

Reducing potentially avoidable hospitalisations: the case for optimised treatment

Key policy recommendations from novel modelling on the value of increased guideline-directed medical therapy uptake on five major chronic conditions

November 2026

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This non-promotional policy report has been developed and funded by AstraZeneca with input from global experts at four multi-stakeholder policy meetings. The document is intended to provide expert recommendations and accelerate holistic health system reforms to optimise the use of guideline-directed medical therapy to reduce potentially avoidable hospitalisations.

Global PAH

About this report

This policy report draws on the Global Potentially Avoidable Hospitalisations (Global PAH) Study, complemented by a rapid literature review. The report was drafted by Chris Melson and Jody Tate of The Health Policy Partnership. A multidisciplinary expert Steering Committee informed its development.

About the Global PAH Study

Potentially avoidable hospitalisations are an established Organisation for Economic Co-operation and Development (OECD) indicator of health system performance.[1*] The Global PAH Study applies this metric to model the future burden of potentially avoidable hospitalisations across five chronic conditions covered by the OECD indicator – asthma, chronic obstructive pulmonary disease, type 2 diabetes,[†] hypertension[‡] and heart failure – and to quantify what optimising guideline-directed medical therapy (GDMT) would deliver for health systems and societies.[1]

The model simulates country-level populations in a range of high-income countries and accounts for ageing populations, evolving risk factors and birth rates in intervals of 2, 4, 10 and 25 years (2026 base year). For each condition, a complete GDMT uptake (100%) scenario is modelled. Adherence is captured in the uptake estimates rather than modelled as a separate parameter. Current uptake is drawn from real-world implementation data, and complete uptake assumes that eligible people not currently receiving GDMT start treatment and remain on it throughout the simulation.

Comparing current GDMT implementation against complete uptake estimates how improved treatment could reduce disease progression, potentially avoidable hospitalisations and wider health system pressures.[§] The approach is similar to established microsimulation methods used to project health and economic outcomes.[2]

The model was designed and run by HealthLumen and draws on international and national data sets. Its structure and assumptions were reviewed by an expert Steering Committee. Full findings, methods and validation have been published separately at The Professional Society for Health Economics and Outcomes Research (ISPOR) Europe in November 2026.

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* Avoidable Hospital Admissions is a subgroup of indicators in the Healthcare Quality and Outcomes (HCQO) database and provides data on hospital admissions for chronic conditions that could be avoided through better management in primary care. This indicator aims to measure the extent to which primary care systems have effectively avoided acute deterioration resulting in hospital admission in people living with the selected chronic conditions.

† The OECD indicator definition includes diabetes (both type 1 and type 2). The Global PAH Study focuses on type 2 diabetes only. Type 1 diabetes was excluded from the baseline as well as the modelled scenario.

‡ Hypertension is included in the previous 2022–23 OECD indicator definition, but not in the 2024–25 definition. It has been included to preserve comparability with earlier avoidable hospitalisation analyses and because hypertension remains a leading modifiable driver of downstream cardiovascular and metabolic admissions in the countries modelled.

§ Complete GDMT uptake was selected as a scenario to highlight the theoretical gap that could be addressed, even though 100% GDMT uptake is likely not achievable in real-world settings.

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[‖] Sung Hee Choe had observer status during Steering Committee meetings.

Foreword

Every day, millions of people living with chronic conditions are admitted to hospital in crisis. Many of these admissions could have been avoided, reflecting missed opportunities along the care pathway: a diagnosis made too late or a treatment never provided. As our populations age and the number of people living with one or more chronic conditions rises, avoidable emergency admissions are increasing. For the person affected, this can mean poorer health outcomes, lower quality of life and reduced ability to work. And it can be life-altering for carers too.

The consequences are far-reaching. As potentially avoidable hospitalisations rise, health systems already stretched by workforce shortages are asked to absorb more demand than they were designed for, and the economic and human cost reaches well beyond healthcare, with people unable to work requiring additional support.

People living with chronic conditions should expect timely access to the care and treatment they need to manage their health. For many such conditions, guideline-directed medical therapy can slow disease progression and prevent hospital admissions.

Yet uptake often remains far below what clinical guidelines recommend, and that gap represents the point where avoidable deterioration occurs. It reflects systems that do not identify risks until it is too late, reward activity rather than outcomes, limit access through workforce capacity, cost or geographical constraints and treat health spending primarily as a short-term cost rather than a longer-term investment.

Reducing avoidable hospital admissions is therefore not only a matter of individual outcomes. It would release capacity, ease workforce pressures and strengthen the resilience of systems facing seasonal surges and shocks. New modelling presented in this report provides evidence of what closing this gap could achieve. The report sets out four levers and a prioritised set of recommendations. It is intended to help policymakers, payers and health system leaders judge which actions are most needed and will have the greatest impact.

The Steering Committee

Executive summary

A rise in the number of people living with chronic conditions is placing significant and growing pressures on people, health systems and society. An ageing population is expected to increase the number of people with chronic conditions in Organisation for Economic Co-operation and Development (OECD) countries by 31% by 2050.[2] Chronic conditions are also expected to reduce GDP by nearly 4% and take the equivalent of 18 million full-time workers out of the labour force between 2026 and 2050.[2] Without timely, appropriate care, these conditions can progress and symptoms worsen, risking death, reducing quality of life and limiting people's ability to work.[3-5] Crucially, worsening chronic conditions put people at much higher risk of costly hospitalisations, many of which are avoidable.

The treatments that would help keep many people out of hospital already exist and are recommended in clinical guidelines, but the reality is that too few people receive them. Guideline-directed medical therapy (GDMT) can slow progression and prevent hospital admissions across the five conditions covered by the Global Potentially Avoidable Hospitalisations (Global PAH) Study: heart failure, chronic obstructive pulmonary disease, asthma, type 2 diabetes and hypertension. But among six high-income countries included in the study – France, Italy, the Netherlands, Spain, Japan and the US – GDMT uptake is suboptimal. Uptake ranges from 21.0% for heart failure to 37.4% for hypertension, so only around one in five people with heart failure receives GDMT. If current levels of GDMT uptake continue, annual primary-cause hospitalisations are projected to increase from 4.00 million in 2026 to 4.67 million in 2035. Complete GDMT uptake, however, would prevent 14 million admissions – a 32.3% drop versus current practice – by 2035.

Four barriers explain the gap between guidelines and practice. Health systems identify risk late, missing opportunities to prevent chronic conditions from deteriorating. Healthcare professionals are often not incentivised to ensure their patients are starting on and continuing to take the treatments that guidelines recommend. Access to GDMT is limited by workforce capacity, cost and geographical challenges. And budgets fail to recognise chronic disease care as a long-term investment, leaving prevention undervalued.

This report sets out a practical roadmap for change through prioritised policy recommendations organised around four levers. By putting these recommendations in place, countries can reduce potentially avoidable hospitalisations, relieve pressure on the health workforce and improve outcomes for people living with chronic conditions.

Barrier 1. Late identification and inadequate management leave high-risk patients exposed to avoidable deterioration

Lever 1. Enable coordinated care pathways to support early identification and optimise treatment

- Initiate and optimise guideline-recommended therapy promptly.
- Review medicines systematically.
- Standardise discharge protocols.
- Introduce systematic case-finding for people already diagnosed with a chronic condition.
- Ensure that people with chronic conditions receive coordinated multidisciplinary care.

