

ACCOUNTABLE CARE

FOCUSING ACCOUNTABILITY ON THE OUTCOMES THAT MATTER

Report of the Accountable Care
Working Group 2013

Dr Mark McClellan with Dr James Kent,
Stephen Beales, Michael Macdonnell,
Andrea Thoumi, Benedict Shuttleworth,
and Dr Samuel Cohen


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Professor The Lord Darzi



A handwritten signature in black ink, appearing to read 'Mark McClellan'.

Dr Mark McClellan

FOREWORD

Many nations are seeking to provide better-quality healthcare at lower cost. As healthcare becomes more personalized and prevention-oriented, this goal will be even more difficult to achieve through existing models of healthcare payment and delivery.

Healthcare requires a new operating model. Resources must be redirected to where they can best be used, often away from the hospital, and sometimes away from the clinical setting altogether, and instead to patients themselves. And traditionally separate providers must now work together in new ways to deliver this customized care. This is all the more crucial as an increasing source of demand for healthcare is from people with one or more chronic diseases.

Accountable care is an emerging model for healthcare that addresses this central health policy challenge. It aims to boost quality and reduce cost by reallocating resources on the basis of measurable improvements in care. Better health, better care, and lower costs matter to patients and populations. But traditional payment systems and regulations often do not support the necessary steps – steps such as co-ordinating care, following the latest evidence-based practices, using new technologies, and involving different kinds of providers and innovations in delivering care. Tying payments to the things that matter to people and populations, by moving away from silos or fee-for-service payments focused on supporting providers, can enable innovative reforms in care.

What precisely is accountable care and what can it realistically deliver? How can existing systems make the journey towards more accountable models? And what can policy-makers do to make accountable care a reality? Our report seeks to answer these key questions by drawing on existing examples of accountable care from around the world. Although healthcare systems vary, we distil four policy recommendations that all policy-makers can adopt as they start to put accountable care into practice. These recommendations involve transformations in perspectives, payments, collaboration and competition, and data exchange. We describe incremental steps that policy-makers can begin to take right away in order to achieve these transformational changes.

Policy-makers should seize the moment to deliver transformational changes in healthcare. Across the world, in very diverse healthcare systems, payers and providers are experimenting with accountable care. They are implementing payment reforms tied to results, as a way of supporting innovative approaches to care that will have an important impact on health and costs for the populations affected. Rather than working in isolation, as we have too often done in the past, we believe now is an ideal time for a concerted and ongoing initiative to share global experiences, develop more evidence from these experiences, and thereby gain a better understanding of the implications of implementing accountable care. Our hope is that the collected insights within this report will provide a catalyst for this international collaboration, as we all start to make the transformational changes to our healthcare systems that will deliver better care at lower cost for the populations that we serve.

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EXECUTIVE SUMMARY

THE CHALLENGE: RISING COSTS, VARIABLE QUALITY

Across developed and emerging nations alike, healthcare costs are outpacing the growth of national incomes, driven by aging populations, rising expectations for high-quality care, the increasing burden of chronic conditions, and an ever-wider range of health technologies and treatments. Although new technologies offer longer and better lives, wide variation in the quality of care persists within countries, regions, and cities, with little correlation between the quality and cost of care. The challenge for many health systems is to slow the growth in expenditure while simultaneously providing better quality care.

FROM SUPPLY-LED TO DEMAND-DRIVEN HEALTHCARE

Many healthcare systems worldwide are predominantly *supply-led*, with individual providers each delivering discrete elements of the overall care received by people. Their success (and payment) is often measured in terms of activity or volume. This supply-led model has a number of drawbacks:

- It focuses care on just a portion of the care pathway and not on overall outcomes.
- It does not always hold any single provider accountable for overall outcomes.
- It restricts innovation.
- It generates only limited incentives for collaboration across providers.
- It inhibits individuals and populations from having a real voice in their own overall care.

As a result, this model, even with improvements in efficiency, will struggle to address the cost and quality challenges. This paper argues for a fundamental shift to a *demand-driven* model, where the providers are *accountable* for the care *outcomes* that matter to patients and the broader population.

Driving accountability for outcomes leads to several key benefits:

- It encourages innovation along entire care pathways, to raise quality and reduce cost.
- It incentivizes collaboration between providers to co-ordinate care to deliver outcomes.
- It clarifies for policy-makers what is being achieved by the money being spent.
- It gives people a stronger voice in their own care and in defining what matters.

FOCUSING ON OUTCOMES FOR EPISODES AND POPULATIONS

Shifting the focus to outcomes can be achieved in steps. The first step is to focus on *episodes* of care, where there is a clear link between a procedure and an outcome. That provides opportunities to transparently measure and incentivize outcomes. For low- and middle-income countries, a feasible approach might be *bundled*

payments for entire episodes of care; this approach could help to avert many of the problems now facing more developed economies with traditional payment systems.

Although valuable, these episode-based reforms do not adequately address long-term prevention and management of chronic conditions, or care for the frail elderly. What is required here is a whole-person focus that spans traditional healthcare silos. The design of a model for these fast-growing cohorts involves policy-makers taking a second step: making providers accountable not just for the outcomes of episodes of care, but for the outcomes of a defined *population*. In this population-based **accountable care** model: **a group of providers are held jointly accountable for achieving a set of outcomes for a prospectively defined population over a period of time and for an agreed cost.**

ACCOUNTABLE CARE FOR A POPULATION

Delivering accountable care for a population involves five key components:

1. A specified *population* for which providers are jointly accountable.
2. Target *outcomes* for the population – outcomes that matter to individuals.
3. *Metrics and learning*, to monitor performance on outcomes and to learn from variation.
4. *Payments and incentives* aligned with the target outcomes.
5. *Co-ordinated delivery*, across a range of providers, of the care necessary for achieving the desired outcomes.

Some examples of accountable care health systems already exist worldwide, and the emerging evidence strongly indicates that accountable care can encourage innovation and improve the quality of care. There is also some early evidence for cost savings, but it is less strong, particularly during the initial years of many programs, when investments are needed to change systems and build capabilities.

This report includes five detailed examples of population-based accountable care:

- *Agency for Integrated Care (Singapore)*: better care at lower cost for an elderly population.
- *Geisinger Health System (US)*: better care at lower cost for a diabetic population.
- *Ribera Salud (Spain)*: better care at lower cost for a regional population.
- *NW London Integrated Care Pilot (UK)*: better care at fixed cost for an elderly population.
- *ThedaCare (US)*: better care at lower cost for a payer-specific population.

Our report also describes transitions towards more accountable care in a range of other countries. While it may be too soon to be sure that accountable care will deliver cost savings, it certainly does have a positive impact on quality and *value* (outcomes per unit cost), and that alone makes the accountable care model compelling for policy-makers to adopt now. Accountable care also fosters better measures and greater transparency of quality and performance, and so will likely lead to continuous insights for improving care.

RECOMMENDATIONS FOR POLICY-MAKERS

When a health system does make the shift towards accountable care for populations, policy-makers will need to tailor reforms to their unique local circumstances. All the same, there are four “no regrets” moves that all policy-makers should start to make:

- **Take a broader perspective than illness.** Delivering outcomes that matter requires expanding beyond the conventional hospital-based healthcare domain, to include primary and community care, public health, and social and behavioral care. For policy-makers, this may mean working across funding streams, agreeing on key outcomes, creating mechanisms to link datasets, and pushing for data transparency.
- **Start to pay for outcomes.** While *transparency* on outcomes promotes professional competition and aids the focus of resources, adjusting *payment mechanisms* to reward outcomes is an important or even essential catalyst. For policy-makers, this will involve gradual transfers of risk to providers. One way to begin is by applying episode-based models to prevalent, high-impact diseases in existing systems, in order to steadily improve the quality of evaluation data, and to build the capabilities to manage risk and co-ordinate care across providers. Launching population-based approaches can follow later.
- **Create a favorable environment for organizations to collaborate.** Creating a favorable environment for collaboration across multiple providers will require strong leadership and continual learning, and may also require adjustments to market mechanisms in order to reduce transaction costs. To that end, policy-makers may need to: increase the emphasis on measuring and paying for better care, adjust competition rules, determine where choice and competition outweigh the enhancing of co-operation, learn from national and global examples, and reinforce the overall objectives to encourage longer-term collaborations.
- **Encourage inter-operable data systems.** To achieve clinically integrated care, it is essential to have information systems that enable multiple providers, and patients, to share data in real-time. Efforts might start with limited but focused initiatives, such as establishing patient registries for providers to track the use of evidence-based treatments and preventable complications. For policy-makers, this will involve striking a balance between data privacy and data sharing, enforcing common reporting standards, and ensuring that patients can access their own records.

