Making Existing NHS Capacity Work Harder

Key insights from 12.8 million appointments (2019-2023)

Business Problem

- **Rising demand pressures NHS infrastructure**
  With a growing population, the NHS must determine whether to expand physical capacity or improve the use of existing staff and resources.

- **High rates of missed appointments cause financial and social strain**
  Missed GP appointments waste limited clinician time and disproportionately affect vulnerable groups - yet the root causes remain poorly understood.

- **Lack of integrated insight limits proactive planning**
  Utilisation trends across locations, service settings, and social media signals (e.g. illness spikes on Twitter) are not fully leveraged in decision-making, impeding smart, data-driven allocation of resources.

Insights

Demand Trend

- **Post-lockdown recovery drove record appointment volumes in early 2022**
  After the sharp drop in April 2020, appointment levels rebounded past 3 million per month by January 2022.

- **Seasonal demand peaks highlight winter surges and spring slowdowns**
  Monthly volumes show recurring highs in December–March and dips every April, indicating predictable seasonal cycles.


Monthly Appointment Volume
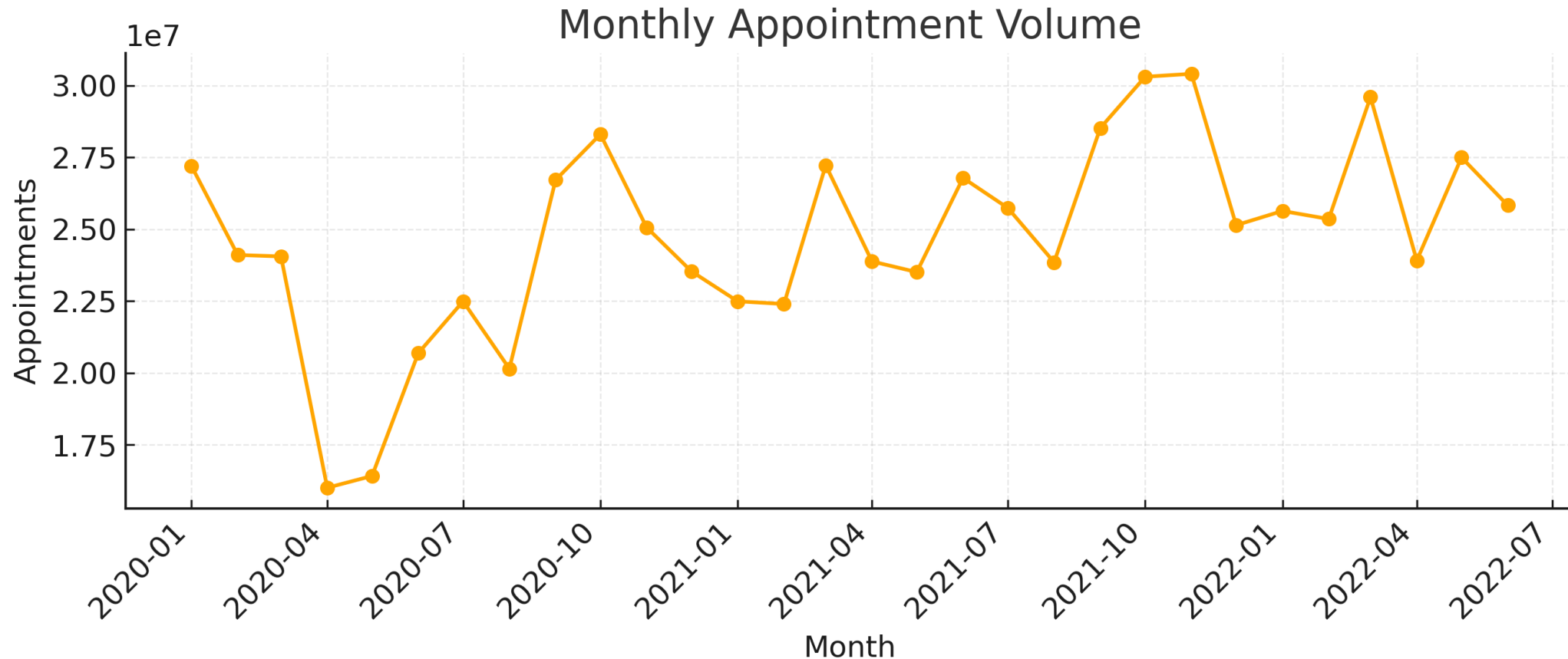
Utilisation Trend

- **National utilisation rarely exceeds 88% — even during winter peaks**
  The NHS operates well below its 1.2M daily capacity for most of the year, indicating unused potential.

- **Substantial headroom suggests optimisation over expansion**
  With summer dips reaching ~65%, the key issue is not capacity shortfall but how staff time aligns with demand patterns

