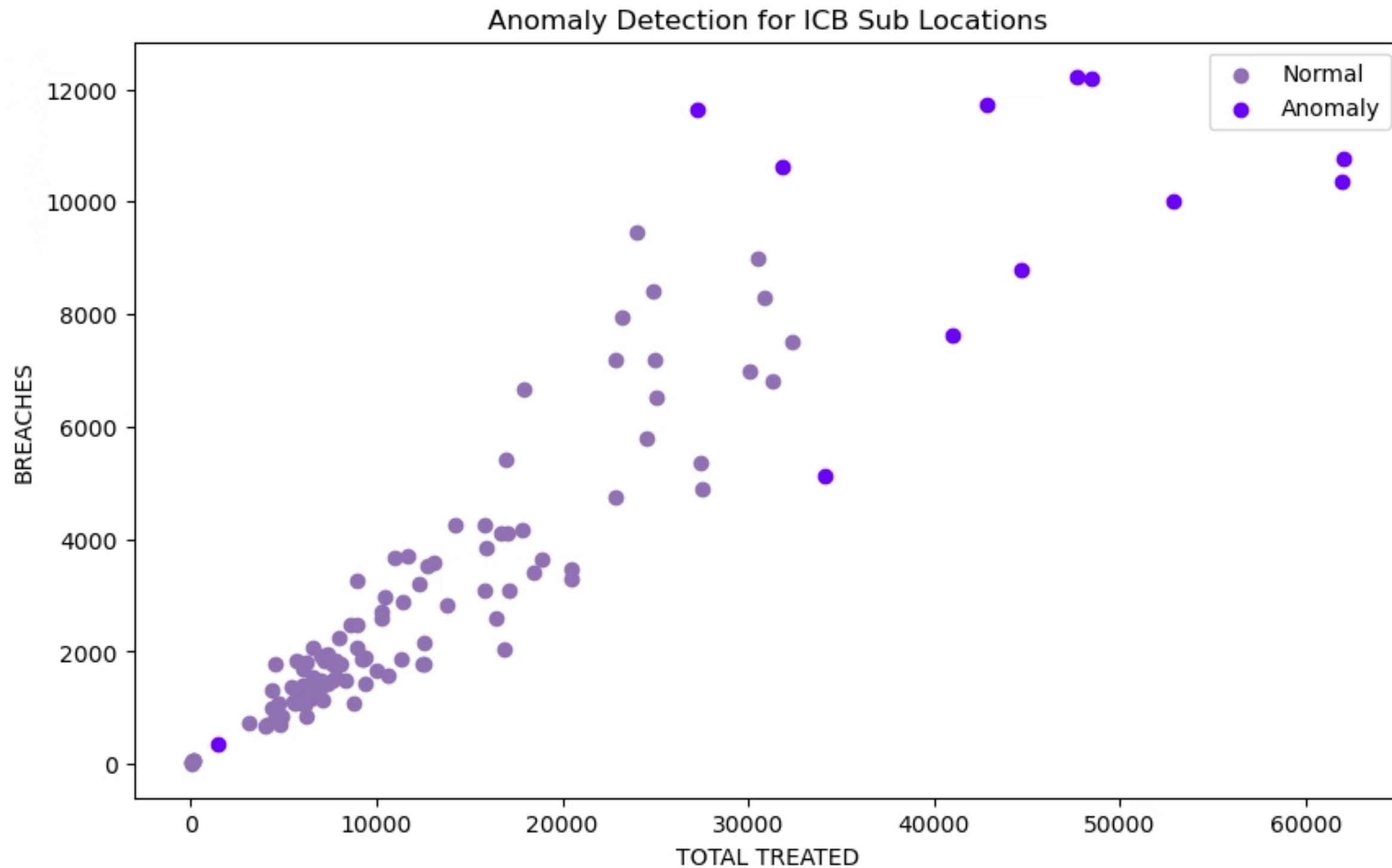
In June 2023, there was a **6.74%** increase in patients treated within the standard compared to May 2023, while breaches increased by **1.11%**.

## Rate of Change Equation

$$\text{RoC} = (\text{Previous Value} - \text{Current Value}) / \text{Previous Value} \times 100$$

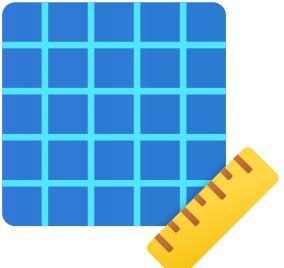
E.g. RoC Breaches for May 2023 = (Value in April - Value in May) / Value in April × 100

# Anomalous Patterns in Select ICB Sub Locations



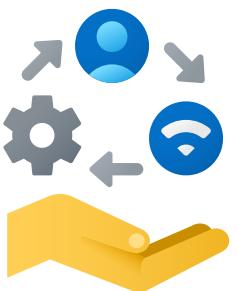
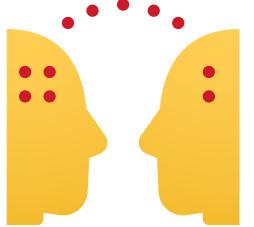
Anomalies were detected in ICB Sub Location Org Codes such as **13Q**, **15C**, and **15N**. These locations might have unusual patterns that require further investigation.