WHAT CAN YOU DO TOMORROW?

With costs rising and budgets under increasing pressure, alongside growing expectations for high-quality care, improvements need to begin now. This report concludes with a checklist of specific actions that you can take tomorrow, to start focusing accountability on the outcomes that matter.

CONTEXT AND DEFINITION

CONFRONTING COMMON CHALLENGES

Across much of the world, the challenges involved in delivering healthcare appear remarkably similar. Developed and emerging nations alike, beset by constrained economic conditions, find that healthcare costs are far outpacing the growth of both national and household incomes.¹ In Western Europe, for instance, healthcare costs have in recent years increased at twice the rate of economic growth. The bill now stands on average at nearly 10 percent of GDP, a situation replicated from Argentina to Australia, from Bosnia to Brazil, and from Canada to Costa Rica. This relentless rise in costs is due to several common factors: aging populations, the ever-heavier burden of non-communicable diseases, greater demands for care, and the surge in clinical advances.

While the costs of healthcare have soared almost everywhere, the same cannot always be said for the quality of healthcare. Variation of outcomes persists, even within a single country, region, or city, and patient experience (or “customer satisfaction”) likewise varies greatly, according to the setting, the healthcare provider and the payer.² Rival forces are being applied: on the one hand, citizens expect and demand higher-quality healthcare; on the other, governments want to restrain healthcare budgets. Policy-makers are caught in the middle, trying to find a way of improving care while simultaneously reducing expenditure, or at least slowing down its rate of growth.

In seeking to codify this aspiration, the Institute for Healthcare Improvement (IHI) has defined a *Triple Aim* for healthcare systems:³

1. To improve the health outcomes of populations.
2. To enhance the quality and experience of patient care.
3. To reduce the per-capita cost of care.

Pressure is mounting throughout the world to deliver the Triple Aim, particularly for certain cohorts of patients. These patients, primarily the elderly and those with long-term conditions, are experiencing most intensely the double problem of rising costs and variable quality of care.⁴ Historically, these types of crises have largely been solved through dramatic shifts in productivity, delivered by a mix of new entrants, new technology, and new business models or changes to the industry structure – in other words, disruptive innovation. Interestingly, there are plenty of new technologies that have the potential to raise productivity – those focused on health, such as genomic advances, diagnostics, and the promise of personalized medicine, as well as the broader digital, telecom, and social media innovations. In addition, the healthcare systems in most developed nations are awash with potential processes to improve quality and reduce costs. But there seems to be limited co-ordination and prioritization of these plausible solutions, and no mass adoption. What is missing is business-model innovation.

While a multitude of healthcare reforms have emerged, they tend to involve incremental efforts to improve the efficiency of the current payment and delivery models: either directly, or by altering aspects of the market in which they operate. The direct efforts tend to focus on reducing cost and volume within existing frameworks⁵ - notably by driving out inefficiencies, slashing reimbursements, controlling margins, and limiting utilization. The second type of reform - altering aspects of the market - has focused on the regulation of healthcare insurance and provision, in order to modulate the supply of healthcare. These efforts include: promoting competition, expanding or contracting private sector involvement, and increasing or decreasing the strength of central planning and budgeting. Yet despite two decades of concerted cost- and volume-reduction initiatives, whether by governments or other payers across many different healthcare markets, costs continue to rise, and outcomes and quality continue to vary. At the same time, providers and practitioners have become disengaged, and innovation has been stifled.

Whatever the solution, then, it is going to be something more comprehensive and innovative than just a set of short-term policy changes to improve the efficiency of current systems.

CHANGING PERSPECTIVE

Since piecemeal reforms to existing systems appear to have failed to achieve the Triple Aim, it seems that some more fundamental and far-reaching change is needed to healthcare markets and delivery, particularly for those people with the greatest care needs. That is the view of more and more clinicians, academics, executives, and policy-makers. They note that, in numerous countries, the existing structure of healthcare reimbursement and provision is based on a *supply-led approach*: providers tend to deliver - and are paid for - only *elements* of the care a person may need, rather than attending to the overall outcome, patient experience, or use of resources. As a result, care is optimized at the element-level and is fragmented between providers. Across various healthcare systems - whether based on fee-for-service payments or on global budgets - the same problem thus arises: expenditures on hospital care, primary care, and social care are siloed, so there is little incentive to optimize outcomes and costs across care pathways and at the person-level rather than the provider-level. Moreover, granular payments for elements of care inhibit innovation, since changes to the care pathway require simultaneous changes to the payments for the care elements that make up the pathway.

This situation has emerged naturally over time, impelled by ever-increasing clinical specialization that has led to a disjointed view of patients, their health, and the outcomes that matter to them. In consequence, individuals and populations find it hard to have a real voice in their overall care. With such emphasis on the volume and intensity of narrow services, it is no surprise that overuse and fragmentation occur. In fact, the supply-led approach can even offer perverse incentives to healthcare systems - such as incentives *not* to reduce surgical failures, or *not* to prevent chronic-disease progression in the first place.⁶ Also unsurprisingly perhaps, it turns out that there is often very little correlation between the average costs of treating an episode and the quality of care delivered; the greatest discrepancies occur in the treatment of common chronic conditions, where episode costs can vary 15-fold for the same care quality and outcome.⁴

Piecemeal healthcare reform has not managed to divert the focus away from supplying elements of care. These traditional types of reform are never going to make enough of a difference, especially as the key source of demand becomes (multi-morbid) chronic disease. This paper argues that what is needed to meet today's common challenges is a more comprehensive *demand-driven* or consumer-led approach, in which providers are accountable for delivering the outcomes that matter to patients and to broader populations. This, broadly speaking, is what accountable care is about: shifting the perspective away from supplying inputs and activities, and towards pursuing outcomes for people and populations. It will require the re-allocation of resources, and transformations in the existing structure of healthcare reimbursement and provision. It will give people and populations a stronger voice in determining their own care and in defining what matters. Fundamentally, the healthcare system's mission will be redefined: don't just treat patient illness, but also raise overall population wellness.

The shift from a supply-led approach to a demand-driven approach is mirrored by the shift from a fragmented, activity-led healthcare system to a more holistic, outcomes-driven healthcare system. The new focus on outcomes and their cost, rather than elements of care and their cost, enables policy-makers to integrate a range of reforms into a comprehensive strategy - one that strikes an improved balance between depth of clinical specialization and the breadth required for effective co-ordination of care.

In the past, other industries have made a comparable shift from a producer-oriented mode to a more customer-centric mode, and they have been revolutionized as a result: you need only think of aircraft engines, or pharmaceutical R&D. The shift would usually take considerable effort, and in some cases several decades, to succeed. For those involved, it meant changing deep-seated ways of working and developing difficult new capabilities. Healthcare systems will have to face similarly tough challenges, but they don't have the luxury of several decades to get it right.

In fact, the shift has already begun in healthcare. The dominant supply-led design is increasingly being challenged by outcomes- or *value*-based designs, with *value* defined as outcomes per unit cost.⁷ In many cases, it is the prioritization of these potential solutions, and their diffusion and mass adoption, which seem to be the limiting factor. Many reforms being introduced are intrinsically better aligned with the Triple Aim. Examples include:

- *Value-based payments reforms*, in response to payment models that reward volume rather than delivery of the Triple Aim.
- *Clinical-integration reforms*, in response to the care fragmentation promoted by existing activity-based systems.
- *Data-transparency reforms*, in response to the lack of data-sharing and evidence-based care within existing systems.

Shifting the focus to outcomes can be done in steps. The first step concerns episodes of care where there is a clear link between a procedure and an outcome – and where the focus has been on the overall outcomes delivered as well as the costs for delivering these outcomes. In India, for example, the hospital chain Narayana Hrudayalaya offers cardiac surgery for a single fee that covers the entire procedure and related care. It performs approximately 60 heart surgeries a day, and has optimized all aspects of care across the episode, with an emphasis on providing

exemplary outcomes at a remarkably low cost. One critical feature in such episode-based examples is the move towards transparent reporting on the overall outcomes and costs, which helps to drive higher productivity. For care centered on specific episodes, focusing on outcomes (for a given cost) does not require significant rearrangements to the industry structure, since treating these episodes does not involve much co-ordination between providers. For low- and middle-income countries, this episode-based approach should prove to be a particularly important step. By promoting transparency of outcomes and costs – and potentially linking these outcomes to payments – at an early stage, they could avoid many of the supply-led problems in healthcare now faced by more developed economies.

