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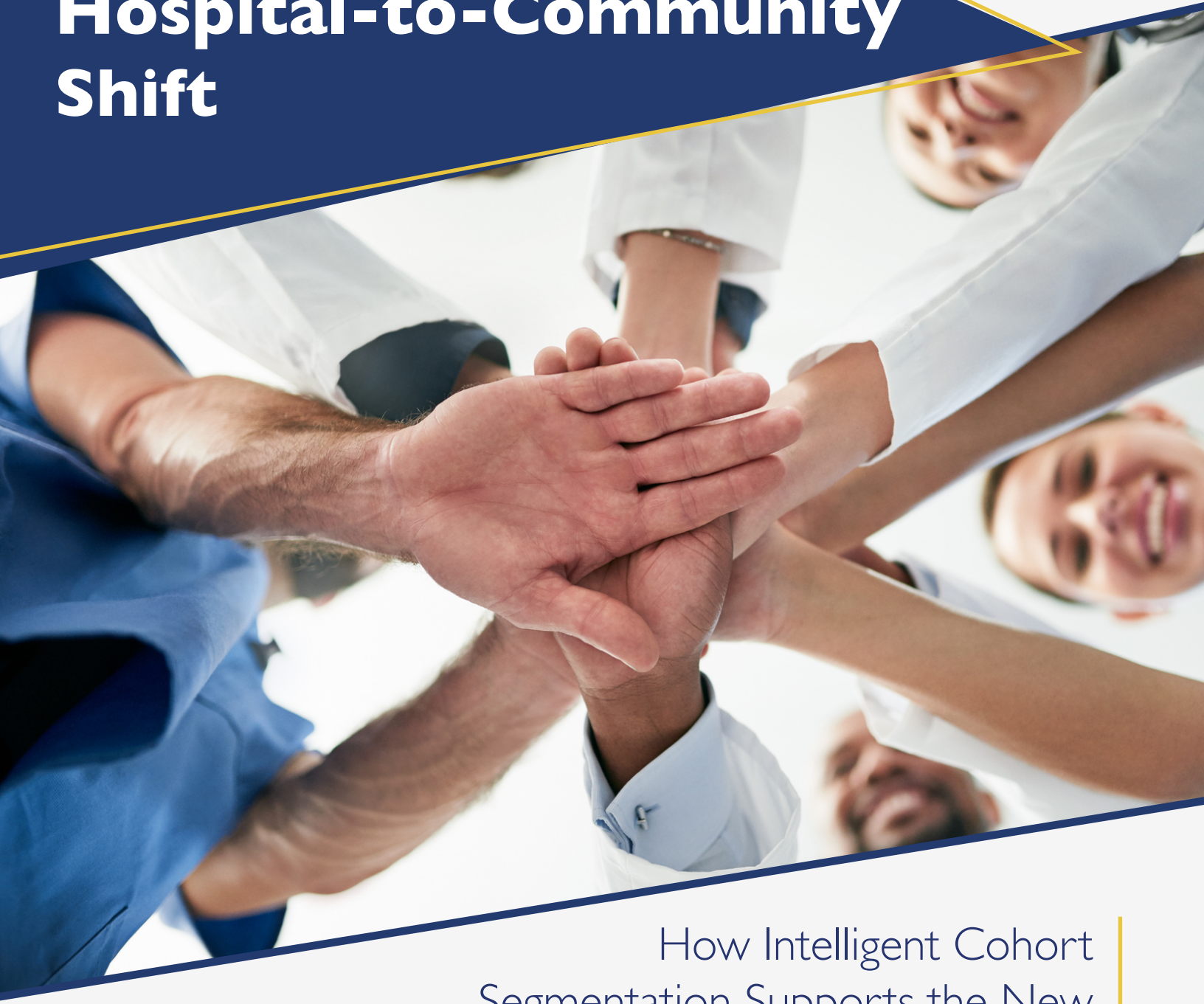
Bridging the Hospital-to-Community Shift



How Intelligent Cohort Segmentation Supports the New NHS Operating Model

Developed in collaboration with Graphnet Transforming Care

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Executive Summary and Introduction

Health systems across the UK (and globally) are under unprecedented pressure. Rising demand, workforce shortages, growing multimorbidity and widening health inequalities mean that a hospital-centric model of care is no longer sustainable. National policy is clear: care must shift upstream, closer to home, with prevention, early intervention and neighbourhood-based services at its core.