Figure 2: Monthly Utilisation (% of 1.2M/day capacity)
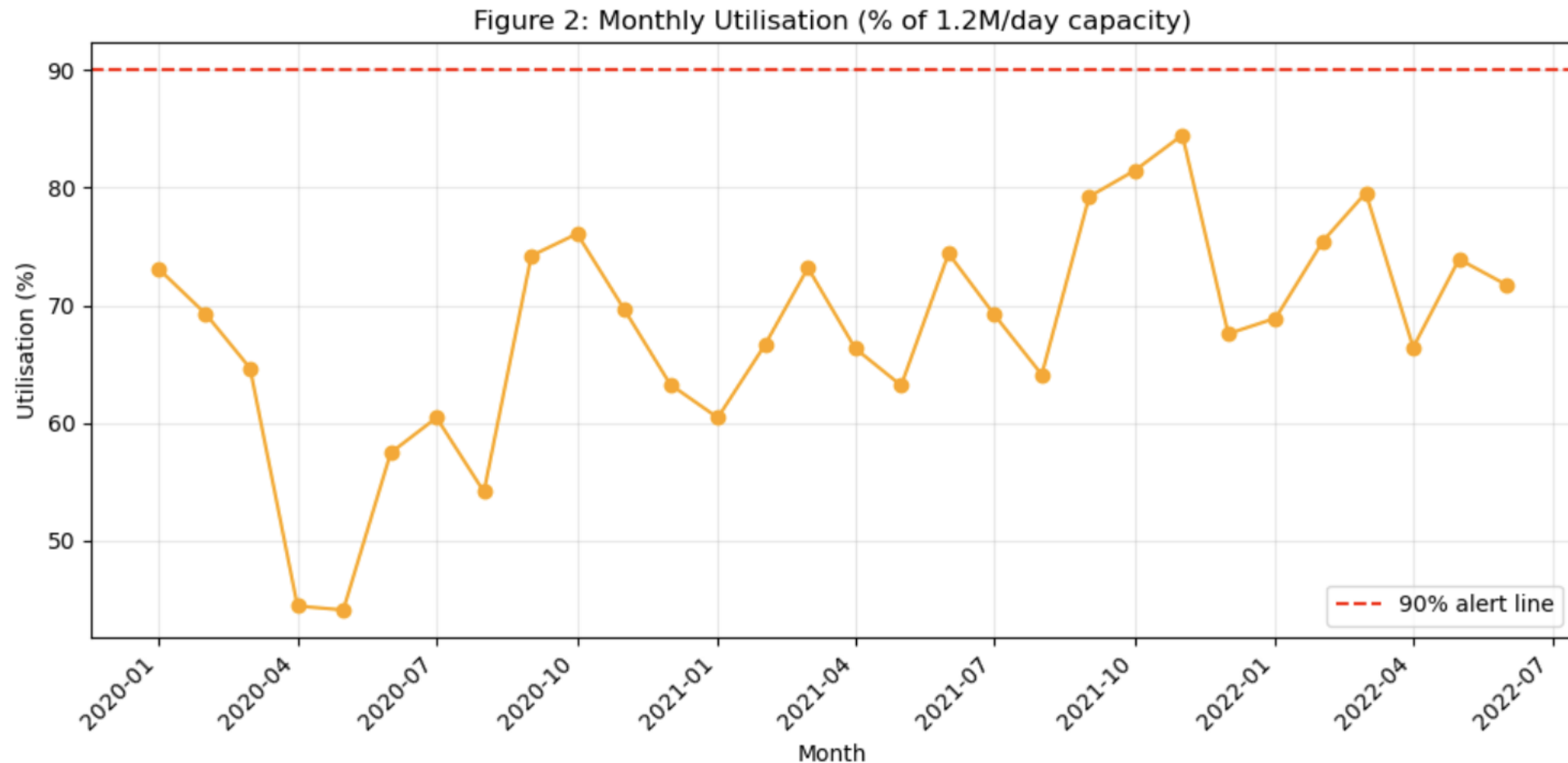
Where Care Happens

- **General Practice dominates care delivery**
  Roughly 70% of appointments occur in General Practice, highlighting its central role in the NHS network.

- **Unmapped data obscures nearly 1 in 10 appointments**
  The "Unmapped" category hides around 10% of activity—resolving this gap is key to accurate resource planning


Total Appointments by Service Setting
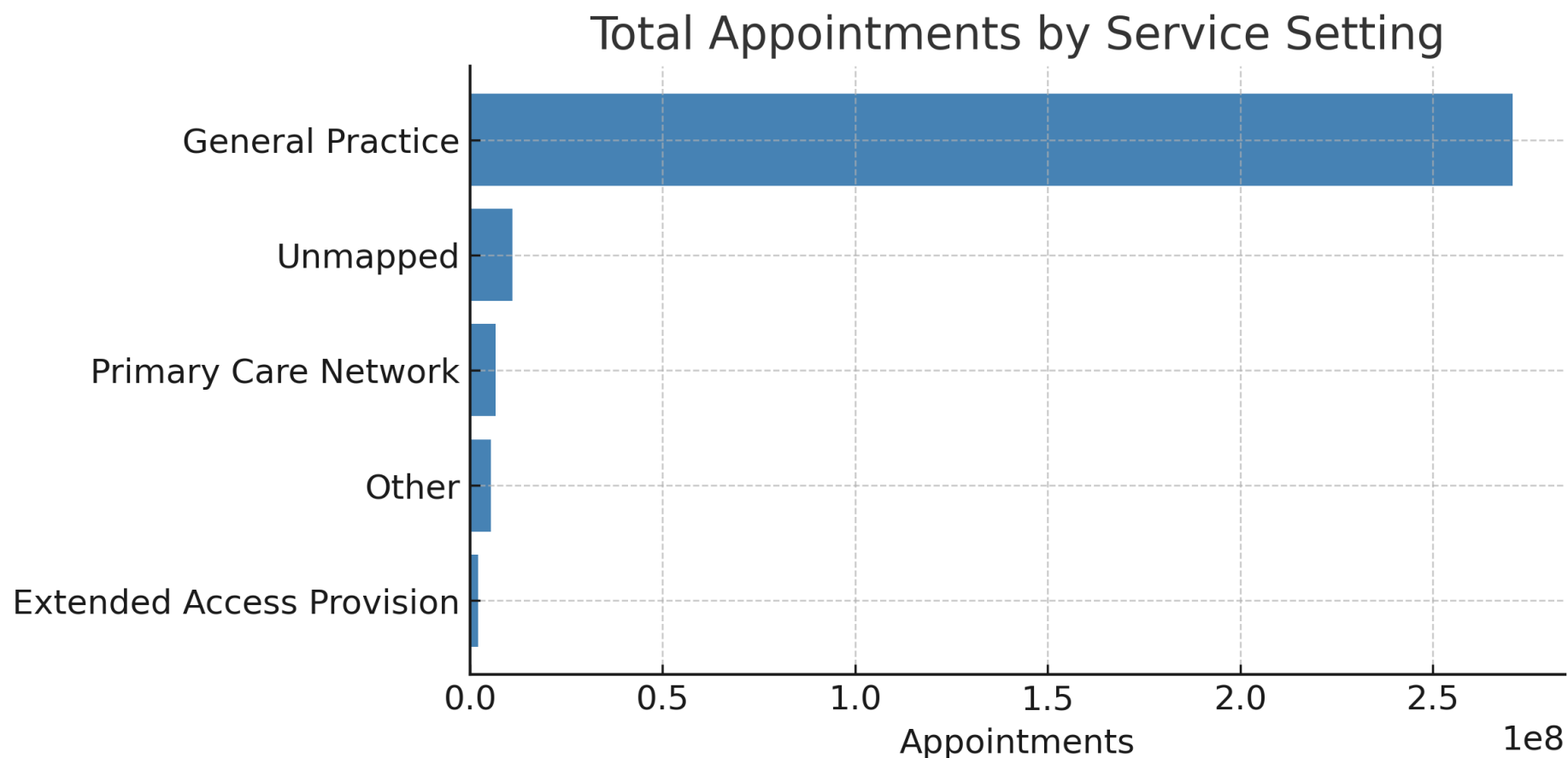
Where Care Happens (MoM)