Although episode-based reforms are certainly a useful first step, they are not sufficient for addressing the preventable costs and quality gaps associated with caring for the frail elderly and those with chronic conditions. For these increasingly important cohorts, a more significant change is needed – a second step, which knits together traditionally separate providers. The design of a model for these populations requires policy-makers to extend accountability to cover outcomes for an entire population rather than just an episode of care. Specific healthcare systems have adopted various payment, integration, or data reforms as part of larger initiatives which start to do just this, such as *managed care*, *integrated care*, *value-based health care* and *goal-based care*. Although these population-based initiatives confront the challenge from different starting points, they all share a broad objective: to deliver value for populations. *Accountable care* takes a further leap forward. It builds on these earlier initiatives for populations, but its approach is more comprehensive in aligning payers, providers, and patients to achieve the Triple Aim; it aspires to achieve multiple transformations, embracing all three categories of reform just listed – payment, integration, and data.

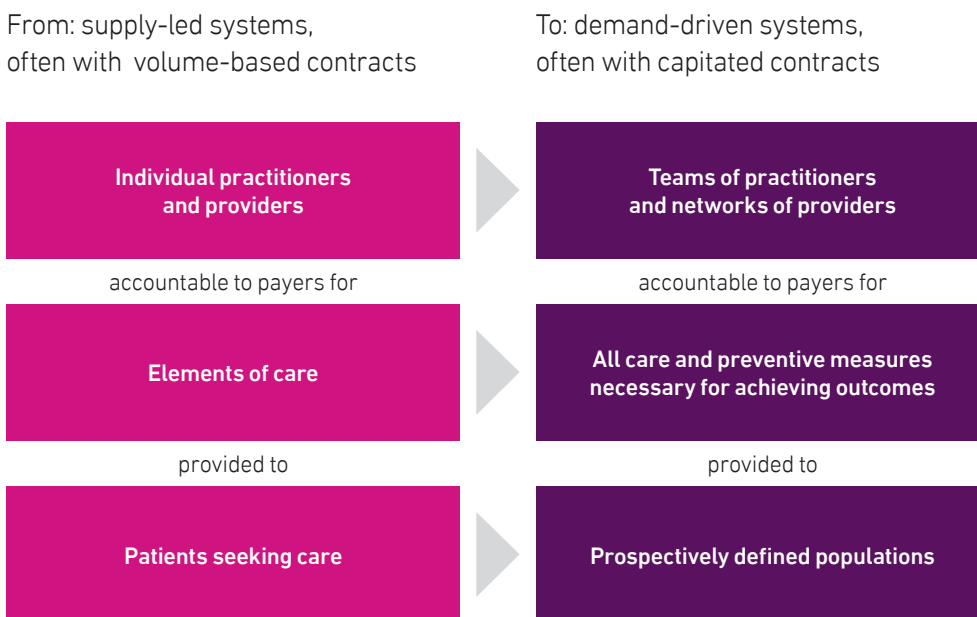
Note that while value-based reforms for populations, including accountable care, have a broad reach, the *business model* that they represent is particularly applicable for certain cohorts of individuals – notably, the elderly and those with chronic conditions, as mentioned. These people tend to have long-term and often complex needs and tend to have the most frequent interactions with the health system via a range of providers. So they are the people most affected by the current lack of alignment in goals, incentives, and co-ordinated care delivery among providers and payers. And they are the people who would benefit most from better clinical integration; a sharper focus on prevention, disease management and self-care; and tighter adherence to clinical best practice. These cohorts, of course, constitute a substantial and rapidly growing proportion of healthcare expenditure across much of the world.

REDESIGNING ACCOUNTABILITY TO DELIVER VALUE

The phrase *accountable care* has begun to attract a great deal of publicity over the past few years.^{2,8,9} This attention is due largely to the piloting of so-called Accountable Care Organizations (ACOs) by private insurers and the Centers for Medicare & Medicaid Services (CMS) in the US; provisions for ACOs were included within the 2010 Patient Protection and Affordable Care Act. ACOs are networks of healthcare providers that accept joint accountability for meeting defined targets on the quality and costs of care. ACOs represent an important manifestation of accountable care, but are not the only or definitive manifestation.

As mentioned earlier, at the most general level, accountable care reforms are aimed at re-aligning accountability within a healthcare system. This shift in accountability, shown in *Figure 1*, can best be elucidated by comparing the typical current situation (within a supply-led system) with the ideal situation of the future (within a reformed, demand-driven accountable care system).

Figure 1: A fundamental shift in accountabilities occurs when switching from a supply-led system to a demand-driven accountable system



In a traditional supply-led system, *individual clinicians and other providers* are accountable to payers for providing *elements of care*, such as conducting a consultation or performing a blood test. These clinicians are accountable for providing care for *specific clinical needs* in individual patients who have already sought care from the healthcare system. Reimbursement is predominantly based on the *volume of activities* provided to these patients, or possibly on a set budget for a particular silo of care, regardless of the impact on health outcomes – a potentially problematic incentive.

In a population-based accountable care system, the situation is strikingly different: *groups of care providers* (which do not have to merge to form a single legal entity) span the entire process of care delivery at the person-level. They are jointly accountable

to payers for achieving a defined and measurable set of *target outcomes*. And the providers are accountable not just for individual patients seeking care but for a prospectively defined *population* – that is, a group including individuals that may not have strong existing relationships with the providers. Finally, reimbursement is partly based on the providers' collective performance against the target outcomes – an aligned incentive. In short, the emphasis is on joint accountability and incentivizing around outcomes that matter to the individuals in these populations. And that requires the co-ordination across a wide domain – not only primary and secondary care, but also preventive health and even social care and mental health.

So a global definition of accountable care would be this:

“A system in which a group of providers are held jointly accountable for achieving a set of outcomes for a prospectively defined population over a period of time and for an agreed cost.”

IDENTIFYING THE FUNCTIONAL COMPONENTS

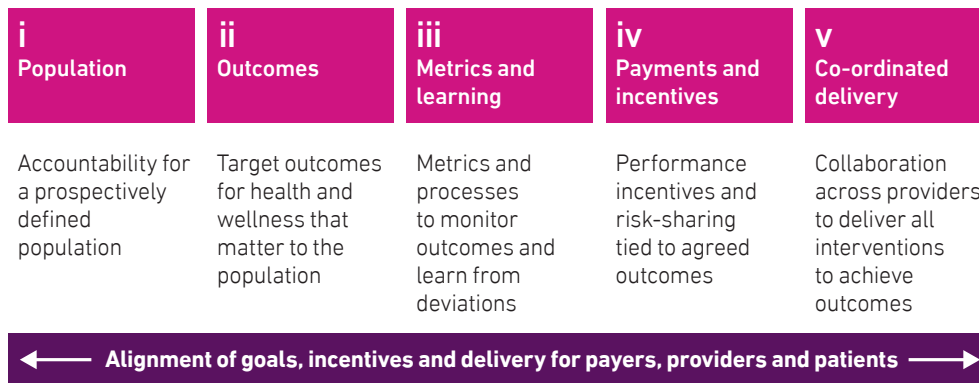
Delivering accountable care involves five key components, shown in *Figure 2*:

- i. **Population**
- ii. **Outcomes**
- iii. **Metrics and learning**
- iv. **Payments and incentives**
- v. **Co-ordinated delivery**

Each successive component builds on a predecessor. The first move in redesigning accountability is to select the relevant *population*. The next is to define for this population a set of *outcome* targets that matter to the individuals. Once these targets are established, the task is then to evaluate providers' performance against them and learn continuously from deviations, so appropriate *metrics* and performance-monitoring procedures must be implemented, including for utilization and costs. Then, *payments* should be used to drive delivery both of the outcome targets and of cost reductions – the providers should share the financial risk of delivering the target outcomes, through incentives for providing higher-quality care at lower costs. Finally, to optimize performance and hence take advantage of the new payment system, the care-delivery process should encourage and facilitate collaboration and *co-ordinated delivery* within and across teams of clinicians, other care providers, and the patient population.

Of course, once implemented, these five components of accountable care are connected not only sequentially but also as part of a closed feedback loop: the lessons learned from continuous evaluation are fed back into the design of current and developing programs. Although the five components of accountable care are universal, the functional framework (*Figure 2*) does not give them all equal weight. Instead, when applied to different healthcare systems at different starting points, certain components may claim greater importance than others: for example, the issue of reforming payments might have more significance for a private healthcare system operating uncapped fee-for-service payment models than it would for a public system operating capped budgets.