This guide explores how intelligent population segmentation can turn this ambition into operational reality. Drawing on real-world examples, it shows how health systems are already reducing avoidable admissions, improving access and equity, and using scarce clinical resources more effectively by understanding population need at a granular level.

Johns Hopkins has developed an intelligent segmentation model — Patient Need Groups (PNGs) — as part of a comprehensive population health management tool — the Johns Hopkins ACG® System — that groups populations into clinically meaningful cohorts and is central to this shift. When embedded within population health and shared care record platforms, this segmentation becomes a powerful engine for proactive, integrated care planning across neighbourhoods, places and systems.



This practical guide is designed for Integrated Care Boards, Trusts and primary care leaders who are seeking to deliver the NHS vision for a more integrated, preventive and community-centred health system. It outlines what success looks like, how intelligent cohorting supports better decision-making, and the practical steps organisations can take to begin shifting care safely and sustainably from hospital to community settings.

What does success look like?

In practice, success in shifting care closer to home must be defined in measurable, system-wide terms. Across health systems that are using population segmentation effectively, this typically includes reductions in avoidable hospital admissions, shorter lengths of stay for defined cohorts, earlier identification of rising risk, improved access for underserved groups, and more efficient use of clinical and non-clinical workforce capacity.

Success is not measured by activity alone, but by outcomes, patient and provider experience, and health equity.

It's easy to say that care should be delivered closer to home, but the first step is understanding what that would look like in practice and defining what 'success' really means in measurable terms. Let's look at some areas where the ACG System has been used successfully to achieve this and how.

Reducing Avoidable Admissions

- Reducing avoidable hospital admissions can keep care closer to home. Some patients may access hospitals for non-urgent care that could be more effectively managed in the community. Timely primary or community-based interventions can prevent unnecessary emergency department (ED) visits and hospital stays, delivering care more efficiently and cost-effectively.

Using PNGs for intelligent cohort segmentation, health care teams can identify which patients have similar characteristics and could be safely supported through local, community-based services. By grouping patients with similar risks and needs, clinicians can proactively manage potential deterioration and intervene before conditions escalate, reducing avoidable admissions and easing pressure on acute settings.

This comprehensive population health approach also highlights which patients are high users of health care services or have multiple comorbidities, enabling more targeted, proactive management. By understanding the patient population in this way, care teams can focus resources where they are most needed, ensuring care is delivered in the right place, at the right time.

Evidence in Practice:

Frimley Health and Care Integrated Care System has developed leading population health intelligence capabilities that build upon a mature shared care record programme, supported by Graphnet and incorporating the ACG System as its population risk stratification tool.

The team uses PNGs to segment the population and analyse urgent and emergency care demand, driving significant care delivery improvements across the area. **Minor illness cases within low to moderate PNG segments 3 and 4 made up 15% of total attendances, with a 12.8% admission rate. Clinicians identified this as a modifiable opportunity to reduce overall demand.**

Optimise Care Pathways

Ensuring patients receive appropriate interventions at the right time, from the right teams, while accounting for the full spectrum of clinical and social needs, is critical. By leveraging the ACG System's clinically based cohort segmentation, health care teams can use the insights to design targeted, efficient pathways — from prioritising perioperative care to smart discharge planning — helping to prevent avoidable readmissions.

This is particularly important at points of transition, such as discharge from hospital, where unmet clinical or social needs can quickly lead to avoidable readmission. Cohort-based insights enable teams to plan discharge earlier, involve community services proactively and tailor follow-up according to risk rather than applying a one-size-fits-all approach.

Clear cohorting enables care teams to identify patients with multiple comorbidities or social risk factors that may contribute to complications or hospital admissions. By proactively addressing these risks upfront, interventions can be tailored to the individual's needs, ensuring consistent care throughout their journey. This approach not only improves outcomes for patients but also helps health systems use resources more effectively, reducing pressure on acute care and supporting smoother transitions back into the community.