- **General Practice consistently delivers over 90% of appointments**
  Its share remains stable month-to-month, reinforcing its central role in NHS delivery.

- **Other settings, including Extended Access, play a minor but steady role**
  Each alternative setting holds under 5% of monthly volume, showing limited service diversification.

Share of Monthly Appointments by Service Setting
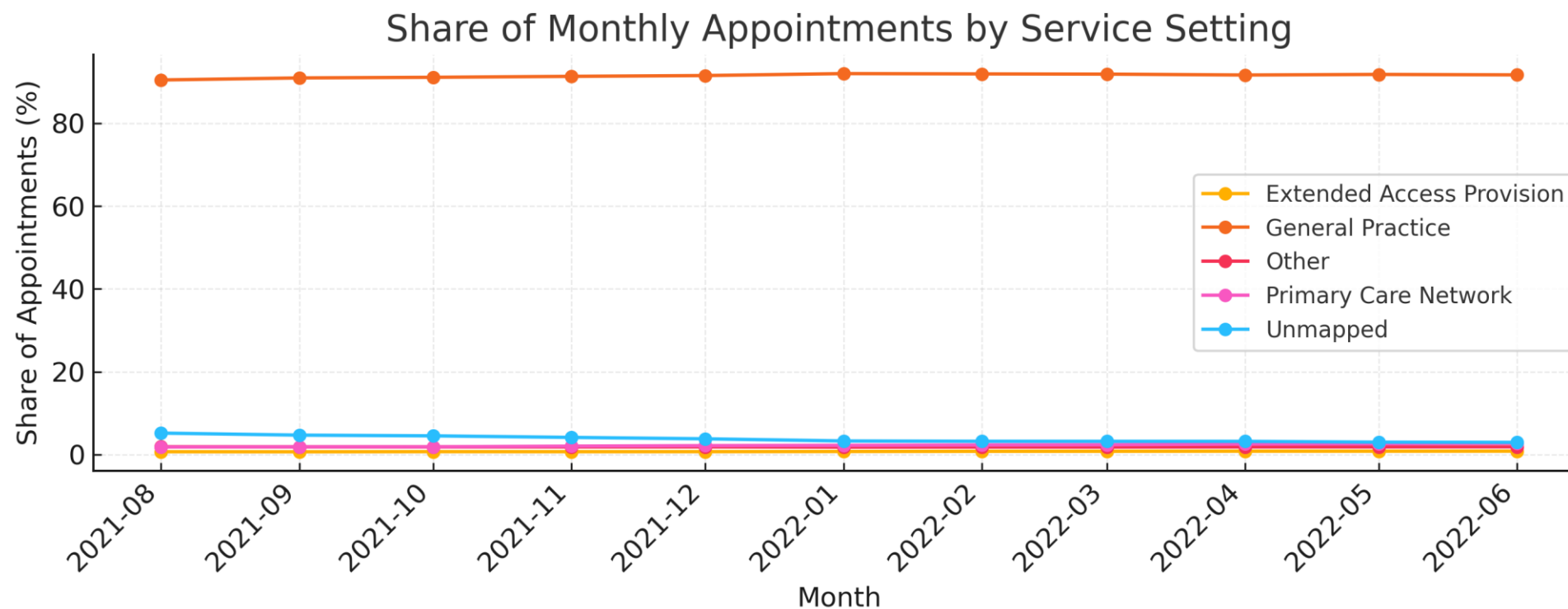
Capacity by Service Setting

- **Only General Practice nears critical utilisation thresholds**
  It approaches - but never breaches—the 95% alert line, confirming it's the most stretched setting.

- **Other settings operate well below potential**
  With most staying under 60%, rebalancing staff during peak months could ease GP pressure without hiring.