Figure 2: The five functional components of accountable care



RATIONALE AND EVIDENCE BASE

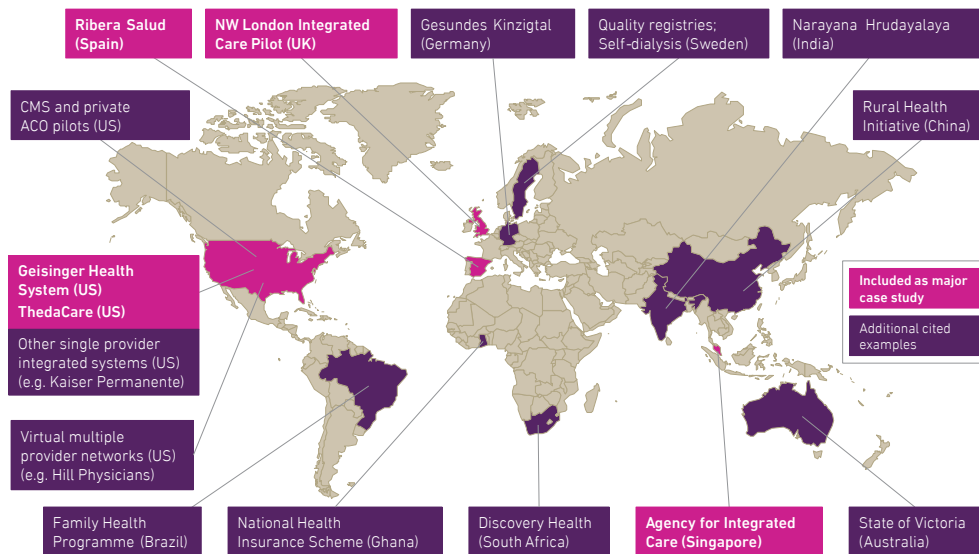
MAKING SENSE OF THE EVIDENCE

The case for moving away from a supply-led healthcare system has never been stronger. The over arching goal of accountable care reforms is to meet the Triple Aim for a given population; that is, to improve its health outcomes, enhance the quality and experience of care, and reduce the per-capita costs. For each of these individual aims, there is a clear rationale and a growing evidence base from which a blueprint for the likely benefits of the reforms is emerging. The rationale and evidence are strongest for the cohorts mentioned previously: people with chronic and long-term conditions, and the elderly, particularly when poor or otherwise vulnerable.

Although value-based reforms have been taking place for more than a decade now, there have been only a few wholesale implementations of accountable care, and some of these have been piloted too recently to demonstrate the projected improvements, particularly in respect of cost savings. It was only in 2010, for example, that ACOs were authorized in Medicare in the US. The ACO model, however, builds on similar US initiatives implemented earlier by private insurers, as well as on previous Medicare pilots (including the Physician Group Practice Demonstration) that provide evidence from 2005 to 2010. In addition, Health Management Organizations (HMOs) – which integrate the delivery of comprehensive care for a population of insured patients for a capitation payment – have an extended history dating back three decades. And single-provider integrated delivery systems, combining primary, secondary and other aspects of care, have likewise been running for decades: the best-known examples include Kaiser Permanente and Geisinger Health System. In other parts of the world too, the evidence base is certainly growing, with examples across Europe, North and South America, Asia, and Oceania (*Figure 3*).

What does the evidence so far reveal? Implementing accountable care is challenging, and the starting points and priorities of different initiatives vary considerably. Broadly speaking, several studies of larger-scale accountable care implementations show evidence of improved health outcomes and of improved care quality: impressive gains are often apparent after just two or three years.^{10,11} The gains are strongest in driving out poor-quality care, particularly for the vulnerable and those with complex

Figure 3: Selected global examples of accountable care and related initiatives



care needs, and replacing it with evidence-based protocols. But overall cost savings during the early years of these programs tend to be modest,^{12,13,14} with improvements sometimes emerging only after five years or more.¹⁵ Those stakeholders close to implementations cite a number of reasons: the investment needed for changing systems and building capabilities, short evaluation timeframes, and the high transaction costs of collaboration in the early stages. Although the long-term picture is still to become fully clear for costs, that cannot detract from the positive impact that accountable care has made on outcomes and quality, and hence on overall value. This impact makes accountable care a robust reforming approach that policy-makers can and should begin adopting today. Here is a summary of the rationale and emerging evidence for each of the three aspects of the Triple Aim in turn.

Improving the population's health outcomes. At its simplest, improving the health of a population means narrowing the gap between the population's current health status and its ideal health status. That goal involves reducing the burden of disease not only through optimal diagnosis and treatment, but also through active disease management and preventive health measures. *Prevention trumps cure.* Accountable care approaches this goal by means of outcome targets. In paying for outcomes rather than for individual pieces of care, it allows and encourages innovation in the care pathway without requiring payers to change the prices of individual elements. In specifying joint accountability across providers, it fosters the co-ordinated management of chronic conditions. And in defining accountability for outcomes at a population-level, it shifts the emphasis from patients to people, and thereby motivates implementation of prevention and public health actions that have proven value.

Pilot implementations of accountable care from the US, Europe and Asia have reported strong improvements in early detection and screening; for example, the Alternative Quality Contract, a private ACO-like system in Massachusetts, achieved improvements in cancer, cardiovascular and STI screening and in chronic disease management in its first and second years, with improvements greater in the second year than the first.¹⁰ Improvements in dementia diagnosis rates have been reported

in London.¹⁴ And longer-running programs, including Medicare Advantage HMOs, have observed improvements in disease burden and practical outcomes for the patients, such as reduced incidence of stroke, amputations, and mortality.^{1,16} A few more recently initiated programs, such as those at *Gesundes Kinzigtal* in Germany¹⁷ and Geisinger Health System in the US,¹¹ have also recorded improvements in these and other key outcomes. As for preventive health initiatives, there is little reliable information so far, but the long-term prospects are good, and many programs are investing more heavily in preventive measures.

Enhancing the quality and experience of care. This part of the Triple Aim relates to the individual patient within the population – his or her experience or “customer satisfaction” with the health system. It includes aspects such as the variability and duplication of treatment, complications, waiting times, outcomes that matter to individuals, and the respect shown to the patient. By focusing on outcomes, accountable care empowers clinicians and others to focus on evidence-based practice. This clinical engagement and empowerment can help greatly in driving productivity. By promoting collaboration across providers and removing volume-based incentives, accountable care gradually eliminates unnecessary or duplicated treatment. This change is catalyzed by means of strong monitoring and transparent performance management, tied to incentives. The performance targets are designed to align not just with clinical outcomes but also with patient experience. In other words, the objective is to ensure patient satisfaction as well as clinical improvements.

What does the evidence indicate here? The strongest improvements generated by accountable care approaches are in standardization and evidence-based care, especially in delivering care that requires the involvement of multiple providers. There is compelling evidence of improvements associated with driving out existing poor-quality care, particularly for vulnerable patients with complex needs. Integrated delivery systems in particular – such as Kaiser Permanente, Geisinger, and ThedaCare in the US and Ribera Salud in Spain – have shown convincingly how co-ordinated care, with robust performance monitoring and feedback, can help in reducing variation and duplication of treatment.^{18,19,20} Networks of independent providers too are registering improvements in co-ordinating care,^{14,21} although they face greater barriers to success. As for patient experience, that is also generally better within accountable care systems: improved care transitions and patient engagement have raised patient-satisfaction scores considerably in countries from Singapore²¹ to Spain²⁰ to Sweden.²²

Lowering the per-capita cost of care. Perhaps a more precise formulation of this aim would be: *containing* healthcare costs, or lowering the *rate* of cost growth, rather than necessarily cutting costs. Arguably, accountable care is *intrinsically* more economical than existing activity-based systems. A strong preventive health focus to reduce chronic illness, timelier interventions to limit acute episodes, fewer unnecessary treatments, less duplication, and fewer complications – all of these aspects of accountable care add up eventually to a healthier population and potentially lower overall expenditure. Unlike the first two parts of the Triple Aim, however, cost-reduction may take considerable time to emerge. Accountable care implementation involves set-up costs, which could exceed any initial savings. In addition, providers will bear transaction costs for co-ordination, which should shrink over time.

Banking provides an example here: when bank transfers and payments were first introduced, there were significant costs involved for the bank, although customers benefited from the improved “outcomes.” Today, the transaction costs for banks have been reduced considerably, with consumers managing their own payments online. As people are empowered to manage their own healthcare, transaction costs for providers should similarly decrease. There is a further challenge: the accountable care system will at first have to deal with the legacy of the superseded activity-based system. Old habits die hard, especially if financial incentives are mixed. The activity-based system still has a strong foothold in some respects. One of its legacies, for instance – *emptied beds will be filled* – remains widely in force. Until this old mindset is eradicated and the legacy system is left behind, wasteful procedures will persist, and the promised cost savings may be unforthcoming.