Barrier 2. Fee-for-service and volume-based payments weaken incentives for prevention and GDMT uptake

Lever 2. Drive optimal GDMT uptake through incentives

- Embed GDMT-specific prescribing metrics in quality payment frameworks.
- Introduce patient-facing incentives in disease management plans.

Barrier 3. Access to GDMT is limited by capacity, cost and geography

Lever 3. Improve equitable access to GDMT through system reform

- Expand the role of pharmacists and nurses in initiating and monitoring therapy.
- Use routinely collected data to identify high-risk populations.
- Ensure equitable access to patient-led education, and digital and AI-enabled tools.
- Reform formulary frameworks.

Barrier 4. Health investment is undervalued by budget structures and planning approaches

Lever 4. Align budgets with long-term health and societal benefits

- Extend the timeline of budget impact analyses to ten years or more.
- Quantify GDMT uptake and patient-reported outcomes through national registries.
- Integrate health budgets with pooled funding across care settings.
- Adopt multi-year budgeting frameworks.

Reducing hospitalisations enables more sustainable health systems

The number of people living with chronic conditions is increasing, placing growing and unsustainable pressure on health system capacity and public finances. As populations age, the number of people living with chronic conditions – such as heart failure (HF), chronic obstructive pulmonary disease (COPD), hypertension, asthma and type 2 diabetes – is steadily increasing. In Organisation for Economic Co-operation and Development (OECD) countries, it is estimated that population ageing will drive a 31% rise in the number of people with chronic conditions between 2026 and 2050.[2] Living with several chronic conditions at once is increasingly common. In high-income countries, more than six in ten older people have at least two.[6] This is strongly associated with worsening symptoms and clinical outcomes, and increased healthcare use.

When health systems act too late, the human cost is substantial. Without timely, appropriate care, chronic conditions can progress and symptoms worsen, taking a toll on people's mental health, physical activity and overall wellbeing.[3,4] As chronic conditions advance, people are more likely to end up in hospital – and, in the worst cases, to die earlier than they should.[3,5] For people living with more than one condition, the burden compounds: many people face complex, time-intensive self-management that erodes their quality of life day by day.[7,8] And the strain reaches beyond the individual, falling heavily on carers, who shoulder significant emotional, physical and financial pressures of their own.[9,10]

A large proportion of hospitalisations among people with chronic conditions could be avoided through optimised care. Findings from the Global PAH Study – an analysis of five chronic conditions in France, Italy, the Netherlands, Spain, Japan and the US – show that without action, annual primary-cause hospitalisations are projected to increase from 4.00 million in 2026 to 4.67 million in 2035. (see About this report for a detailed explanation of the data collection and modelling approach).

Potentially avoidable hospitalisations both stem from and contribute to health system inefficiencies, creating a cycle of constrained capacity and declining quality of care. Higher rates of potentially avoidable hospitalisations reflect gaps in primary care investment and represent wasteful hospital spending, highlighting the inefficiency of reactive care models.[11] As ageing populations drive higher hospital use, potentially avoidable admissions are set to rise further.[12,13] The result is high bed occupancy across health systems, which risks reducing the quality and safety of care through longer waiting times and increased staff burnout.[14-16]

The economic consequences of delayed action extend beyond the health system, affecting labour supply, productivity and long-term economic growth. Untreated chronic conditions reduce the ability of both people living with these conditions and those who care for them to stay in work, increasing absenteeism, presenteeism and early retirement.[17,18] The OECD projects that

chronic conditions will reduce GDP by nearly 4% and reduce workforce output by the equivalent of 18 million full-time workers between 2026 and 2050.[2] In the World Health Organization (WHO) European Region alone, avoidable deaths from chronic conditions generate productivity losses of USD $514.5 billion annually.[19] Prolonged hospitalisations further reduce income and labour force participation while increasing dependency on carers.[4] Findings from the Global PAH Study show that, without action, hospitalisation for the five conditions will lead to over $84 billion in productivity losses across the six countries modelled over the next decade.

Reducing potentially avoidable hospitalisations represents a crucial opportunity to improve health outcomes, release capacity and strengthen system sustainability. It could ease pressure on hospital bed occupancy, which in turn is associated with improved hospital quality.[14] Higher volumes of emergency admissions, on the other hand, lengthen waiting times for surgery,[20] suggesting that curbing avoidable hospitalisations could help health systems free up capacity. Without decisive action, systems will remain oriented towards reactive care, with rising costs and constrained performance.

Optimising care reduces potentially avoidable hospitalisations

Providing timely, appropriate care at every stage is essential to reducing hospitalisations among people living with chronic conditions. Preventive interventions – including reducing exposure to risk factors or strengthening primary care – play a crucial role in tackling chronic conditions and are recommended by the WHO and the OECD.[21-23 i] Among these, guideline-directed medical therapy (GDMT) offers one of the most immediate and actionable opportunities to prevent avoidable deterioration. In this report, GDMT refers to pharmacological treatment (see below).[ii] It translates robust clinical evidence into a clear standard of care that can slow chronic disease progression, reduce complications and keep people out of hospital. Yet its impact depends on eligible people receiving the right treatment at the right time – and the support needed to remain on it.

What is guideline-directed medical therapy (GDMT)?

GDMT refers to the standardised pharmacological treatment for a given condition, based on recommendations from professional clinical guidelines and evidence from large-scale randomised clinical trials.[24 25] While the term GDMT is most recognisable in HF, this report uses it in its broader sense, applying it to the conditions within the scope of the Global PAH Study.[iii]

Optimised GDMT can improve health outcomes and reduce potentially avoidable hospitalisations. When initiated promptly and used as recommended, GDMT can slow disease progression, reduce complications and help people stay out of hospital.[12 19 26-28] Yet findings from the Global PAH Study show that many eligible people are not receiving GDMT (*Figure 1*). Complete uptake of GDMT could avoid 14 million hospitalisations, a 32.3% reduction versus current practice (*Figure 2*). Some of the largest gains could be achieved in the three leading contributors to hospitalisations: heart failure, COPD and type 2 diabetes (*Figure 3*). Significant hospital costs could also be avoided and productivity gained (*Figure 4* and *Figure 5*). Health system benefits remain meaningful when a more realistic GDMT uptake level is reached (*Table 1*).

i This report does not attempt to capture the full range of these prevention interventions; it focuses on GDMT given its direct and well-evidenced role in preventing potentially avoidable hospitalisations.

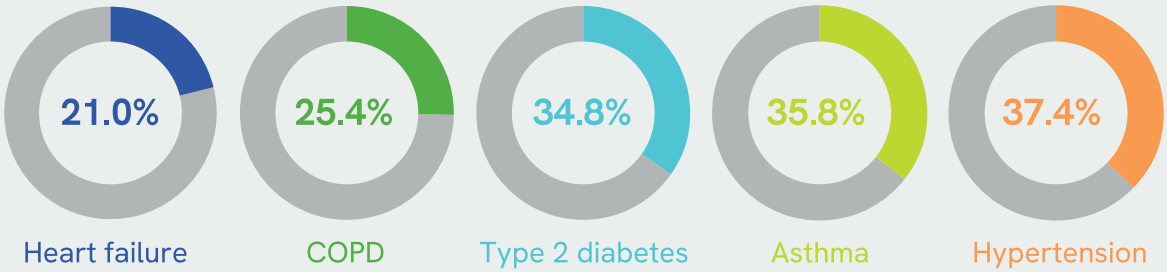
ii Non-pharmacological interventions, such as rehabilitation, and other preventive interventions, such as vaccination, are also recommended by guidelines to support chronic disease management, but are not included in the scope of the Global PAH Study and therefore excluded from this report.

iii For hypertension, GDMT is defined by control status.