Figure 4: Monthly Utilisation by Service Setting
(1.2 M × days in month)
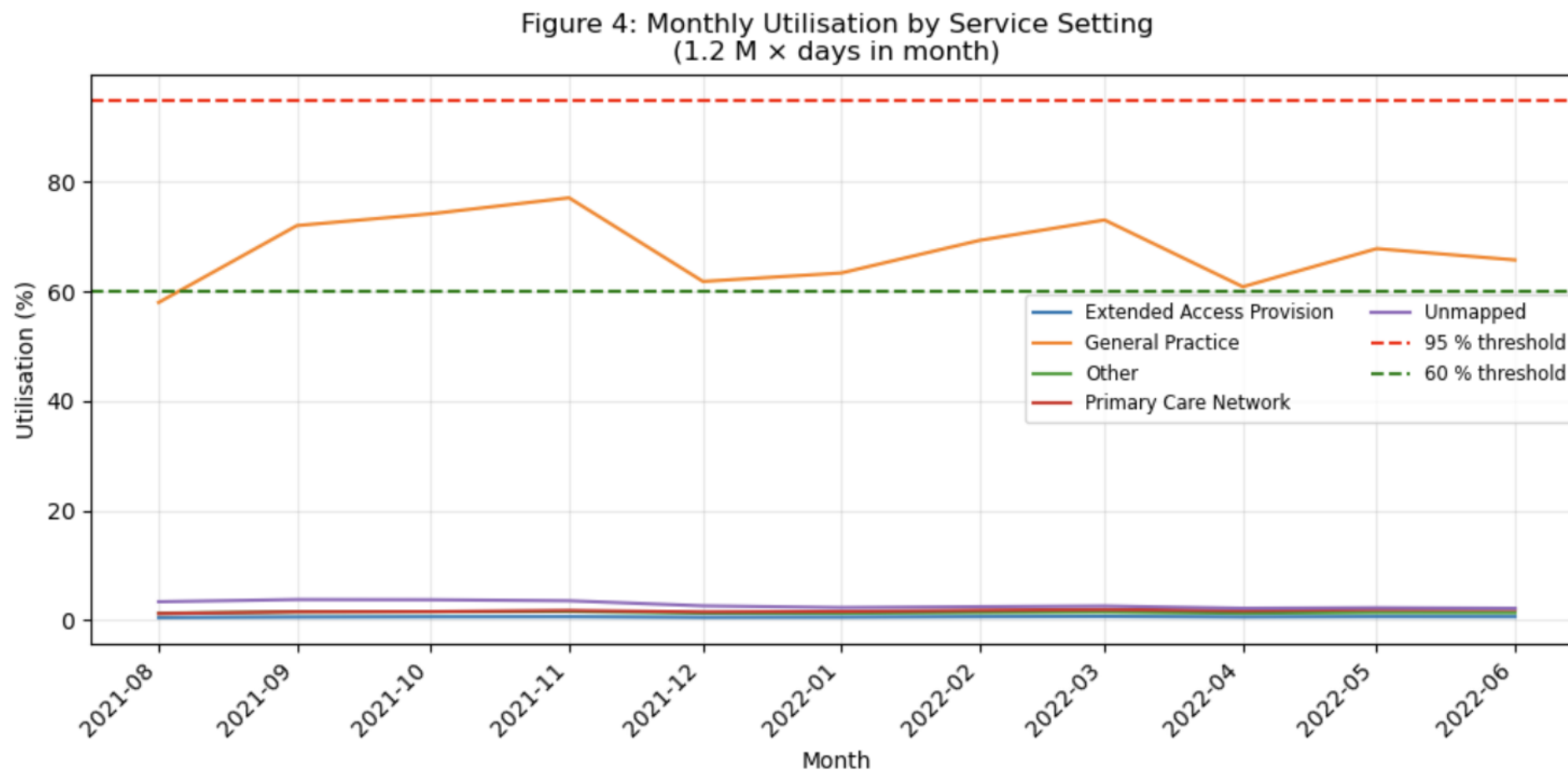
Weekday Imbalance

- **Monday overload highlights scheduling inefficiency**
  Mondays handle 18,000 more appointments than Fridays, creating early-week pressure and late-week slack.

- **Redistributing just 3% of weekly appointments can unlock 150+ FTEs**
  Shifting volume to Fridays or evenings could balance load - without extra staffing or cost.

Figure 6 Appointments by Weekday
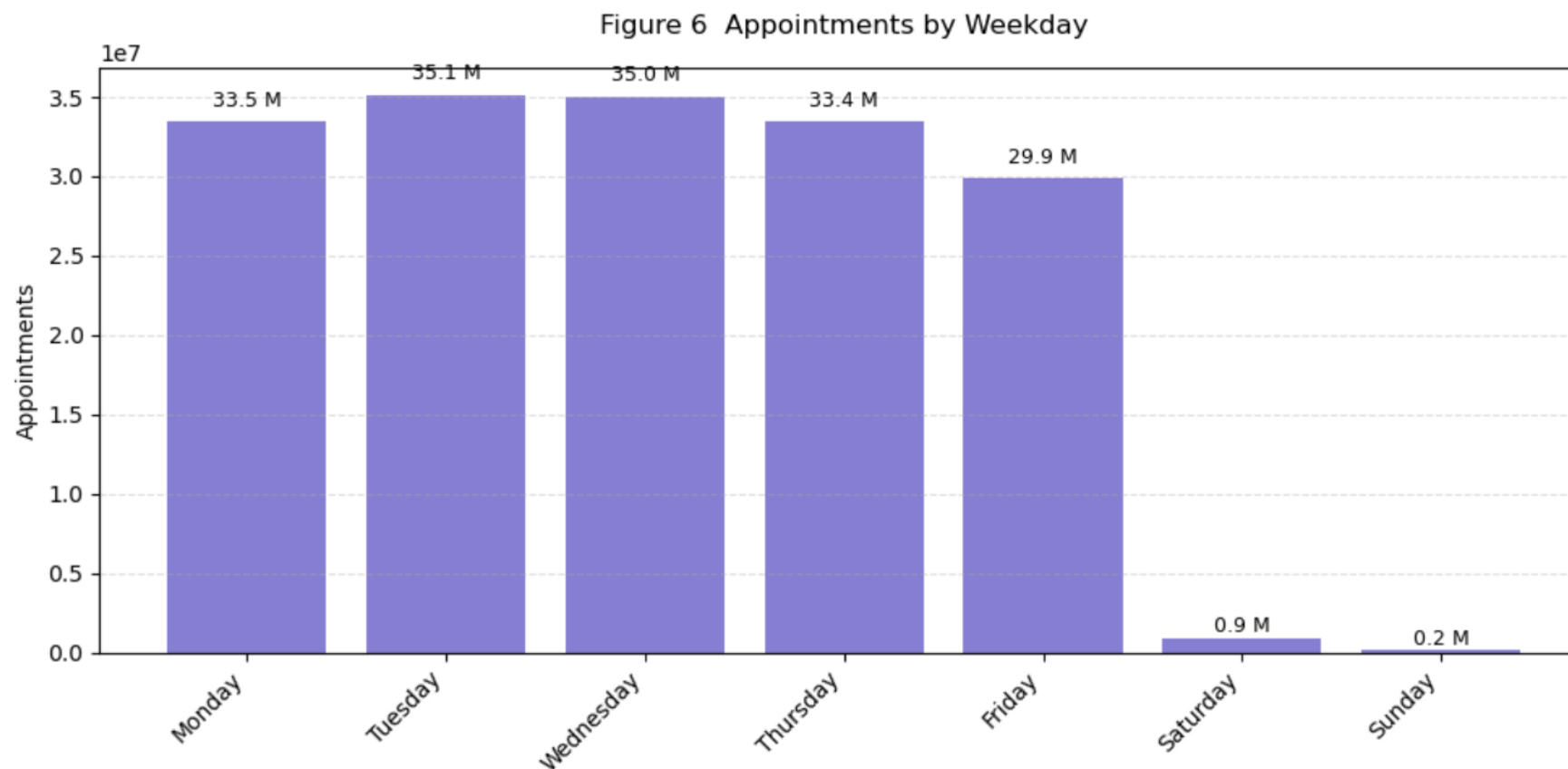
Mode of Care