Evidence in Practice:

Buckinghamshire Healthcare NHS Trust (BHT) has implemented an innovative perioperative dashboard approach, which is streamlining surgical pathways and reducing perioperative waiting lists. Working with Graphnet and using the ACG System, BHT has integrated surgical waiting lists within its shared care record. **This has led to significant efficiencies in patient care and improved perioperative management.**

Improved Access and More Equitable Care for Patients

Equity is a core objective of the hospital-to-community shift, not a secondary benefit. Recognising disparities and different needs across the patient population, the central focus is to provide care fairly to everyone and promote access to services that meet both individual and population needs. Social risk factors — including proximity to hospitals, housing and transport — as well as functional impairment and frailty, all influence access to care and patient outcomes. By leveraging ACG System risk markers, including patients' clinical complexity, frailty and social risk indicators, practices can prioritise care proactively, ensuring high-risk patients receive timely interventions from the most appropriate health care professional. This approach helps create a system that is fair, responsive and tailored to the needs of every patient.

Evidence in Practice:

Brookside Surgery in Berkshire was able to address inefficiencies in triage, long phone queue times for patients and assignment of patients to the right clinician. Clinicians were burdened with administrative tasks that limited patient care time. A safer, more equitable triage system was created using the ACG System to ensure patients could access the practice in their preferred way — via phone, online or in person. This enabled urgent cases to be prioritised effectively while improving overall access. **Receptionists were equipped to help all patients overcome barriers and get faster access to care and clinicians had more time for meaningful patient interaction, leading to better patient and staff satisfaction.**

Productivity Gains Across the System

The ACG System can help improve productivity across the system by explaining patients' health risks, which informs smarter allocation of services and staff based on patients' needs. Through segmentation and risk stratification, the ACG System identifies patient cohorts and their level of risk. Provider collaboratives can then prioritise in-person appointments for those with more complex or urgent needs, while monitoring others remotely.

This approach directly supports workforce sustainability by enabling top-of-licence working across multidisciplinary teams, reducing unnecessary duplication and ensuring clinical expertise is reserved for patients with the greatest need.

By aligning workforce, digital tools and other resources with well-defined population needs, health systems can better manage demand, reduce pressures on hospitals and deliver care closer to home.



Evidence in Practice:

Kumar Medical Centre used PNGs to evaluate their services and prioritise Quality and Outcome Framework (QOF) reviews based on complexity of patients' health needs rather than their date of birth. This enabled high-risk patients to be seen earlier in the year and ensured that the right health care professional was assigned at the right time. This led to 87% of QOF reviews being completed before the winter period, compared to 33% in previous years, freeing up 14% clinician capacity per 1,000 patients and resulting in improved clinical outcomes — including 7.9% improvement of HbA1C control compared to the overall ICS.

Thatcham Medical Practice used the ACG System's PNG segmentation model within the TVS Care Record (Thames Valley Surrey) — together with the patient's self-reported presenting symptoms — to enhance patient triage, prioritise care and optimise workforce efficiency. This has led to an increase in complex-needs patients being seen sooner and more proactively, enhancing the patient experience and reducing hospital admissions.

> ***By embedding the ACG System segmentation tool into our systems, we are further supporting our clinicians with a greater understanding of the patient in front of them and improving the overall outcomes and experiences for our patients.***
>
> *Dr Priya Kumar, a Primary Care lead on the Kumar Medical Centre project*

The Model: What Hospital-to-Community Care Actually Means



Shift Care Upstream
Move from crisis response to prevention, early intervention and proactive support in the community.



Plan Around Population Need
Use shared data across primary, secondary, community and social care to understand risk and unmet need.



Deliver Care Closer to Home
Replace reactive, episode-based care with coordinated neighbourhood-based support.



Improve Equity Through Insight
Identify who is most at risk and target support proportionately to reduce unwanted variation.



Design Services Around People, Not Activity
Segment populations early, commission around need and keep patients at the centre of care planning.

Hospital-to-community care is a deliberate shift upstream: identifying and addressing need earlier, within neighbourhood and community services, before it escalates into avoidable hospital demand. It reframes care around prevention, early intervention and proactive support for people with complex needs, rather than responding only once individuals reach a crisis point.