Figure 1

Current uptake of GDMT by condition

*2026 weighted average**



* GDMT uptake is estimated based on rates of GDMT prescription by disease. For hypertension, GDMT is defined by control status.

Figure 2

Hospitalisations potentially avoided under complete uptake of GDMT by 2035

Cumulative totals, with equivalent percentage of projected hospitalisations under current practice

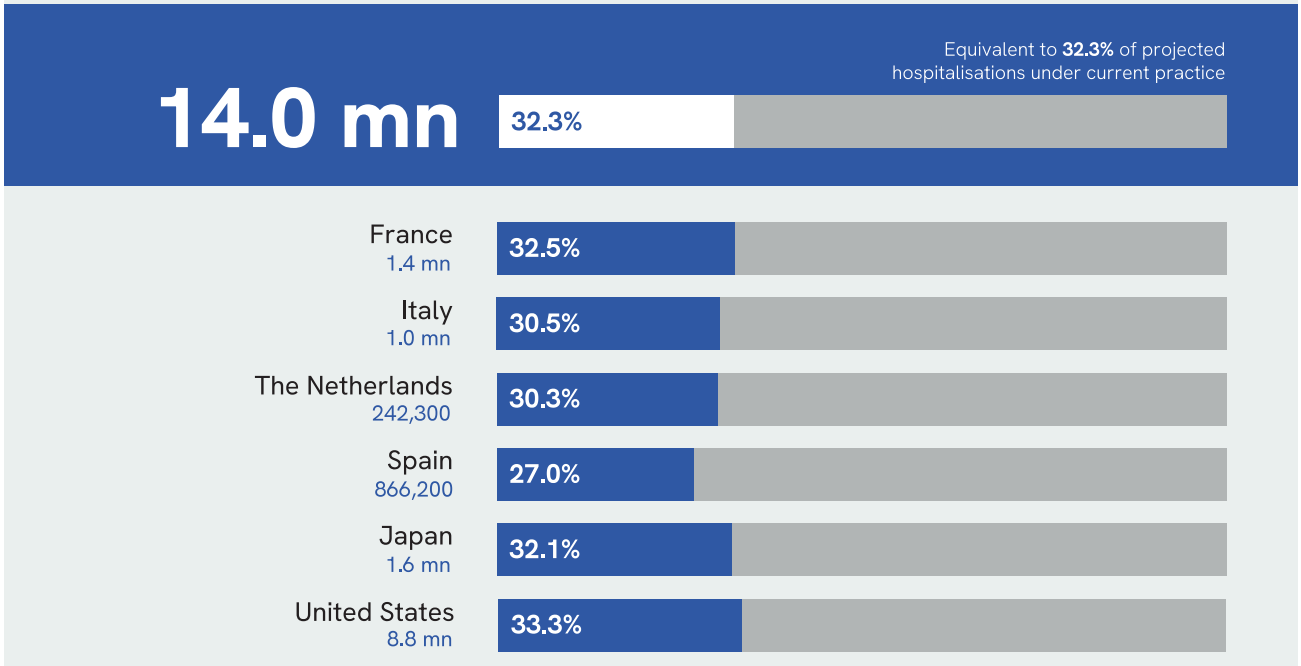
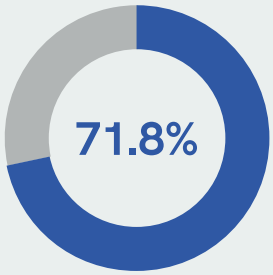


Figure 3

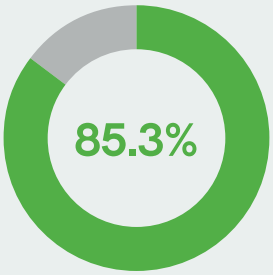
Combined share of primary-cause hospitalisations held by the two leading conditions