- **Face-to-face still dominates, with video vastly underused**
  Roughly two-thirds of all contacts happen in person, despite available virtual options.

- **Pandemic-driven telehealth gains have stalled**
  Despite a surge in phone consultations during early 2020, usage has plateaued - video remains negligible.

Figure 7 - Appointment Mode Mix
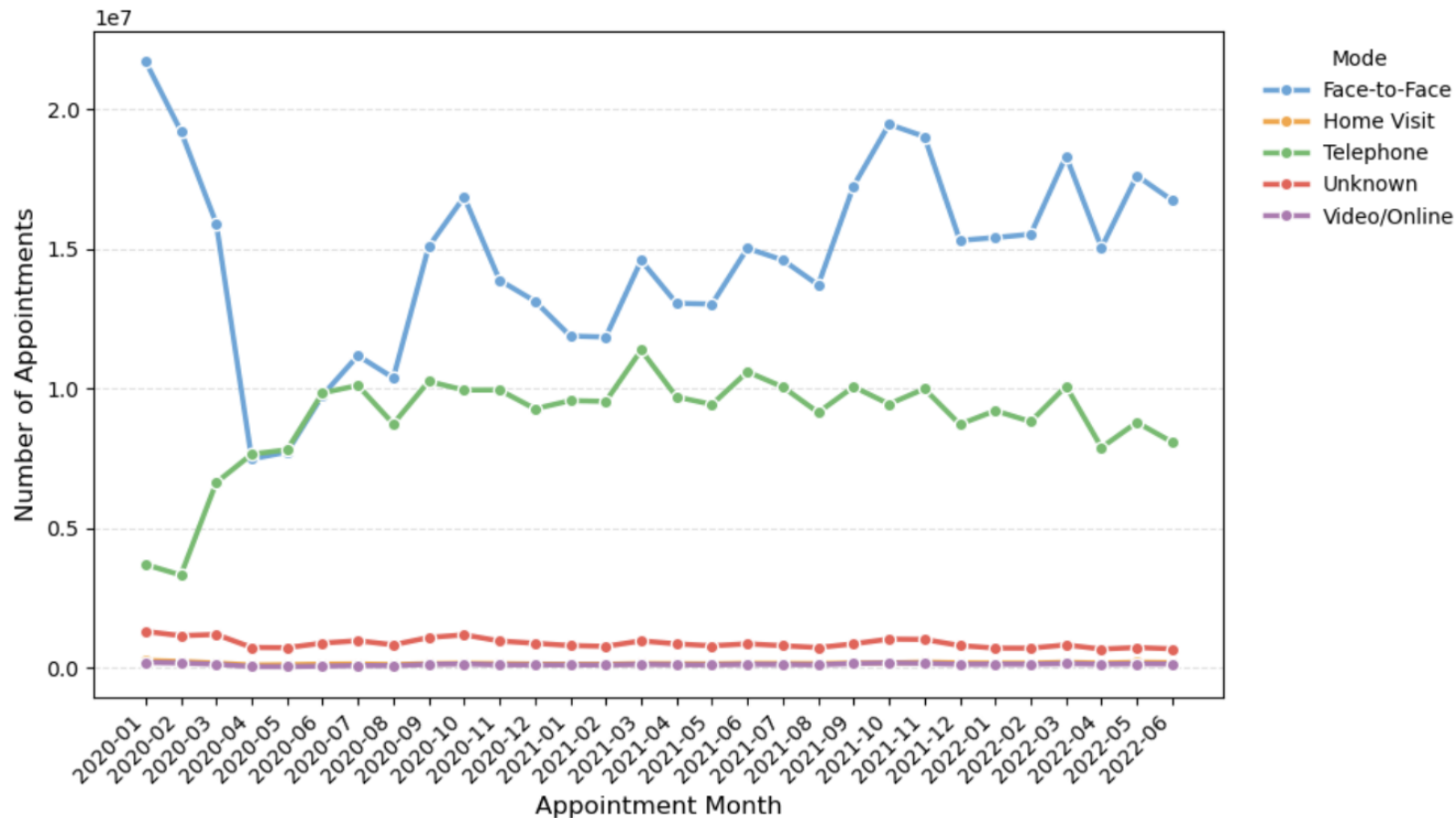
Mode of Care – What if?

- **Small digital shifts yield big gains**
  Moving just 5% of same-day appointments online frees up 800,000 face-to-face slots annually.

- **Online triage can absorb urgent demand without expanding staff**
  Virtual redirection of low-complexity cases improves access and reduces pressure on physical clinics.