Nevertheless, there is some evidence that traditional health-system interactions are being reduced; in particular, research from Asia,²¹ Europe,²⁰ and North America¹⁵ suggests that admission and re-admission rates are responsive to accountable care initiatives. This seems especially true for vulnerable patients, often suffering from several co-morbidities, such as those dually eligible for Medicare and Medicaid in the US.¹⁵ Pilot implementations also report tighter price control and a reduction in unnecessary treatments,^{10,20} but these savings in the early years tend to be small.^{12,23} The overall evidence is variable, however, and in some cases, cost savings are indiscernible during the first few years.¹⁴ In the US, for example, 13 of the 32 Pioneer ACOs achieved shared savings in the first year, two ACOs shared losses, while the rest did not achieve enough savings to share in them.¹² Integrated care pilots in the UK have had similarly mixed results.²⁴ It is not always clear, moreover, that provider-level savings translate into savings for the payer: implementation costs, as mentioned, might actually exceed the savings.¹⁰ The strongest evidence for deep cost savings comes, unsurprisingly, from organizations that have existed for many years, including large multi-specialty practice groups²³ and single-provider integrated care systems such as Kaiser Permanente.¹⁸

CHARACTERISTICS OF SUCCESSFUL ACCOUNTABLE CARE SYSTEMS

Through a survey of this emerging evidence and a number of selected examples, *Case Studies 1-5*, we can begin to identify common themes in the most promising value-based implementations. Organizing these themes around the five functional components of accountable care establishes a set of general characteristics, shown in *Figure 4*, for successful accountable care systems. These characteristics are discussed below, drawing on observations from our case studies.

Figure 4: Characteristics of successful population-based accountable care systems

i Population	ii Outcomes	iii Metrics and learning	iv Payments and incentives	v Co-ordinated delivery
Prospectively identified	Outcomes that matter to people and clinicians	Metrics proven as leading indicators for outcomes	Payments capitated (year-of-life)	Formal agreements amongst providers
Capturing all people who meet the criteria	Balanced across prevention and cure	Monitoring is validated, real-time, transparent	Payers and providers share risk and savings	Facilitated by data sharing and access
Intersections and co-morbidities recognized	Comparable with other provider networks	Monitoring integrated into clinical work flow	Differential payments based on outcomes	Clinicians empowered to adjust interventions
Populations prioritized on potential value	Aligned with global best practice	Results made public to allow comparisons	Incentives at all levels for success	Ensuring full use of all team members
Based on a holistic view of spend across providers	Differentiated on the basis of patient risk and co-morbidities	Closed learning loop based on variations and feedback	Complemented by professional rivalry on outcomes	Focus on prevention, community, and self-care where possible

(i) Population. The population must be clearly identifiable to all involved, including the relevant providers and the individuals comprising the population. Populations are typically defined as groups of individuals suffering from specific types of diseases; or they might instead be defined through combinations of broader characteristics such as geography, age and payer affiliation, and the basis for membership might be opt-in or automatic sign-up. Geisinger Health System's diabetes program (*Case Study 2*), for example, is disease-specific, whereas in the elderly population for the Integrated Care Pilot in North West London (*Case Study 4*), the main criterion is age. And in other accountable care systems, such as Ribera Salud in Spain (*Case Study 3*), the relevant population consists simply of all residents of the local region.

Population-based accountable care ideally involves "whole-person" accountability. This means that an individual can be a member of only one population, and through that channel receives all of his or her healthcare, and preferably social and behavioral care as well. So even if the population is based on a common morbidity, its members have *all* their healthcare needs – not just care related to the disease – covered through the accountable payments. This whole-person accountability encourages the maximum possible attention on preventive care and effective long-term management of chronic conditions. It is particularly suited to those suffering from, or at risk of, one or more long-term conditions – including the elderly. For example, the China Rural Health Initiative has targeted primary care onto patients at high risk of cardiovascular disease, which is a leading cause of mortality and morbidity in China.²⁵ Where a patient meets the eligibility criteria for more than one population, rules should determine how to resolve the conflict; in North West London (*Case Study 4*), for example, patients who qualify for both the elderly and the diabetic populations are routinely assigned to the elderly population.

Note that there is another, more restricted model of accountable care that is distinct from population-based accountable care – perhaps as a prelude to it, or as a complementary reform. As providers learn to take on risk, they might implement a model of accountability for specific episodes or bundles of care: perhaps they would offer integrated treatment – primary, secondary, and rehabilitation – related to a stroke or maternity or elective surgery, rather than “whole-person” accountability. The ProvenCare programs from Geisinger, for instance, offer single “bundled” packages for all care related to episodes such as a coronary artery bypass graft (CABG) or cataract surgery, including any re-admissions due to complications within a defined time period after surgery. Think of such packages as stepping stones in accountability: providers can engage with smaller populations and so can more easily model costs and risk levels, and in that way they can gradually build the capabilities for outcomes-based rather than activity-based care. Eventually, the bundles might be integrated into fully formed population-based accountable care systems, or they might continue independently in parallel.

As population-based accountable care has been rolled out, two parallel routes have emerged for defining populations. Some organizations – including pilots across Asia (*Case Study 1*) and Europe (*Case Study 4*) and certain integrated delivery systems in the US (*Case Study 2*) – have developed whole-person accountable care systems for patients with a certain disease status or within a specific age bracket. Here target outcomes can focus on specific challenges that this population faces, and progression to more accountable payment models, particularly capitation, can occur more rapidly. The other route – taken by a few organizations in Europe (*Case Study 3*) and by the vast majority of ACOs in the US (*Case Study 5*) – starts with accountability for a much broader population of patients, typically those who receive their primary care from ACO-affiliated physicians, but progresses more slowly towards fully accountable payments, often by building shared-savings models on top of existing financing. These broader populations encompass many different sub-populations based on disease status or age; this means that target outcomes must be heavily customized, or *stratified*, at the patient-level, according to individual health status and risk factors for different morbidities. In both routes, the size and specificity of the population will determine the level of risk adjustment and management that is needed: smaller and more specific populations require tighter risk adjustments, whereas broader population coverage automatically averages risk exposure.

As payments evolve from activity-based or fixed payments to outcomes-based, it becomes necessary, as all of our case studies show, to establish a database of patients for each population – a *patient registry*. Its purpose is to track and measure performance not just for active patients but ideally for all those *at risk* of requiring healthcare, or other social or behavioral care, within the system. In implementations with highly developed information systems, such as Geisinger (*Case Study 2*), the registry is populated from, and linked to, electronic health records (EHRs), and provides patient-level performance information in real-time during the care process.

For an example of effective selection and engagement of a high-need population, consider the Agency for Integrated Care (AIC) in Singapore (*Case Study 1*). AIC was set up by the Ministry of Health specifically to improve long-term care in Singapore, particularly for the elderly, and has delivered impressive results across the Triple Aim for this population.

(ii) Outcomes. For each selected population, policy-makers will want to identify major and feasible opportunities to improve care and, if possible, reduce costs. Many successful accountable care initiatives begin from a clear unmet opportunity for delivering better care at lower costs, such as the limited care available outside hospital for the elderly in Singapore (*Case Study 1*) or the lack of adherence to clinical best practices in diabetes care identified by Geisinger (*Case Study 2*). Since accountability is for a population that includes both healthy and sick individuals, the emphasis should be on preventing and managing illness, rather than simply on treating disease.

Once the areas for improvement are identified, the next step is to define the relevant improvement goals – in terms of specific target outcomes, not activities. Outcomes, in this sense, consist of results that matter to the patient (and the clinician), consisting of a practical benefit to the person's overall wellness, such as increased mobility, reduced risk of stroke (*Case Study 2*), or dying at home rather than in hospital, plus their experience of care (*Case Study 1*). Crucially, all of these targets are based on value, not activity.

Since sets of key outcomes are ideally based on evidence, outcome lists should be broadly consistent across provider networks. However, it may not be possible to assign precise values and priority rankings to the target outcomes, since there is so much variation from case to case: any two patients may vary not only in their risk levels but also in their individual goals, and so have different “flavors” of outcomes even if they currently have very similar health statuses. Every patient should ideally have a say in prioritizing his or her own set of outcomes, and should always be engaged with the delivery of care.