With cumulative projected hospitalisations for each condition by 2035



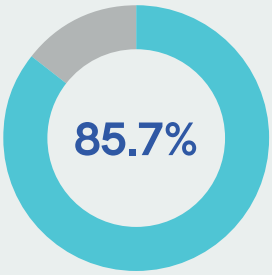
France

Leading: Heart failure 2.0 mn
Second: COPD 1.0 mn



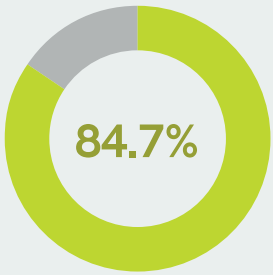
Italy

Leading: Heart failure 1.9 mn
Second: COPD 910,000



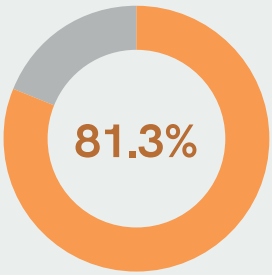
The Netherlands

Leading: Heart failure 390,000
Second: COPD 290,000



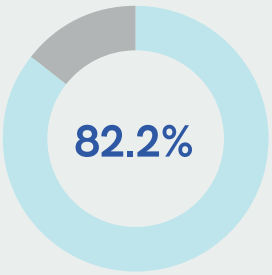
Spain

Leading: Heart failure 1.6 mn
Second: COPD 1.2 mn



Japan

Leading: Heart failure 3.1 mn
Second: Type 2 diabetes 1.0 mn

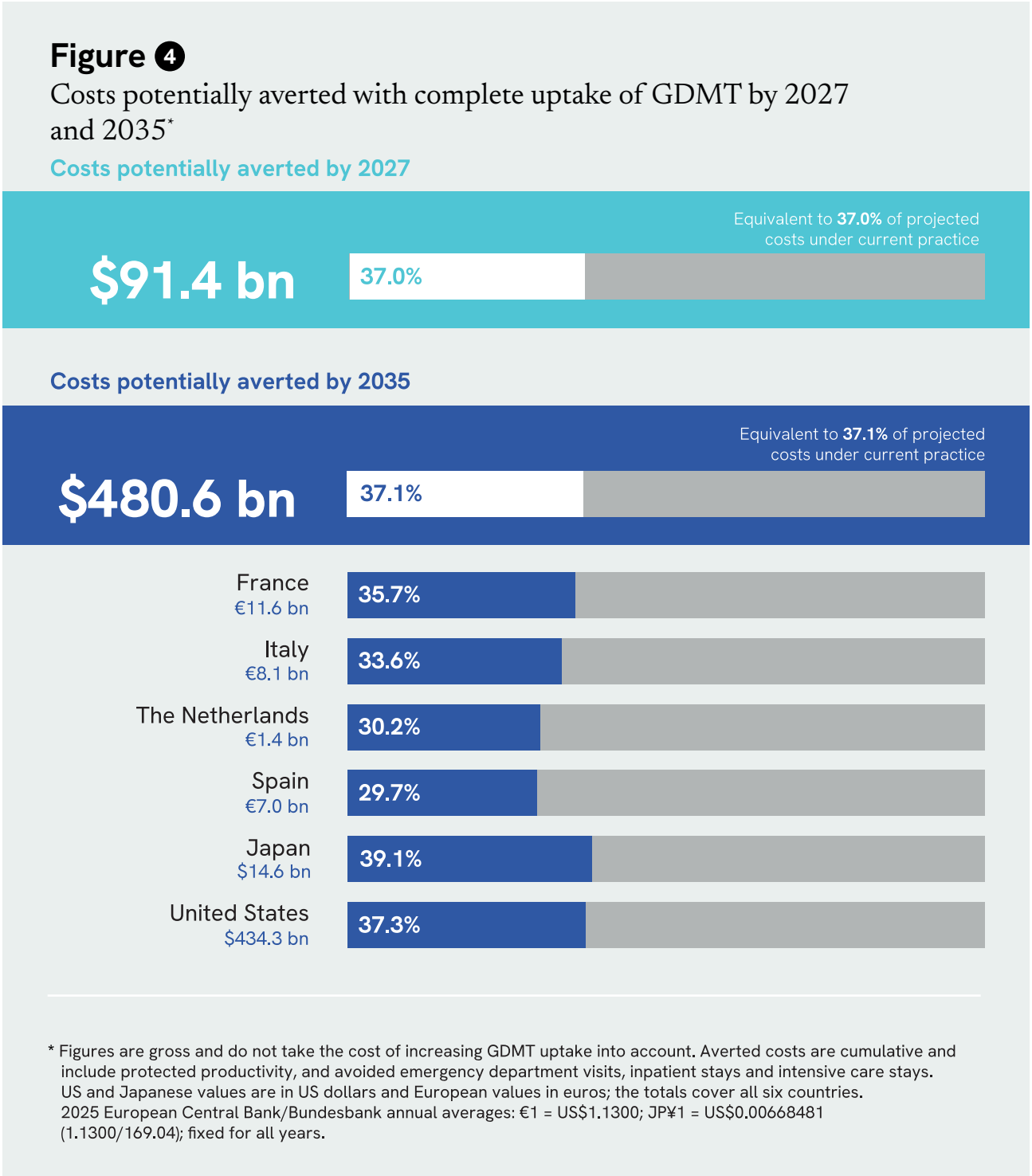


United States

Leading: Heart failure 13.8 mn
Second: Type 2 diabetes 8.1 mn

Figure 4

Costs potentially averted with complete uptake of GDMT by 2027 and 2035*



* Figures are gross and do not take the cost of increasing GDMT uptake into account. Averted costs are cumulative and include protected productivity, and avoided emergency department visits, inpatient stays and intensive care stays. US and Japanese values are in US dollars and European values in euros; the totals cover all six countries. 2025 European Central Bank/Bundesbank annual averages: €1 = US$1.1300; JP¥1 = US$0.00668481 (1.1300/169.04); fixed for all years.

Figure 5

Financial savings from protected productivity under complete uptake of GDMT by 2035

Cumulative totals by country

$36.2 bn productivity protected

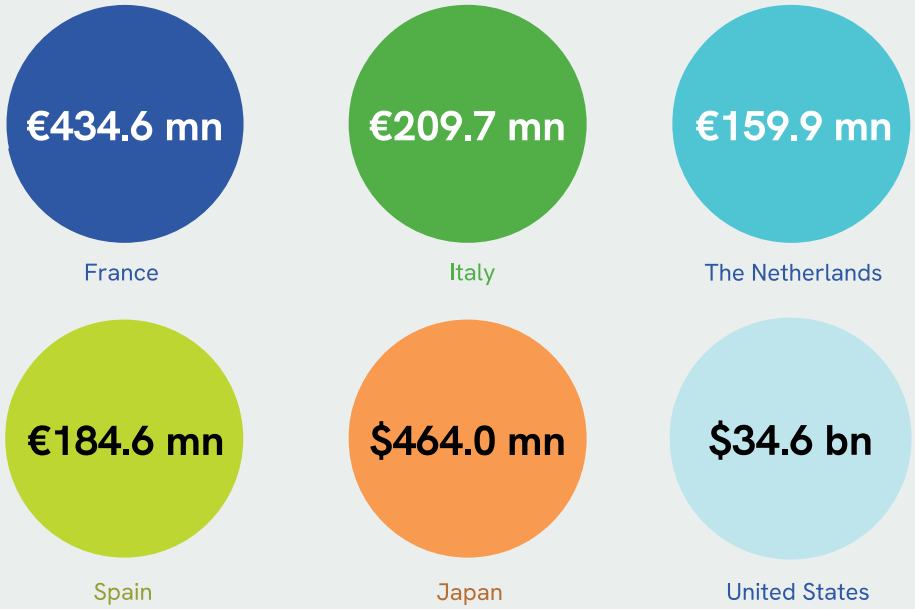


Table 1

Key outcomes and costs potentially avoided under different GDMT-uptake scenarios by 2027 and 2035*

Outcome avoided	Year	100% GDMT	80% GDMT	+10 percentage points on current GDMT
Hospitalisations	2027	2.6 mn	1.9 mn	345,900
	2035	14.0 mn	10.2 mn	1.8 mn
Emergency department visits	2027	28.0 mn	19.6 mn	3.0 mn
	2035	151.2 mn	106.5 mn	16.1 mn
Intensive care stays	2027	338,400	249,800	43,600
	2035	1.8 mn	1.3 mn	229,800
Total costs	2027	$91.4 bn	$66.4 bn	$9.9 bn
	2035	$480.6 bn	$349.5 bn	$51.3 bn

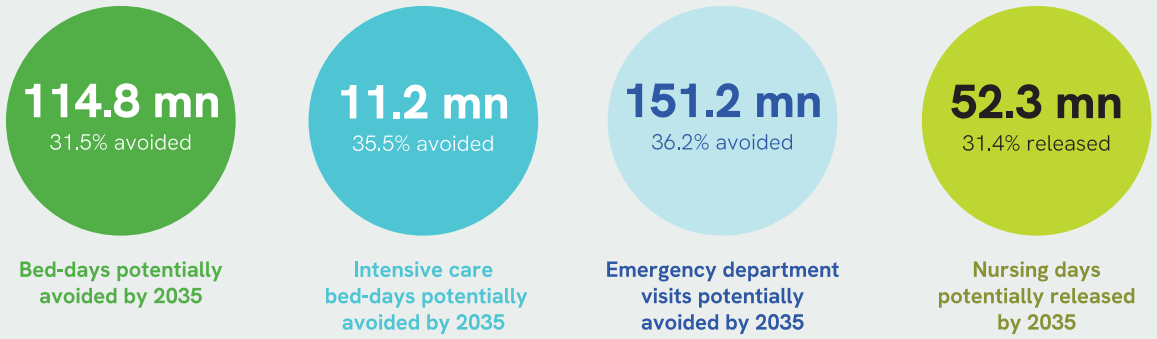
* All costs in US dollars; €1 = US$1.1300; JP¥1 = $0.00668481 (1.1300/169.04). 2025 European Central Bank/Bundesbank annual averages, fixed for all years. All scenarios include the same six countries.