Impact of Moving 5% of Same-Day Appointments Online
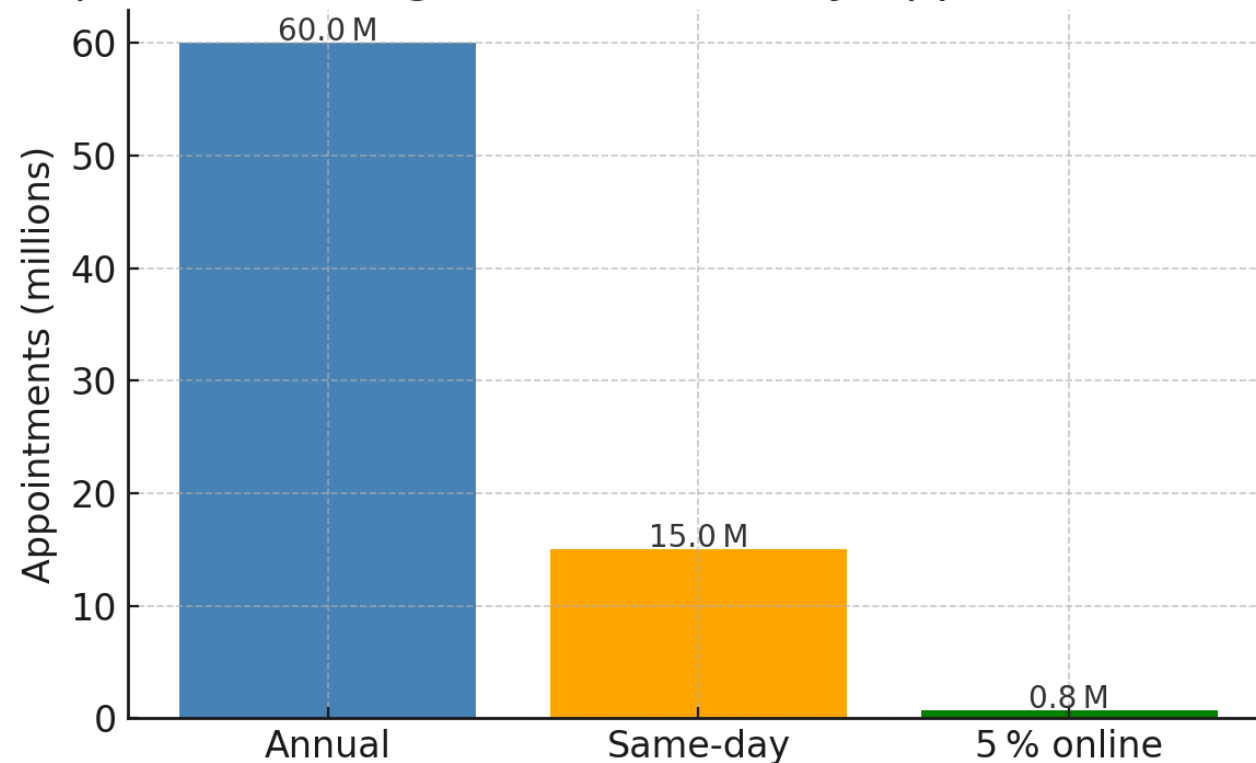
DNA & Lead-time

- **Same-day appointments have the lowest DNA rate**
  But they make up the largest share of bookings—placing intense, reactive pressure on frontline staff.

- **DNA rates rise sharply beyond a 3-week lead-time**
  Appointments booked over 21 days in advance have non-attendance rates exceeding 25%.

- **Every 1% of DNA wastes around 62,000 clinician hours per month**
  Shifting routine bookings into the 7–21 day "sweet spot" could free the equivalent of 120 full-time staff.

Appointments by Lead-time Band

DNA Rate by Lead-time Band
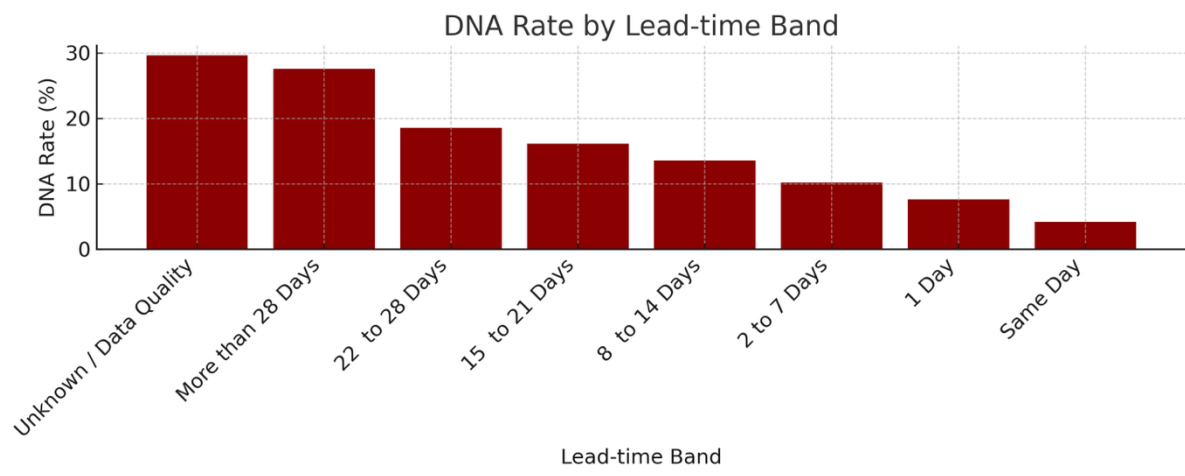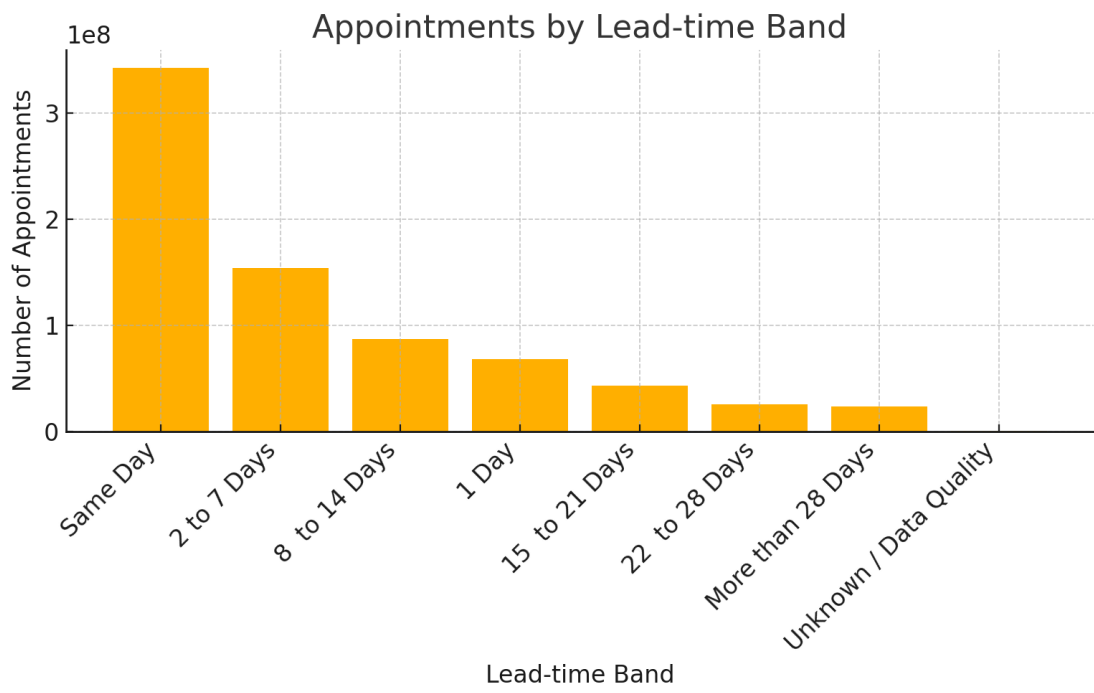
Social Listening