There is still much to be learned about defining the best possible sets of outcomes. As lessons emerge from clinical trials, pilot programs and national frameworks, we need to share insights across the increasingly international audience facing this common challenge. An interesting example here is the International Consortium for Health Outcomes Measurement (ICHOM), an organization working to transform healthcare by intensively studying the patients' views on what matters.²⁶ Working with patients, leading providers, and other registries, ICHOM is creating an evidence-based global standard for measuring results for each and every medical condition, from prostate cancer to coronary artery disease. Providers around the world are able to tie their outcomes to ICHOM, pool their findings and conclusions, and work together towards delivering results that really matter to patients.

(iii) Metrics and learning. Metrics are needed for measuring the target outcomes and for tracking progress towards achieving these outcomes. For this latter purpose, it is best to select intermediate metrics that are well established as leading indicators of the target outcomes (*Case Study 2*). For outcomes defined at the most practical level, such as complications related to diabetes, monitoring is usually done on intermediate clinical metrics, such as blood glucose or hemoglobin levels, which track early signs of progress and eventually translate into improvements in outcomes. Tracking is also usually done on administrative targets, such as specified admission or re-admission rates, in order to identify any inappropriate care and utilization (*Case Study 4*). Although ideal metrics are sometimes lacking, there is growing availability of technically feasible and validated evaluation metrics through national and

international databases such as ICHOM. And even though it can be difficult to make reliable measurements of important outcomes, or the progress towards them, evaluation metrics and methods are improving over time as lessons are learned.

In the most successful examples of accountable care, real-time monitoring is regarded as indispensable. It is hard-wired into the treatment process, including the process of self-care, and provides nudges and notifications directly into the clinical workflow. Results are audited frequently, and fed back into the care system, so that the process becomes an intrinsic part of care delivery. Preferably, this all happens automatically, through information systems that are fully integrated with care, as at Geisinger (*Case Study 2*), Ribera Salud (*Case Study 3*), and ThedaCare (*Case Study 5*). Results are made readily available – in detail to the individual patient and caregiver, and in aggregated or anonymized form to the payer and public – thereby allowing easy comparison between providers. The evaluation process is transparent and widely publicized, which gives assurance that the system is not being “gamed.” Through this process of consistent and transparent reporting, providers are able to compete fairly and also to collaborate on outcomes.

The move towards transparency on the overall performance, delivered for a known cost, will help to drive higher productivity through professional competition and through the wish to use better outcomes to attract patients. Consider again the hospital chain Narayana Hrudayalaya, whose outstanding heart-surgery package (discussed above, in the sub-section “Changing perspective”) has put it in a strong competitive position. For low- and middle-income countries in particular, such *bundled* payments for entire episodes may be a feasible step, and one that could help avoid many of the problems now faced by more developed economies with traditional payment systems.

For an example of complete re-design of care around the selection and evaluation of target outcomes and metrics, consider Geisinger Health System’s diabetes care program (*see Case Study 2*). Geisinger consults national clinical databases to define outcome targets and metrics, and uses its own information systems to integrate a transparent monitoring process directly into care delivery: the result has been significantly reduced rates of stroke, myocardial infarction and retinopathy.

Alongside making data available to the relevant providers, payers and patients, there is also value in pushing patient-level data into the public domain. Public databases of anonymized, longitudinal evaluation data have proved very useful in identifying the most successful treatment protocols, and they also serve to promote provider competition. The best reference model here is that of Sweden’s Quality Registries. Launched in the 1990s, these databases contain patient-level data on conditions, medical interventions, and outcomes after treatment, as well as on patient-perceived quality of care. Their impact has been substantial: providers’ scores are continually compared, fostering competition and the rapid improvement of poor performance relative to peers. Moreover, aggregated data from the registries has enabled comparisons between alternative types of treatment, pinpointing the best protocols and drugs; the five-year survival rate for a specific leukemia, for example, has risen from 12 percent to 89 percent since the registries were inaugurated.⁵

(iv) Payments and incentives. The most advanced accountable care systems, such as Ribera Salud in Spain (*Case Study 3*), remunerate providers on a capitated basis (that is, a fixed lump sum per member of the population per month or year). If the providers fail to achieve minimum quality standards, they suffer reduced remuneration or other consequences (such as possible loss of contract renewals). The quality control is crucial, as it counteracts any temptation on the part of the provider to skimp on treatment or seek to select healthier, lower-risk patients in order to maximize profits. Within providers, performance-related pay can be effective (*Case Studies 2 and 3*): for all provider staff, not just clinicians, a proportion of pay could be variable, based on the entire provider network's record in meeting outcome targets or improving on previous success levels. In addition to these financial incentives, indirect incentives may be introduced, such as the widespread publication of transparent evaluation data to foster professional competition.

The move from the old fee-for-service model to the new model of capitated payments is not a simple one. It takes a considerable amount of data, infrastructure, and expertise to determine the capitation amount and calculate how it will evolve. Providers learn these lessons and build these datasets over time. Like the other components of accountable care, reforms to payment models mature through a stepwise process that gradually builds capabilities and knowledge (see the section "Mapping the transition to accountable care"). The process typically begins with limited transfers of risk through sharing a proportion of savings (and potentially losses), as happened in North West London (*Case Study 4*).

For an example of success in the payments component, it is worth looking at the Valencia region of Spain (see *Case Study 3*). Here the Ribera Salud group has succeeded in aligning the interests of all parties involved – of payers and providers through capitated payments, of clinicians through performance bonuses, and of patients through a model that empowers patient choice. High-quality care is assured by imposing strict standards on providers and by monitoring clinicians' performance transparently. The result: Ribera Salud has simultaneously achieved cost savings of approximately 25 percent and recorded a significant boost in outcomes and patient experience.

Provider incentives can be substantially reinforced with aligned changes in patient incentives; for example, patients might be offered reduced insurance premiums in return for participating in health-promoting activities. Discovery Health in South Africa is a case in point. It operates a graduated patient-incentive model called Vitality: participants who reach specified milestones – submitting an online assessment, for example, or regularly attending the gym – automatically accumulate points and rise from Blue level status to Bronze, Silver, Gold, and Diamond levels. Members receive discounts on items such as healthy groceries and exercise kits, and may exchange points for rewards, ranging from cinema tickets to travel vouchers. In the US, value-based insurance design reforms and tiered benefits link patient incentives to value. Patients are mostly offered incentives – financial or non-financial – to engage in health-promoting initiatives. In some cases, the incentives relate directly to patient outcomes, such as improved blood pressure or diabetes control, but initiatives of this kind have attracted some controversy.

(v) Co-ordinated delivery. Many healthcare reforms have been attempted, but few have truly succeeded in closing the quality and efficiency gaps. *Reforming care delivery is difficult*. The first four components of accountable care, however, create a framework for providers to work together to achieve a difficult shared goal or goals, and provide resources that would otherwise not be available for tracking patients, monitoring outcomes and incentivizing collaboration.

In an accountable care system, the overall accountability for the population's care resides with a *group* of physicians and other caregivers rather than with any one physician or caregiver. Different systems have different starting points. Co-ordinating care across a group of caregivers is more complicated in some cases than in others: it depends on the nature both of the providers and of the healthcare market. Where single-provider integrated-delivery systems exist, such as Kaiser Permanente, Geisinger Health System (*Case Study 2*), and ThedaCare (*Case Study 5*), co-ordination is facilitated through a common language and straightforward sharing of data between practitioners. It is not necessary, however, for all members of the group of providers to belong to a single organization: independent providers can co-ordinate very well, particularly when the market is favorable and provided that there is willingness and commitment from the organizations' leadership. Independent providers seeking to provide accountable care must formally agree their ways of collaborating, in order to attain overall outcome targets. A good example is that of North West London (*Case Study 4*). The stronger the competition in the market is, and the wider the range of providers, the harder it will be to create frameworks and governance structures that encourage collaboration, and the more important leadership becomes. So, outside of single-provider networks, it might in some cases be best to take a gradual approach to broadening the scope of provision: begin by including just primary and secondary care, and only later expand to social and behavioral care, as AIC in Singapore did (*Case Study 1*).

Care delivery is usually co-ordinated in two ways: through agreed evidence-based care pathways and procedures, and through regular person-to-person communication via formal meetings and informal conversations. Since reimbursement is linked to patient outcomes, much importance is given to innovation of care pathways across providers. Likewise to information systems, since they play such a central role in clinically integrating care from different providers and practitioners. The optimum approach varies according to circumstances: North West London (*Case Study 4*) relies heavily on regular formal meetings between practitioners, whereas single-provider integrated networks, such as Geisinger (*Case Study 2*), often operate a more automated process co-ordinated by a universal and fully integrated information system. The most successful provider groups have instant and easy access to patient data, and an agreed method of managing each patient's care pathway. Delegation is maximized, to exploit the capability and capacity of each team member – all roles should act at the top of their licenses, an idea pioneered at integrated delivery systems such as Geisinger (*Case Study 2*) and ThedaCare (*Case Study 5*). Whatever approach is taken towards enhanced care co-ordination, one crucial requirement applies – strong and consistent leadership, committed to the culture change and day-to-day effort.