Optimising GDMT could make health systems more efficient by keeping people out of hospital. By 2035, reducing potentially avoidable hospitalisations through complete uptake of GDMT could free up 114.8 million inpatient bed-days and 11.2 million intensive care bed-days, save 52.3 million nursing days and prevent 151.2 million emergency department visits in countries in the Global PAH Study. This capacity could be redirected to other life-saving care (*Figure 6*). In countries like the Netherlands, where there are challenges around intensive care bed capacity, this relief could prove especially valuable.[29 30]

Figure 6

Hospital capacity released under complete GDMT uptake

Cumulative totals, with equivalent percentages of projected capacity needs by 2035 under current practice



Improving uptake of GDMT requires addressing the structural barriers that prevent health systems from translating guidelines into routine care. The gap between what guidelines recommend and what people receive does not reflect a shortfall in evidence. Health systems do not currently deliver treatment optimisation consistently – the obstacles lie in how care is organised, funded, staffed and planned. The four barriers set out below are followed by a series of levers to overcome them, together with actionable policy recommendations to support each lever.

The barriers to reducing potentially avoidable hospitalisations

Barrier 1. Late identification and inadequate management leave high-risk patients exposed to avoidable deterioration

Fragmented and siloed health data systems limit healthcare professionals' ability to identify and proactively manage high-risk patients with GDMT across care settings. Electronic health record use is increasing, but fragmentation and poor interoperability persist.[31] In Italy, for example, the absence of a unified, centralised system for sharing electronic health records among hospitals, regions and primary care providers results in repeated diagnostic tests, delayed care and an estimated €3.3 billion in avoidable healthcare costs each year.[32] Similarly, in England, fragmented prescribing information at key points of transition – such as hospital admission and discharge – has been estimated to cause 1.8 million medication errors annually, contributing to over 36,700 additional bed-days and an estimated 45 deaths each year.[33]

Uncertainty and knowledge gaps among healthcare professionals are a common barrier to GDMT optimisation. Clinical inertia – defined as 'a failure of healthcare providers to initiate or intensify therapy when guidelines indicate doing so' – is a major obstacle to optimal GDMT use.[34] Because chronic disease management is evolving rapidly, gaps in healthcare professionals' familiarity with current guidelines may compound the problem.[35] Healthcare professionals may also hesitate to intensify treatment for patients they perceive as stable, underestimating the risk of progression while overestimating the likelihood of side effects – allowing conditions to progress, leading to complications and hospitalisations.[36]

When people are not involved in decisions about their own treatment, adherence to GDMT suffers, and so do their outcomes. Limited health literacy is consistently linked to higher hospitalisation and mortality, largely because of its effect on medication adherence.[37-41 iv] Patient education materials are often developed from a clinical perspective without meaningful patient input, making them too complex and text-heavy to support understanding.[42] As a result, therapies may not deliver their full benefit in practice. The effect is greatest for people with more than one chronic condition, who manage multiple overlapping regimens – a combination associated with adverse events and lower adherence.[43]

People diagnosed with one chronic condition are often not systematically assessed for other conditions, so important opportunities for earlier intervention and integrated management are missed. Despite the high and growing number of people living with more than one chronic

iv Low health literacy is associated with a 19% higher risk of hospitalisation in HF.

condition,[44 45] screening for these conditions is rarely included in clinical guidelines.[46] A European study found that one in five people with HF had type 2 diabetes that had not been identified.[47] Other studies have shown that around one in four people with diabetes has undetected HF.[48 49] Many additional chronic conditions therefore go unrecognised, leaving people without treatment that could prevent deterioration and hospital admission.

Poor coordination between primary and specialist care creates delivery challenges, especially for people managing more than one condition. Coordination gaps between primary care and specialist teams are linked to delayed diagnoses, reduced continuity of care and increased risk of hospitalisation for people moving between health settings.[50-52] The problem is particularly acute for people living with multiple chronic conditions who move between primary care and separate specialist settings, each focused on a single condition.[53] Aligning treatment plans and maintaining GDMT for interconnected conditions becomes harder as a result.[53] This siloed approach obstructs the initiation and optimisation of GDMT across major chronic conditions.[54]

Weak post-discharge follow-up is a major driver of avoidable rehospitalisations. The weeks after discharge carry a high risk of death and rehospitalisation, often because post-discharge pathways are poorly defined and patients are discharged before adequate GDMT has been initiated.[55 56] In asthma, international guidance recommends a review within two to seven days of emergency department discharge, yet data from Alberta, Canada, show that only 6% of patients are followed up within a week, and over a third of people are readmitted within 90 days.[57 58] Follow-up frequently fails in HF too,[v] and failure to prescribe GDMT at discharge increases the chance that a patient will not receive that therapy in the following year.[55] For people with more than one chronic condition, the problem is compounded.[59]

Barrier 2. Fee-for-service and volume-based payments weaken incentives for prevention and GDMT uptake

Mismatched incentives create structural gaps in the delivery of prevention-focused chronic disease care. In the US, the health system rewards activity in response to acute events but offers little incentive to prevent hospitalisations.[60] In Sweden, hospitals are paid per visit, so preventing hospitalisations would result in reduced revenue, suggesting that there are financial disincentives to prevent hospitalisations.[61] Where payment rewards activity over outcomes, it discourages the sustained work of initiating and optimising GDMT, contributing to lower uptake and more potentially avoidable hospitalisations.

Payment systems rarely reward the time-intensive work of optimising GDMT. Optimisation requires assessment, treatment adjustment and repeated follow-up over weeks or months – work that outpatient clinics often lack the capacity to provide.[35 62-64] Few payment models recognise that

v Fewer than half of patients discharged after heart failure hospitalisation are seen by a general practitioner within 15 days, and only around one in three see a cardiologist within two months, with combined follow-up achieved in just one in five.

work explicitly. Under fee-for-service models, used for primary and outpatient care in countries such as Austria, Canada, France, Japan and the US, payment is largely tied to the volume of consultations and procedures performed.[60 64] This means an extended review to optimise treatment is remunerated no differently from a brief routine visit, and the healthcare professional who invests the additional time may see fewer patients in a day. Where healthcare professionals in primary care are largely salaried – as in Spain's national health system, for example[65] – the additional time carries no financial penalty, but it also earns nothing. Therefore, in most countries a healthcare professional who invests substantially more time in bringing a patient onto an optimal regimen may be paid no differently from one who does not – leaving the key intervention for preventing downstream hospitalisation unrewarded.

Payment models based on outcomes offer an alternative but have failed to improve outcomes when they have not been implemented appropriately. Outcomes are difficult to measure and attribute in real-world settings – particularly in primary care, where the benefits of GDMT may take years to emerge.[66] Limited data infrastructure, an absence of standardised metrics and governance complexity further restrict the routine use of outcomes to drive quality improvement and accountability.[67-70] As a result, outcome-based models remain largely small-scale and fragmented; OECD evidence shows modest and variable gains compared with entrenched fee-for-service systems.[64] For example, the UK Quality and Outcomes Framework (QOF), the largest primary care pay-for-performance programme in the world, was not associated with significant changes in population mortality.[71] One likely explanation is that its indicators only recorded whether a patient was receiving treatment – a threshold which can be met without a full regimen being in place or doses optimised.[72] This could leave some patients undertreated and at risk of their condition deteriorating.