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At its core, this model depends on a shared, system-wide understanding of population need. By bringing together data from primary, secondary, community and social care, systems can move away from reactive, episode-based care and towards planned, coordinated support delivered as close to home as possible.

Done well, this shift is inseparable from improving equity. By understanding who is most at risk, where unmet need lies, and which barriers shape access, systems can target support proportionately and reduce unwarranted variation. This is population health management in practice.

ACG System customers are already using integrated primary and secondary care data to segment their populations, identify risk early and design proactive pathways. The result is planned care delivered closer to home, with neighbourhood teams commissioned around needs rather than activity — and patients genuinely at the centre of planning and delivery.

How the Model Works in Practice: Evidence from Real Systems

Frimley Health and Care Integrated Care System

Frimley's remote monitoring programme, built on population health tools and risk stratification, enrolled thousands of patients identified in the highest PNGs. Early results showed substantial reductions in service use compared with similar patients not yet on the programme — including **ED attendances down by almost 40%, hospital admissions by more than 50%, and fewer outpatient appointments** — demonstrating how proactive care at home can relieve pressure on urgent and emergency services and help keep patients well in the community.

Cheshire and Merseyside

In Cheshire and Merseyside, Graphnet developed a fuel poverty dashboard within the Combined Intelligence for Population Health Action (CIPHA) platform that draws on integrated population data across the region and incorporates ACG System risk markers. This tool helped **identify more than 1,300 individuals living in deprivation and at high risk of emergency admission** due to social and clinical needs, including cold homes and respiratory illness, enabling multi-agency and community teams to deliver targeted support — from referrals to well-being services to home energy assistance — as part of a broader strategy to reduce health inequality and avoidable hospital use.

East Kent Health and Care Partnership

In East Kent, an innovative care trial led by the East Kent Health and Care Partnership used population health analytics, integrated data and remote monitoring technology to identify people who most frequently used urgent and emergency NHS services. The trial focused on people who were frail and living with complex health needs, combining advanced risk stratification with proactive remote monitoring to help participants manage their health at home. After taking part in the programme, the cohort experienced striking reductions in use of urgent services: **emergency department visits dropped by 69%, walk-in centre visits fell by approximately 68%, and emergency hospital admissions declined by about 70%.** Patients also reported reduced anxiety, greater confidence in managing their health and feeling better supported to stay well in the community.

In all cases, a key component to success was training and empowering teams to understand the PNG population segmentation framework as a common clinical currency. These local successes demonstrate how population health tools can really drive system-wide change, shifting from reactive care to community-based prevention.

Why This Shift Matters Now

Health systems in the UK are feeling the strain of budgetary pressures, and services are being stretched with less capacity to address key priorities — including rising patient demand, an ageing population, growing multi-morbidity and increasing social need. All the while, hospitals and frontline teams are facing immense pressure, with workforce shortages making it harder to deliver the responsive and coordinated care that patients expect. This makes the need to shift care closer to home through more cost-effective solutions that prioritise patients' needs an absolute priority.



The 2025 NHS 10-year plan recognised that a hospital-centric model can no longer keep pace with the complexity and volume of need or deliver the seamless, preventive support that patients require. The move toward a neighbourhood health service which incorporates continuous, accessible and joined-up care delivered as locally as possible is designed to change all that. It places prevention, early intervention and personalised support at the heart of the system, with hospitals focused on specialist care for those who truly need it.

This shift is backed by a commitment to increase resources for primary and community services and a willingness to expand neighbourhood-level teams. It also stems from the realities patients and professionals experience every day — including variable access to primary care, long waits for community services and avoidable emergency attendances. Addressing these pressures requires a more proactive, population-based model that anticipates demand rather than reacts to crises.

At its core, moving care closer to home is about designing a system that works for people. It means improving access to same-day urgent care in general practice, expanding the range of community and pharmacy-led services, ensuring community health teams can deliver care faster, and creating neighbourhood teams that focus on prevention, continuity and stability. When done well, this approach strengthens local care, reduces avoidable hospital use and ensures that resources are used efficiently across the whole system.