In successful accountable care systems, the co-ordination of care is a process in which the patient too is an active participant. Provider culture adapts to encourage and empower patients to contribute more to managing their own care and overall

well-being; for example, through the mutually agreed care plans between doctors and patients in North West London (*Case Study 4*). A natural way of empowering patients is to push more care towards the community, for instance to primary-care providers, where individual patients typically have more control over care delivery than they do when the care is provided farther “downstream.” A good mantra, exemplified by the Agency for Integrated Care in Singapore (*Case Study 1*), is that care should be provided in the community *where possible*, and only provided in hospital *when needed*. Similarly, patients should be given the tools, education and confidence to manage their own care *where possible*, and should only hand over their care to clinicians *when needed*. Of course, provision must ideally be made for including and integrating social and behavioral care – such care is crucial for many populations, particularly the elderly and those managing long-term conditions (*Case Studies 1, 4 and 5*).

Two contrasting examples illustrate the successful co-ordination of care (see *Case Studies 4 and 5*). The Integrated Care Pilot, based in London, involves multiple independent providers working together through voluntary agreement to co-ordinate the care of patients either with diabetes or aged over 75. Conversely, ThedaCare, based in Wisconsin, is a single integrated health provider. Although structurally very different, these two organizations suggest that *clinical* integration across the full spectrum of care, rather than formal legal amalgamation, is the key ingredient in effective care co-ordination.

There are numerous other imaginative examples of co-ordinated care delivery in action, in many cases going beyond the confines of a traditional caregiver group. A common theme is the re-allocation of resources away from the hospital (and ultimately to the *patients themselves*) to focus on the outcomes that matter and to boost productivity.

The Community Health Worker (CHW) program in Brazil demonstrates the impact of pushing care “upstream,” back into the community. CHWs are local recruits, trained in basic health promotion, who take over some responsibilities from the medical personnel in the area. As part of the country’s Family Health Strategy, CHWs are active “on the road,” and provide support directly to local households for basic procedures such as breastfeeding, immunization and screening uptake, chronic-disease management, sexual health, lifestyle, and nutrition. After additional training, they can also run community-based health-education groups for hypertension and diabetes sufferers, for groups of the elderly, for women, and for those seeking community therapy. This community engagement and empowerment approach has proved its worth, significantly reducing hospitalizations for chronic-disease sufferers and reducing infant-mortality rates from 50 per 1000 live births to just 29.²⁷

A second example of pushing resources to the community comes from the UK.¹⁴ In some areas, Marie Curie nurses complement local GPs by providing hands-on care and emotional support in the community to patients requiring palliative care. Their services include discharge support, to assist patients in the transition out of hospital, and an “urgent” response service, as a credible alternative to superfluous Accident and Emergency (A&E) visits. In locations where the program is active, the number of patients able to die at home rather than in hospital has more than doubled; and only 8 percent of patients have attended A&E, compared with 29 percent elsewhere.

Finally, consider the example of self-care dialysis in Sweden.²² It shows tellingly how patients can play an active part in defining and delivering their own care when resources are re-allocated to allow it. In this example, treatment is for a chronic condition, and a patient-defined target outcome is simply *more control over the management* of a disease. In 2005, the procedure was pioneered at Ryhov hospital in Jönköping, when a nurse championed a patient's desire to take a more active role in his frequent dialysis treatment. After some specialized training, the patient was able to administer his own treatment, initially within the confines of the hospital but subsequently at home. This re-direction of resources to support self-dialysis freed up clinicians' time (as well as a hospital bed, when the treatment took place at home), and it showed how helpful it is for patients to take responsibility for their own care. More and more patients have subsequently enrolled in the self-care scheme, and the figure at Ryhov now stands at about 60 percent. Evaluations have vindicated the policy's effectiveness in improving outcomes: self-care patients suffer from fewer side effects, miss fewer treatment sessions, and register lower infection rates.

MAPPING THE TRANSITION TO ACCOUNTABLE CARE

The transition from an activity-based system to a system based on outcomes, from fee-for-service payments to a capitated model, and from limited data sharing to full transparency, is really a fundamental transformation. Adopting accountable care requires a rich understanding of data, the development of new capabilities and forms of collaboration, and the reconfiguration of markets, payments, and organizational culture. Many of the optimal features of accountable care are still being established, with the longest-standing examples of success coming from single integrated systems, such as Kaiser Permanente and Geisinger Health System; these organizations face fewer barriers than systems of independent providers, which are still learning important lessons.

A key attribute of accountable care, seen across the global evidence base, is its *progressive* nature. Groups of providers who have adopted accountable care models have benefited from successes and failures alike, by continuously incorporating lessons learned and gradually building up shared trust, greater data transparency, and new technical capabilities for better patient-level care. This progressive journey can be mapped for each of the five functional components of accountable care in five broad levels – ranging from the adoption of basic accountable care prerequisites ('level 1') through to the "target end-state" outlined in the section above ('level 5').

We have formalized this journey in the *accountable care maturity progression table*, shown in *Figure 5*. The sequence within each category is important, as each level depends and builds on its predecessors: to reach level 4, for example, an accountable care system must also have reached levels 1, 2, and 3. We have ranked our selected case studies on the maturity scale (*Case Studies 1–5*). The maturity table enables payers and providers to assess their own healthcare systems against the five accountable care components, and thus identify the improvements still needed for reaching the target end-state.

Figure 5: Maturity progression table for population-based accountable care

	i Population	ii Outcomes	iii Metrics and learning	iv Payments and incentives	v Co-ordinated delivery
5 ↑	Intersections accounted for (ie, co-morbidities)	Outcomes that matter to people ; prioritized based on individual goals	Aggregated longitudinal data made public in cross-provider consistent format	Full capitation with guard rails on quality; differential payments for outcomes	Clinical and data integration of provider network ; patients co-design care
4 ↑	At-risk individuals identified, using all available sources	Focus on prevention and wellness ; goals adjusted based on patient risk level	Results shared with people in usable form; monitoring built into clinical work flow	Upside and downside shared savings; strong professional competition	Patients empowered to self-care; care plan and managed transitions
3 ↑	Registry of population integrated with EHR	Comparable with other providers and aligned with global best practice	Real-time and summary learning; results shared with payer and clinicians	Upside-only shared savings and risk for whole health; bonuses to staff	Clinicians empowered to adjust interventions to improve outcomes
2 ↑	Defined population (eg, morbidity, age, geography, payer)	Incorporation of patient experience into targets	Leading clinical indicators with evidence link to outcomes	Bundled payments with quality controls for episodes of care	Multi-disciplinary meetings ; all team members used to maximum potential
1 ↑	Holistic view of existing funding and providers	Basic clinical outcomes decided at local level	Admin-based measures; limited transparency; summary evaluation only	Pay-for-performance bonuses on top of fee-for-service or block payments	Basic electronic data-sharing across providers
0	No identified population	No target outcomes	No metrics nor learning	Payments for activity only	Uncoordinated provision of elements of care

The “payments and incentives” component illustrates this progressive journey clearly. Many legacy healthcare systems are based on a fee-for-service model, in which the provision of elements of care, rather than the achievement of outcomes, is rewarded – thereby potentially incentivizing over-treatment and high re-admission rates, for example. One progressive step to addressing these perverse incentives is to move to a bundled payment structure, in which providers are remunerated with a single lump sum for treating an entire distinct episode per patient (‘level 2’). In that way, the cost and quality of care for a given episode are now controlled. However, there is still no incentive to decrease the total number of episodes for a population of patients (or, in other words, to increase the population’s *wellness*). Note that the move towards bundled payments can be prompted in two different ways: it can be a specific reform within an accountable care reform program, and would eventually be incorporated into a population-based accountable care system, but it can also be a reform made

independently of, or in parallel with, an accountable care program, simply as part of a wider effort to move the system away from activity-based payments. This latter approach is particularly valuable for certain aspects of care, such as maternity and elective surgery, since these might not form part of nascent accountable systems, and may even remain as independent bundles in the long-term.