# Strategic Recommendations for Optimising Cancer Treatment Waiting Times



## Leveraging Best Practices Across ICB Locations:

- **Operational Blueprint:** Extract and document best practices from top-performing ICB locations. This blueprint can serve as a guide for locations facing challenges, enabling them to adopt proven strategies.
- **Knowledge Exchange:** Organise inter-ICB workshops, allowing locations to share insights, challenges, and solutions. This collaborative approach can elevate the overall standard of care.



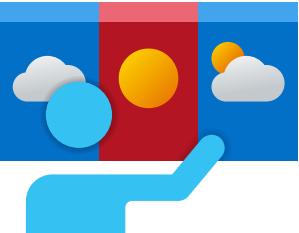
## Addressing Operational Scale Variations:

- **Dynamic Resource Management:** Recognise the distinct operational scales indicated by the clusters. Design a flexible resource allocation system, allowing for swift adjustments based on demand, especially for locations with higher patient volumes.
- **Tech-Driven Efficiency:** Consider investments in advanced technologies like telemedicine for locations with significant patient inflow. These tools can streamline processes, reduce waiting times, and enhance patient experience.



# Strategic Recommendations for Optimising Cancer Treatment Waiting Times

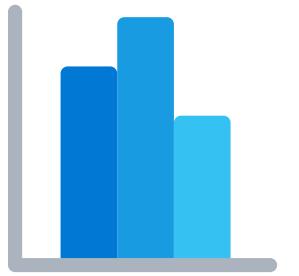
## Proactive Management of Monthly Fluctuations:



- **Predictive Analysis:** Utilise data analytics to anticipate monthly patient volumes and potential breach risks. This foresight can guide resource planning, ensuring preparedness for peak periods.
- **Patient Communication:** Establish a transparent communication channel to inform patients about potential waiting times, especially during high-demand months. This can manage patient expectations and enhance trust.



## Addressing Anomalies in Specific ICB Locations:



- **In-depth Analysis:** For ICB locations identified as outliers, conduct a comprehensive root cause analysis. This deep dive can uncover unique challenges or innovative practices influencing their performance.
- **Feedback Mechanisms:** Strengthen patient feedback systems in these locations. Direct insights from patients can provide valuable perspectives on their care experience, highlighting areas for improvement or best practices worth sharing.



# Bridging Insights with Action: A Holistic Approach to UK Cancer Care Waiting Times

The analysis of cancer care waiting times in the UK has unveiled a complex interplay of factors contributing to unprecedented delays. These findings are not mere statistics but indicators of underlying operational and infrastructural challenges that require a strategic response.

Our examination of the data has led to actionable insights. From identifying the need to reassess uniform waiting time standards to recognising the importance of resource allocation, the analysis has provided a roadmap for targeted interventions.

The key business considerations, including financial repercussions, operational insights, and patient-centric impacts, further underscore the necessity for a multifaceted approach. The proposed action steps, such as implementing dynamic resource allocation, investing in technology, and fostering transparent communication, are grounded in a comprehensive understanding of the current landscape.

In conclusion, this analysis has highlighted the critical areas of concern and paved the way for informed decision-making. By linking insights with pragmatic solutions, we can contribute to optimising healthcare operations in the UK, ensuring timely and effective cancer care.

# Reassessing Waiting Times: Beyond the Numbers



01

## Evolving Healthcare Needs

**Demographic Shift:** An ageing population in England leads to more cancer cases, necessitating a re-evaluation of waiting times.

**Case Complexity:** Different cancer types have varying urgencies. A uniform waiting time might only be optimal for some.



02

## Infrastructure Challenges

**Resource Limits:** The healthcare system faces workforce, equipment, and financial constraints.

**Operational Bottlenecks:** Existing processes might have inefficiencies that need addressing more than waiting times.

**Priority Balancing:** The system must allocate resources based on urgency and impact, sometimes leading to reallocations.



03

## Patient-Centered Approach

The UK's healthcare focus has shifted towards a patient-centred approach in the past decade, highlighted by the NHS Long Term Plan and the adoption of digital health tools. This evolution aligns to reduce waiting times, and ensure optimal patient outcomes through personalised care and streamlined healthcare provision.

# Thank you for listening



## Do you have any questions?



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