Barrier 3. Access to GDMT is limited by capacity, cost and geography

Primary care workforce shortages limit the effective delivery of GDMT. Delivering optimal GDMT typically requires frequent clinical reviews, monitoring and dose adjustments – work that usually falls to primary care.[5] But primary care is under mounting strain; in Europe, general practitioner density is stagnating as the workforce ages, shifts to part-time working and absorbs a rising administrative burden.[73] No European country fully meets the WHO's benchmarks for strong primary care provision.[74] The US faces a shortage of more than 70,000 primary care physicians by 2038,[75] while in Canada 5.9 million people lack a regular primary care doctor or nurse.[76]

Socioeconomic deprivation increases the risk of hospitalisation and limits access to essential medicines. Lower income and higher deprivation are associated with an increased risk of hospitalisation for chronic conditions.[77] In Canada, people living in the most deprived neighbourhoods face an 83% higher risk of hospitalisation for conditions like HF, diabetes and

COPD compared with those in the least deprived group.[78] Affordability is another barrier: out-of-pocket payments can push the poorest households to delay or forgo treatment, with outpatient medicines the largest single driver of catastrophic health spending.[79-82] Variation in pricing and public coverage between countries, particularly for newer medicines, restricts access even further.[83] These pressures fall unevenly: women with cardiovascular disease are around 50% more likely than men to report cost-related medication non-adherence.[84]

For people who live far away from health services, receiving and remaining on GDMT is harder. A systematic review of high-income countries found that most studies linked distance from healthcare facilities to worse health outcomes.[85] Limited pharmacy access compounds the problem, as do medication shortages, which fall hardest on rural and remote areas.[86] Because GDMT depends on regular contact for review, titration and repeat prescriptions, distance and travel time can erode continuity of care.

Digital tools and telehealth remain underused in supporting GDMT access and optimisation. The evidence for these tools is compelling.[87] [88] [vi] [vii] Yet health systems have not built the infrastructure needed to deploy them at scale, leaving their use fragmented and small-scale rather than embedded as standard practice.[62] [89-91] Crucially, digital tools work best alongside community-based engagement and human support – not as a substitute for in-person care – so that access is maintained for all communities.[92] [93]

Barrier 4. Health investment is undervalued by budget structures and planning approaches

Budget silos between government ministries and health settings create a structural disconnect between where costs are incurred and where the benefits of investment fall. When one budget holder funds prevention-related services, such as public health or primary care, but the resulting financial savings accrue to a different budget, such as a hospital's, the incentive to invest upstream collapses, however cost-effective the investment is.[94] In effect, savings generated downstream cannot be reinvested in upstream prevention.[95]

Short-term budget cycles lock health systems into reactive spending while obscuring the long-term costs of underinvestment. Preventing potentially avoidable hospitalisations delivers returns over years or decades, yet budget impact analyses typically use time frames of just two to five years, leaving longer-term savings out of view.[96] This often makes upstream spending on primary care and GDMT optimisation difficult to justify against immediate acute care pressures.[97] Where budgets are tight, priorities tend to default to reactive care, perpetuating the very demand health

vi One randomised controlled trial found that remote monitoring achieved medication optimisation in 82% of people with HF at six months, compared with 54% in usual care, and did so on average two months faster.

vii A large French study linked remote monitoring to a 36% reduction in all-cause mortality compared with standard care.

systems are struggling to absorb.[98] The imbalance is stark: only 3% of European Union and OECD health spending goes to prevention.[99] [100]

Spending on chronic disease care continues to be treated as a cost line rather than an investment. Analysis by the WHO finds that an additional investment of just $3 per person to implement 29 'best buys' – low-cost, cost-effective interventions to prevent and control chronic conditions like heart disease, diabetes and respiratory illness – could save over 12 million lives,[viii] prevent 28 million heart attacks and strokes, and generate $1 trillion in economic benefit.[101] Best buys include guideline-recommended pharmacological interventions for asthma, diabetes and cardiovascular disease, highlighting the fundamental importance of GDMT in effectively managing chronic conditions.[101] In the US, a 2012 report from the Congressional Budget Office estimated that a 1% increase in prescriptions filled led to a reduction of 0.2% in spending on medical services, illustrating that medicine use could lower overall budget spending.[102] Yet budgeting approaches still fail to recognise health spending as a long-term investment.[103]

viii Lives saved by country income group: low-income countries 823,310; middle-income countries 9,811,276; high-income countries 2,026,333.

A roadmap to reduce potentially avoidable hospitalisations through GDMT optimisation

Lever 1. Enable coordinated care pathways to support early identification and optimise treatment

Education and involvement in treatment decisions can support sustained adherence to GDMT. Patient education that emphasises the benefits of therapy independently of symptoms can improve uptake and reduce hospitalisations.[35] Involving patients in treatment decisions, rather than informing them of decisions already made, may reinforce this effect. Randomised trials involving people with asthma and COPD found that shared decision-making interventions improved guideline-directed adherence to inhaled medicines.[104]

Structured medication reviews in primary care can ensure that people with chronic conditions consistently receive the treatments they need. Regular reviews allow primary care teams to confirm that patients are receiving GDMT – de-prescribing medicines that are no longer needed, and simplifying and personalising treatment.[2] This approach is especially vital for people with multiple chronic conditions, who often take several prescription medications.[2] Healthcare professional-focused incentives can substantially increase medication review uptake.[105] [106] [ix]

Assessing people for GDMT at discharge and following them up reliably reduces the risk of readmission. The STRONG-HF trial, which examined HF hospitalisations in 14 countries, found that rapid GDMT optimisation beginning before discharge, combined with regular follow-up visits, led to fewer readmissions compared with usual care.[107] [x] Trials involving people with COPD support the same approach.[108]

Access to specialists and a single accountable care coordinator can tangibly improve outcomes and GDMT uptake. Nurse-led coordination reduces mortality and hospitalisation.[109] [110] [xi] Optimisation programmes in which navigators facilitate medication adjustments and monitor patients between appointments have been shown to increase the use of GDMT.[111] Interventions that involve regular symptom monitoring of high-risk patients with chronic conditions can reduce hospitalisations (*Case study 1*).[112] Care coordination therefore benefits people with chronic conditions through both better GDMT uptake and improved clinical outcomes.

ix In France, community pharmacists are formally remunerated by the national health insurer for conducting structured medication reviews for patients aged 65 and over with a long-term condition and polypharmacy. Uptake in 2025 was up 43.3% on 2024.

x The adjusted 180-day risk difference was 8.1 percentage points (15.2% vs 23.3%).

xi Among 7,950 HF patients, nurse-led coordination reduced all-cause mortality by 20%, HF hospitalisations by 44% and overall hospitalisations by 22%, while community care navigation is likely to reduce unplanned admissions within 12 months.