How It Works: The Data and Population Health Engine

The ACG System pulls together structured clinical and demographic data from primary and secondary care settings to segment patients using our PNG tool. These insights make it easier to identify actionable health risks and ensure care isn't fragmented. Additional analytics can be overlaid to understand the behavioural, social and/or clinical factors that may be driving risk. These insights can then inform new interventions, service or staffing reconfiguration, and improved care coordination among teams — focusing on what patients genuinely need and leading to a more preventive approach.

Central to a left-shift in care is a robust population health 'engine' embedded within the wider Population Health Management capability. Integrating the ACG System into Graphnet's Combined Intelligence for Population Health Analytics (CIPHA) platform allows clinical, demographic and social data to be combined into a single, shared view of need across a neighbourhood or place. Drawing on structured primary and secondary care data, the system stratifies and segments the population and highlights cohorts with rising risk, unmet need and barriers to accessing care that may not be visible through routine service activity alone. This supports earlier intervention at scale and more equitable, anticipatory care delivery.

Read more about risk stratification here.

Implementing a Population Health Solution

Implementing a population health solution does not need to be difficult or burdensome. A structured, practical approach helps support smooth implementation and enables organizations to realize the full value of their solution.

Information Governance: Create the Right Conditions for Success

- Ensure local data sharing agreements are in place for primary and secondary use of data
- Confirm that these agreements cover the scope of primary and secondary care data for the entire local population (i.e. registered population)
- Establish secure infrastructure to host, store and process data

Establish Initial Set-up and Routine Processes

- Ensure that processing includes extraction from source systems and transformation into agreed target datasets
- Establish automated processing capabilities or engage a qualified service provider to support routine processing, quality assurance, dissemination and publication of outputs

Identify a Community of Cross-functional Users and Secure Key Stakeholder and Leadership Buy-in

- Ensure data scientists, business analysts and clinicians operate as part of a team with opportunities to provide input, and receive training on interpreting analytic insights
- Support continuous, actionable use of data by analytical teams and data scientists
- Implement ongoing monitoring and evaluation, including visualization and interpretation of data

Take Action to Establish and Advance a Population Health Strategy

- Segment the population based on health need
- Identify actionable opportunities
- Analyse medication use and opportunities for intervention
- Predict future risk of events and high-cost individuals and populations
- Assess the population's social determinants of health needs



Organisations working with the ACG System will receive support and guidance throughout the implementation process.

Conclusion

Shifting care from reactive to proactive and from hospital to community is essential for delivering sustainable, equitable and person-centred health care.

As this guide shows, intelligent population segmentation using tools such as the ACG System enables health systems to understand patient need at a granular level, target resources more effectively, reduce avoidable hospital use, improve access and equity, and support a proactive, preventive model of care.

This approach turns ambition into practical, measurable change and helps teams plan care earlier and closer to home.



About the ACG System

The Johns Hopkins ACG System is the world's leading population health analytics software. The System continues to evolve, providing ever-more refined tools used in the U.S. and across the globe for over 30 years, from commercial health plans and governments to health systems and large employers. The beauty of the ACG System is its ability to combine data from an array of sources to reveal powerful insights that go beyond just medical records. By identifying risk and tracking patients over time, the ACG System can help you plan ahead and reduce health care costs – especially valuable to risk-bearing health systems and provider organizations. Most importantly, the ACG System allows you to be proactive, rather than reactive, when it comes to your population's unique health care needs. The System helps you combine a population-level perspective with patient-level behaviours and conditions. And because the System is incredibly flexible and responsive to new information, you can rest assured that no matter what comes next, the ACG System will continuously adapt to your health care management needs.

This piece is published in collaboration with Graphnet, a leading UK provider of population health, shared care record and remote monitoring solutions. Working with Integrated Care Systems, Trusts and primary care, Graphnet enables joined-up data, actionable insight and collaboration across organisational boundaries. By embedding advanced analytics such as the Johns Hopkins ACG System into operational platforms, Graphnet supports health systems to move from insight to impact at scale.

To learn more about the ACG System, please reach out to your Account Manager or contact us at acginfo@jh.edu.