- **Spikes in health-related hashtags signal rising public concern**
  Trends like #flu or #healthcare can act as early warning systems for demand surges.

- **Real-time social media data can inform rota planning**
  Monitoring public sentiment helps anticipate staffing needs days ahead of official data.


Top Health Hashtags on X
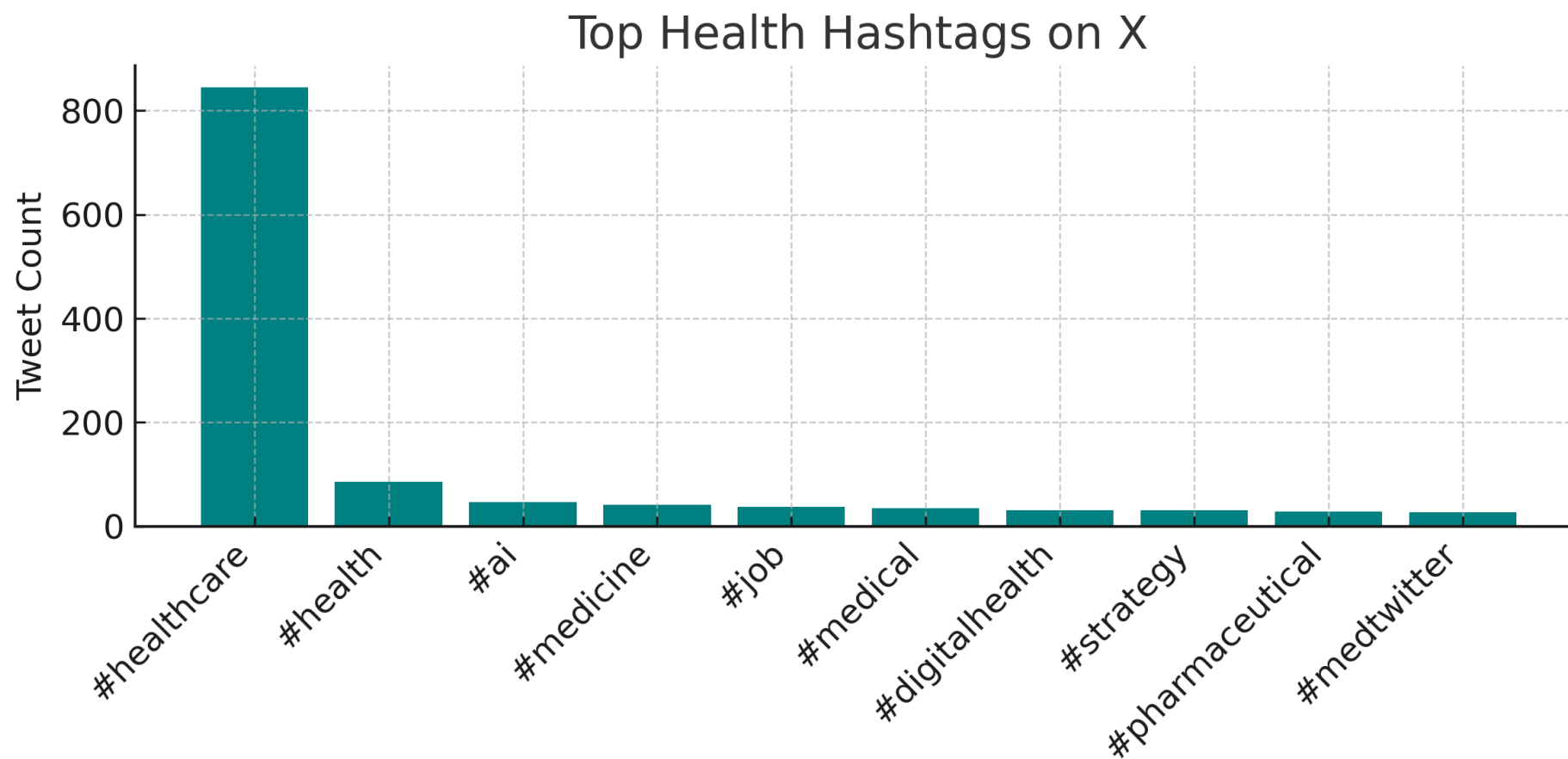
Location Drill Down

- **Next step: regional analysis**
  After our national-level insights, we can now drill down by location to uncover local variation and improvement opportunities.