Health checks in primary care can identify chronic conditions that would otherwise go undiagnosed, giving people the chance to start GDMT earlier, before their condition progresses. Health checks are an entry point to care pathways, and facilitate earlier intervention.[113] In 2025, the European Commission adopted the Safe Hearts Plan, which recommends annual health checks for a range of conditions, including cardiovascular disease, hypertension and diabetes.[114] One microsimulation model[xii] estimated that a 25% increase in integrated cardiometabolic health screening uptake could save approximately one million lives and over $90 billion over 20 years in Australia, France, Germany and the UK.[115] AI diagnostic tools can further support screening by improving detection rates and identifying people who would otherwise be missed during routine appointments.[116] [xiii]

Case study ❶
Germany's Primary Care Practice-Based Care Management (PraCMan) Programme

PraCMan is a large-scale disease management intervention in Germany. It is designed to improve care for high-risk patients with type 2 diabetes, HF and COPD, and to reduce avoidable hospital admissions.[112] Patients are enrolled when an algorithm based on insurance claims predicts their likelihood of hospitalisation to be high.[117] Care is provided at primary care practices through trained medical assistants who regularly monitor patients' symptoms under the supervision of a general practitioner.[117] The programme is funded through Germany's statutory health insurance system, which provides a single integrated benefits package covering inpatient care, outpatient care and prescription medicines; this means the same payer that funds community-based management also bears the cost of avoidable admissions.[118]

A study of 6,148 participants found that the programme was associated with an 8.3% lower hospitalisation rate and 9.4% lower hospitalisation costs in the year after participation.[112] A previous randomised trial across 115 practices and 2,076 people found that all-cause hospitalisations did not differ from usual care at 12 months or at 24 months, while quality of life improved on every measure used.[119] The trial's authors attributed the lack of impact on admissions to the low intensity of the intervention, and suggested that implementation, rather than the design of the programme, may have been the limiting factor.

xii This model was funded by AstraZeneca.

xiii In the EAGLE trial (n=22,641), AI-guided electrocardiogram screening increased the primary endpoint of new low ejection fraction diagnoses from 1.6% to 2.1%, a 32% relative increase in new diagnoses within 90 days, or about five additional diagnoses per 1,000 patients.

Lever 2. Drive optimal GDMT uptake through incentives

Targeted incentives to improve quality of care can be an effective tool to improve GDMT use. What limited earlier schemes, such as the UK's QOF, was what they counted.[72] Building measures that incentivise healthcare professionals to deliver a complete GDMT regimen and to review doses, rather than just to initiate therapy, could close that gap. Where health systems already operate value- or outcome-based payment programmes, adding explicit, condition-specific GDMT measures (e.g. the proportion of eligible people with type 2 diabetes receiving optimal cardioprotective therapies) gives a direct, measurable lever that providers can act on immediately (*Case study 2*). For such schemes to drive sustained change, the metrics they rest on need to be reported and enforced to ensure accountability.

Case study ❷
Medicare Shared Savings Program (MSSP) in the US

MSSP is a leading example of outcome-based care that aligns financial incentives around coordinated chronic disease management and prevention rather than service volume. The programme, which began in 2012, makes incentive payments to groups of healthcare professionals and healthcare organisations known as Accountable Care Organizations (ACOs) that achieve spending reductions for attributed patients while meeting quality targets.[120] ACOs provide individualised care, including treatment plans and specialist coordination, for people with chronic conditions. This has led to reduced inpatient use, fewer emergency department visits and improved measures of preventive care and chronic disease management.[121-123] One study found that MSSP was associated with net savings of approximately $4.3 billion–$13.4 billion to traditional Medicare between 2012 and 2023, indicating the impact of outcome-based care models on both health and economic outcomes.[120] While MSSP does not include GDMT-specific incentives, it offers lessons about how, with some adaptations, outcome-based models could support GDMT optimisation.

Patient-facing incentives can improve adherence to GDMT. Financial incentives for people living with chronic conditions can help them engage with and adhere to their treatment plans. Value-based insurance design schemes that reduce out-of-pocket costs for people who engage with chronic disease management programmes have been associated with improved medication adherence, although additional measures are required to translate this into improved outcomes.[124 125]

Lever 3. Improve equitable access to GDMT through system reform

Allowing pharmacists and nurses to prescribe and monitor GDMT could broaden access for people with chronic conditions. Expanding the types of professionals who can deliver and optimise GDMT is a practical way to improve access without compromising safety. Pharmacist-led interventions for COPD have been associated with a substantially lower risk of exacerbation-related hospital admissions (*Case study 3*). This task-shifting approach redistributes capacity rather than creating it, so it can only be implemented in health systems with sufficient pharmacist and nursing capacity.[126]

Case study 3
UK National Health Service (NHS) virtual ward pharmacist-led GDMT optimisation programme

Chelsea and Westminster Hospital NHS Foundation Trust in London developed a pharmacist-led GDMT rapid optimisation programme in a virtual ward, allowing people newly diagnosed with HF to be monitored remotely at home while a specialist prescribing pharmacist adjusted four recommended HF medicines over a four-week post-discharge period.[127] A study found that the share of patients prescribed all four foundational therapies increased from 8% to 84% post-optimisation.[127] This case study suggests a promising post-discharge model that warrants evaluation at a larger scale.

Patient-led education and digital tools support people with chronic conditions, including those from underserved groups, to better manage their treatment and improve adherence. Materials should be co-created with patients so that the content is tailored to their needs, preferences and literacy levels, rather than written from an expert perspective that many struggle to follow.[42] Tools such as chatbots and mobile apps designed to build health literacy and promote self-management have also improved disease-related knowledge and self-care adherence, and reduced symptom burden, with high usability and acceptability across diverse populations.[128] Smartphone-based telemonitoring apps have been associated with a reduced risk of HF-related hospitalisation.[129] Increasing the emphasis on GDMT within these digital interventions is a promising route to narrowing access disparities.

Changing which medicines a health system funds can remove cost and coverage barriers that prevent people from receiving treatments recommended in clinical guidelines. Formulary reform can support expanded access to GDMT.[130] [131] The Danish Heart Failure Registry attributes its high GDMT utilisation in part to the partial reimbursement provided for prescription medicines, highlighting the role of reimbursement policy in supporting guideline adherence.[132]

Lever 4. Align budgets with long-term health and societal benefits

Integrated health budgets with pooled funding across primary care, hospital and medicines budgets under shared accountability for long-term health outcomes can improve quality of care and reduce the risk of hospitalisation. Where budgets are integrated across care settings and the same payer receives the financial benefit of avoided admissions, there is a structural incentive to invest in chronic disease management (*Case study 4*). Germany's statutory health insurance Disease Management Programmes (DMPs), which fund coordinated care across outpatient, inpatient and pharmaceutical settings within a single-payer framework, demonstrate this effect. DMP-enrolled patients with coronary heart disease had significantly lower healthcare expenditures per day, a significantly lower risk of death, and higher adherence to all classes of GDMT.[133]

Case study 4
Integrating primary and secondary care budgets in the Netherlands

Primary Care Plus (PC+) relocates specialist consultations from hospitals to primary care settings. It is funded through a regional cooperative of health insurers set up to support integrated, sustainable primary care in the Netherlands.[134 135] Rather than drawing on separate primary and secondary funding streams, PC+ consultations are reimbursed through a single shared fee agreed jointly by general practitioners, hospital specialists and the regional insurer.[134] And, unlike standard hospital referrals, no patient deductible applies.[134] Early results are encouraging: 69% of patients seen in PC+ were managed entirely in primary care, avoiding hospital referral altogether, and activity nearly doubled within two years.[134 135] PC+ shows that pooled, cross-sector financing, rather than separately negotiated budgets, can be a practical lever for shifting care away from hospitals.

Multi-year health budgeting frameworks encourage investment in interventions that may have a long-term but substantial benefit. The OECD identifies medium-term health budgeting (a three- to five-year period) as an essential enabler of more ambitious, forward-looking health policy.[136] Moving beyond annual cycles to medium-term expenditure frameworks allows countries to plan for future costs, capturing returns that would be invisible within a one-year period (*Case study 5*).[136]

Case study 5
Austria's Zielsteuerung-Gesundheit (Health Target Governance Framework)

Austria's Zielsteuerung-Gesundheit is a multi-year governance framework that brings together federal government, statutory health insurance funds and the nine Austrian states under shared, legally binding agreements to plan, finance and deliver healthcare against jointly agreed targets.[137] Critically, the framework was designed to address the strict regulatory and budgetary split between Austria's inpatient and outpatient sectors, which had historically created perverse incentives to treat in hospital what could be managed in primary care, driving high rates of avoidable hospitalisations.[138] The Target-Based Management Agreement for 2017–2021 set a nationwide target to reduce the hospital admission rate by at least 2% annually, alongside targets to shift certain procedures from inpatient to outpatient settings.[139] [140] Reforms also included the development of multi-professional primary care units.[141] During the first reform period, hospital bed-days fell by 10% and discharges fell by 8%.[141] While this case is not GDMT-focused, Austria's approach illustrates that multi-year, cross-government budgeting frameworks with binding targets can realign structural incentives and deliver measurable reductions in avoidable hospital use.

Expanding registries to collect data on GDMT uptake and patient-reported outcomes could guide evidence-based budgeting and decision-making. National disease-specific registries are a feasible mechanism for tracking GDMT use to support decision-making.[142] [143] [xiv] Registry metrics should extend beyond prescribing to outcomes that matter to patients. Embedding patient-reported outcome data into service planning would improve care and generate real-world evidence to support decision-making. Incorporating indicators of GDMT optimisation into national Health System Performance Assessment frameworks would embed uptake in existing accountability cycles, so it is monitored alongside other national priorities rather than treated as a disease-specific concern.[144]

xiv In Denmark, the national COPD register (DrCOPD) has included more than 50,000 patients since 2008 and includes treatment indicators.

Policy recommendations

Closing these gaps requires coordinated reform across the whole health system. This means people who need GDMT will benefit before their condition deteriorates to the point of emergency care, and it prepares systems to adopt innovative medicines as they enter clinical guidelines. The prioritised recommendations below set out where policymakers and decision-makers should start.

Table ❷

Decision-maker roles and responsibilities

Decision-maker group	Roles included	Responsibilities
Health policymakers	Ministers and senior officials responsible for health; regional health officials; medicines regulators and agencies; public health agencies	Setting national policy, regulation and standards
Clinical and professional societies	Specialty and professional societies; guideline development groups	Defining the clinical standard of care and the measures against which it is audited
Health system delivery leaders	Regional and local health authority directors; hospital directors; medical directors; primary care organisations; senior pharmacy and nursing leadership	Translating policy into how care is organised and delivered
Patient organisations	National and condition-specific patient organisations; patient advocacy coalitions; patient representatives on guideline development and assessment committees	Bringing lived experience into decisions and co-producing the information people use to make them
Payers	Statutory health insurance and sickness funds; social security institutions; regional and national commissioning authorities	Deciding what is funded, for whom and on what terms
Health technology assessment (HTA) leaders	National and regional HTA agencies	Assessing the value of medicines to inform coverage decisions
Finance policymakers	Ministers and senior officials responsible for public finance; budget and public spending authorities; regional finance authorities where health budgets are devolved	Setting the fiscal envelope and budget structures

Policy action	Decision-maker responsible	Time horizon for implementation [xv]
Lever 1. Enable coordinated care pathways to support early identification and optimise treatment		
Initiate and optimise GDMT promptly, including simultaneous initiation of all indicated classes where recommended for the specific condition, maintained through structured dose optimisation and shared decision-making.	Health system delivery leaders, clinical and professional societies	Medium term
Implement systematic annual medication reviews to support treatment optimisation, including de-prescribing and intensification.	Health system delivery leaders, health policymakers, payers, clinical and professional societies	Short term
Standardise discharge protocols that include specialist input and scheduled outpatient reviews within a defined interval consistent with condition-specific guidance to reduce the risk of readmission.	Health system delivery leaders, clinical and professional societies	Short term
Introduce systematic case-finding for people already diagnosed with one chronic condition, with defined testing intervals for the comorbidities most commonly missed at every annual review.	Health system delivery leaders	Medium term
Ensure that people with chronic conditions receive coordinated multidisciplinary care, with structured specialist access and a single accountable care coordinator to reduce complexity.	Health system delivery leaders	Medium term
Lever 2. Drive optimal GDMT uptake through incentives		
Embed GDMT-specific prescribing metrics into healthcare professional-focused incentive schemes and quality payment frameworks to encourage healthcare professionals to deliver GDMT appropriately.	Health policymakers, payers, health system delivery leaders, clinical and professional societies	Medium term
Introduce patient-facing incentives in disease management plans so that responsibility for GDMT optimisation is shared with healthcare professionals.	Health policymakers, payers, health system delivery leaders, patient organisations	Medium term

xv Short term (0–2 years), medium term (2–5 years) and long term (5–10 years). The time frames are indicative, have been agreed by the Steering Committee and assume a starting point that is a well-prepared health system.

Policy action	Decision-maker responsible	Time horizon for implementation [xv]
Lever 3. Improve equitable access to GDMT through system reform		
Expand the role of pharmacists and nurses in initiating and monitoring GDMT, enabling access to therapy in contexts where workforce is constrained.	Health policymakers, health system delivery leaders	Short term
Use routinely collected population and health data, stratified by socioeconomic factors and sex, to identify people with the highest rates of potentially avoidable hospitalisations and develop targeted interventions.	Health system delivery leaders	Short term
Ensure equitable access to patient-led education, and digital and AI-enabled tools to support adherence and self-management, including among underserved populations for whom geography, disability or low health literacy create persistent barriers to GDMT.	Health system delivery leaders, patient organisations	Short term
Reform formulary frameworks to remove cost and coverage barriers that prevent patients from receiving treatments recommended in clinical guidelines.	Health policymakers, payers, HTA leaders	Short term
Lever 4. Align budgets with long-term health and societal benefits		
Require budget impact analyses of chronic disease interventions to be accompanied by a projection of hospitalisation and downstream costs over ten years or more, so that avoided admissions fall inside the period in which funding decisions are made.	Health policymakers, finance policymakers, payers, HTA leaders	Short term
Systematically quantify current GDMT uptake and patient-reported outcomes through national registries to enhance evidence-based decision-making.	Health policymakers, health system delivery leaders, clinical and professional societies, patient organisations	Medium term
Integrate health budgets with pooled funding across settings to create shared accountability for long-term health outcomes and discourage hospitalisation.	Finance policymakers, health policymakers, payers	Long term
Adopt multi-year health budgeting frameworks that align investment decisions with the time frames over which interventions deliver returns, such as reducing hospitalisations, relieving workforce pressure and generating economic gains.	Finance policymakers	Long term

xv Short term (0–2 years), medium term (2–5 years) and long term (5–10 years). The time frames are indicative, have been agreed by the Steering Committee and assume a starting point that is a well-prepared health system.

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