- **Could regions learn from North West London's diversified model?**
  While "Unmapped" activity remains unclear, NW London shows a lower reliance on core GP and a higher share across PCNs and other settings. This suggests a more flexible service mix - worth exploring in other ICBs.

Service Setting Mix by Region (Top 10 by Volume of Appointments)
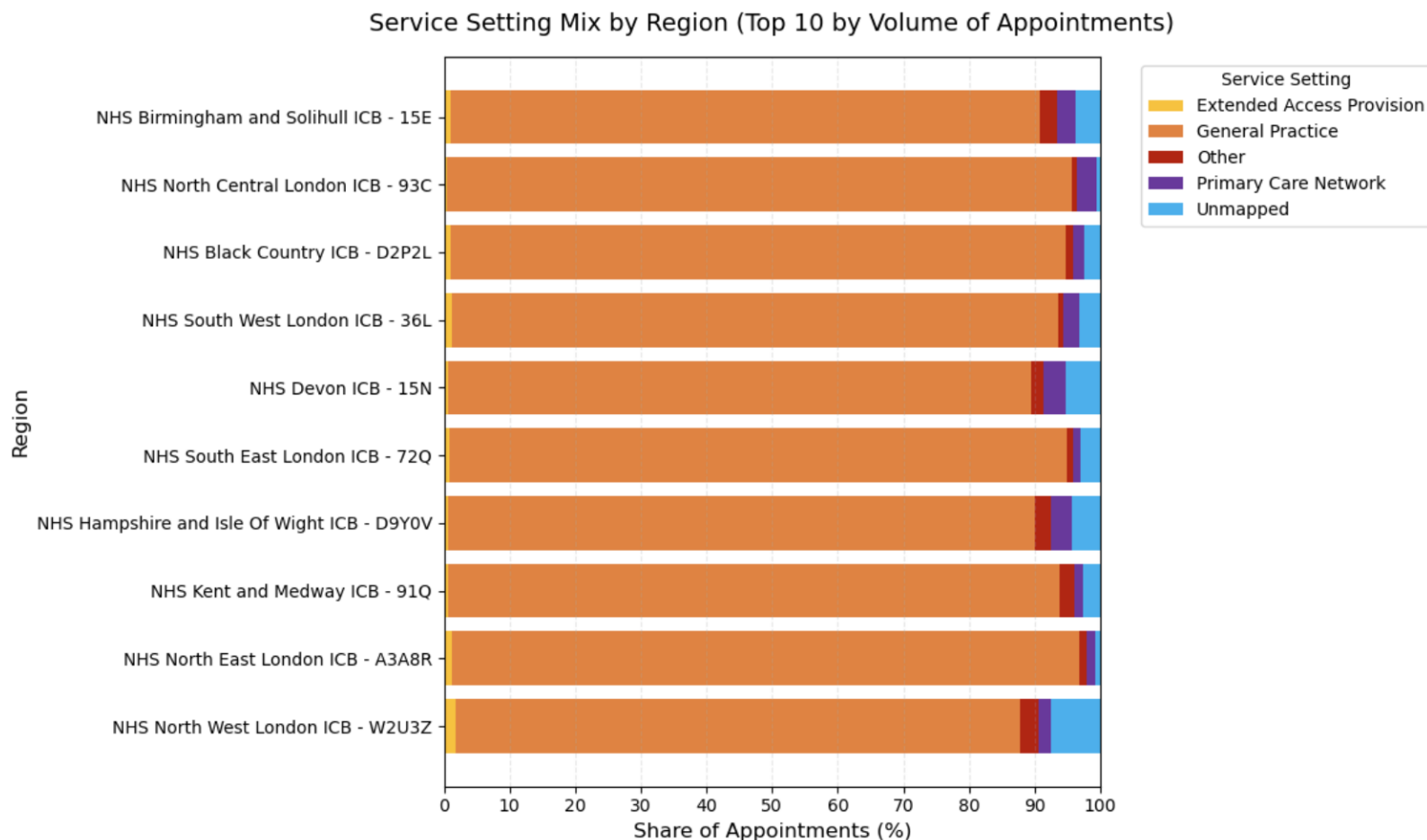
Recommendations

Action Plan

💻 Redirect low-complexity cases online - Shift 5% of same-day appointments to video to free 800,000 slots/year

📅 Balance weekly appointment distribution - Reduce Monday pressure by shifting appointments to Fridays

⏱️ Target the 7 - 21 day lead-time window - Lower DNAs and reclaim 60,000+ clinician hours per month

🧭 Pilot digital triage and booking defaults – Nudge portal users to optimal booking times and modes

Action Plan

Build real-time rota alerts using social media – Detect spikes in health hashtags to adjust staffing

Fix 'Unmapped' service and context codes – Improve data quality to support smart planning

Optimise under-utilised service settings – Float staff to meet seasonal surges without new hires

Drill into location-level insights – Explore regional service mixes to identify best practices and uncover hidden capacity opportunities

Defer new infrastructure investment – Wait until utilisation exceeds 95% before expanding capacity

Conclusion

🔄 **Synchronise demand**
Better align appointments with capacity using smart scheduling, digital triage, and improved booking windows.

🔒 **Unlock 100s of FTEs**
Reduce missed appointments, rebalance weekly loads, and absorb seasonal surges without additional hiring.

🏗️ **Then assess capital expansion**
Only once sustained utilisation consistently exceeds 95% should infrastructure growth be reconsidered.

NHS

Questions?