In moving to a population-based accountable care system covering whole health, a payment system is needed that not only gets specific aspects and types of care right (as in bundling), but also gets the care to the right people, and where possible prevents episodes from happening in the first place. One approach to achieving this is to establish cost benchmarks for providing accountable care to an entire population (that is, for all episodes over a time period), and to share a proportion of any cost savings (based on a comparison with the agreed benchmarks, made at the end of the time period) between payer and provider ('level 3'). These shared savings are often (at least initially) built on top of existing financial arrangements. Providers are now clearly motivated to decrease not only the cost-per-episode but also the total number of episodes. To maximize provider commitment, the trick is to gradually adopt two-way incentives or risk-sharing approaches: both downside risk and upside savings are shared by payer and provider when their spending goes above or below the agreed benchmark ('level 4'). In a final step, payers can arrange to compensate providers on a capitated basis (achieving the same result as a shared-savings model but with complete risk transfer), by agreeing a fee per "average" patient per month or year ('level 5') – that is, irrespective of how many times any one patient is admitted and regardless of the actual cost of treatment per admission.

Since all systems start from different funding positions, the eventual state of any large healthcare system is likely to include mixed-payment models: whole-person accountable care, with a variety of risk-sharing arrangements, for some populations; bundled payments in parallel for some confined areas of care such as maternity and certain elective surgeries; and some remaining fee-for-service payments with performance incentives – ideally bundled together wherever possible.

In essence, the accountable care journey is a methodical one. The starting point is (fee-for-service) payments made for individual services that are provided to individual patients. And the destination is (shared-savings and capitated) payments for packages of services provided to populations. En route, a complementary and more limited reimbursement option is available: that of bundled payments for packages of services that are provided to individual patients. This arrangement could continue independently for certain episodes, and would remain valuable, even when a full accountable care system is eventually established. As the journey proceeds, the concern is that each new payment model (bundled, shared-savings, or capitated) will give providers an extra incentive to skimp on services or avoid higher-risk patients. To pre-empt this, the planners will incorporate a layer of quality-control metrics and outcome targets within all these payment reforms, so that payments are dependent on simultaneous improvements in quality and reductions in costs.²⁸

A contemporary example of the progression through this payments journey comes from Ghana. Until a decade ago, Ghana's healthcare system primarily operated under a so-called "Cash and Carry" arrangement – most patients lacked health

insurance, and had to pay “up-front” for any treatments. In 2003, the National Health Insurance Scheme (NHIS) was introduced to provide healthcare cover for all citizens. Through taxation (and a yearly premium payment for some), Ghanaians are fully insured against most medical needs. As the Cash and Carry system changed into this formal insurance market, it made sense for the program to initially reimburse providers entirely through a fee-for-service payment model, with each element of care individually priced. Not surprisingly, however, this fee-for-service model was soon associated with rising costs. Accordingly, five years later, in 2008, Ghana introduced bundled payments through Disease Related Groups (G-DRGs), where related diagnoses are grouped together and an average cost of treatment is charged for most episodes of care, apart from drugs. Using extensive data collection, these G-DRGs have been gradually optimized over subsequent years. In 2012, finally, in a further step through the maturity scale, the country began piloting a capitated payment model for primary and outpatient care in order to control costs further. The capitation fee paid to providers will cover primary care, including consultations, basic laboratory services, and medicines for common primary care diagnoses. The model is now being expanded nationwide. Setting the capitation fee at the right level has been a challenge, but lessons are being learned and the value has already been revised. Importantly, to prevent skimping on care, Ghana has increasingly recognized the need to introduce strict controls on quality. As with payment reforms, quality controls and measurement have progressed over time and are still improving. Today the system's features include accreditation of facilities, the freedom for patients to select and change provider, clinical audits, and some monitoring of key public health and utilization indicators. So ten years after the introduction of the NHIS, Ghana has clearly made impressive strides through the payments component of the maturity scale, and now has a mix of capitation for primary care, bundled payments for secondary care, and fee-for-service payments for many medicines.

Case Study 1 – Targeting an aging population at the Agency for Integrated Care (Singapore)

Healthcare requirements increase with age. As global demographics shift towards aging populations, demands on healthcare will escalate sharply. Singapore is a case in point. Where today there are more than eight citizens of working age for every citizen over the age of 65, by 2030 there will be fewer than three. As a result of such longevity, and other changes in lifestyle, the prevalence of chronic conditions is increasing dramatically: for example, diabetes rates have risen by more than 50 percent over the past decade alone. So the long-term care of the elderly has become a national priority.

Historically, long-term care in Singapore has been fragmented. At-risk populations were seldom actively identified and managed, and the result was poor chronic-disease control and high rates of avoidable A&E admissions and re-admissions. Patients had little confidence in care outside of hospitals. In 2008, accordingly, the Singapore Ministry of Health set up the Agency for Integrated Care (AIC) to co-ordinate and deliver long-term care for the entire population, including care for the elderly.²¹

AIC recognized early on that the elderly population consists of patient groups with very different needs, such as those managing chronic conditions in the community and those requiring end-of-life care services. But in the existing care system, segmentation and co-ordination were inadequate. There was little co-ordination for end-of-life care, for example, so hospital re-admissions were unduly high, which imposed strains on the infrastructure, as well as on personal and systemic financing. In response, AIC launched several initiatives to cater for the different patient groups. Among them were the Singapore Integrated Care Program for the Elderly (SPICE) – a center-based community medical home offering comprehensive and co-ordinated care – and Holistic Care for Medically Advanced Patients (HOME), a palliative homecare program. AIC carefully defined eligibility for these programs: for example, HOME covered people with end-stage heart, lung, liver and renal failure (co-morbidities are common). To track all relevant patients, and transition them from hospital into the appropriate long-term community-care program, AIC created Aged Care Transition (ACTION) teams.

The results of these initiatives are striking. ACTION teams have reduced by over 40 percent a patient's chance of being re-admitted to hospital within 30 days of discharge. SPICE has halved the number of A&E visits. Patient experience has improved too: more than 50 percent of SPICE participants reported an improved perception of their own health status after a year on the program; and of those patients who died within one year of HOME's launching, about 70 percent died in their preferred place of death (recently, just 28 percent of people in Singapore had died at home). As for costs, the reduction in hospital re-admissions saves an annual 17,000 hospital days overall, worth more than US\$ 11 million a year.

AIC's initiatives have relied on a national EHR linked to patient registries and a referral system. With the help of these databases and IT tools, ACTION teams have been able to transition patients efficiently into optimal care settings, specifically through managing referrals, identifying high-intensity users, and supplying integrated information for case-management efforts.

Going forward, AIC is expanding its existing programs to cover other segments of the elderly population. It is also launching new initiatives, such as the Family Medicine Clinic and the Primary Care Network models, which incentivize people living with chronic diseases to access optimal care from the country's GP network. Moreover, it is addressing mental health needs in the population more effectively, enhancing various elderly-care institutions, and upgrading the home-based care sector. And in April 2013, AIC acquired jurisdiction over some social care services for the elderly. With its "Home First" maxim, AIC is striving to be an integrated advocate for elderly people, enabling them to continue living in the community as long and as meaningfully as possible.

Population	Outcomes	Metrics and learning	Payments and incentives	Co-ordinated delivery
5	5	3	4	4
Co-morbidities considered Patient registry Defined by morbidity	Focused on what matters to people Wellness viewpoint	Six-monthly evaluations Both clinical and admin measures	Mix of payments, including capitation	Care transition co-ordinators Universal electronic patient records

● Maturity scale score out of 5 ■ Selected example of best practice

Case Study 2 – Establishing outcomes and evaluation metrics at Geisinger Health System (US)

Diabetes mellitus is an increasing scourge across much of the world. In the US, its prevalence rose 40 percent between 2002 and 2010. Equally alarming, perhaps, is the persistently low standard of management of the disease and its complications. Both clinical performance and self-care fall well below expectations and benchmarks. Barely two-thirds of American diabetics, for example, have a hemoglobin A1c check each year, and fewer than one-third control their blood pressure adequately. So too with immunizations, cholesterol control, and other performance indicators.

The traditional approach taken by health providers was to offer diabetes care on an unstructured, opportunistic "walk-in" basis: patients presented and were treated. There was no defined population of at-risk patients, little reliable data on outcomes and care gaps, limited access to best-practice guidelines, and little data-sharing. Unsurprisingly, results were variable, and overall unsatisfactory.

In 2005, the Geisinger Health System in Pennsylvania,²⁹ caring for more than 25,000 patients with diabetes, set about transforming its approach to diabetes care.^{30,31} Geisinger's solution was to redesign care around national guidelines for diabetes management. Evidence suggested that adherence to guidelines on key clinical metrics would lead to improved outcomes that matter to patients, such as reduced risk of cardiovascular disease.

Geisinger began by compiling a list of best-practice guidelines, distilled from a variety of national sources, such as the American Diabetes Association. It turned out that nine of the underlying components – criteria relating to hemoglobin levels, immunizations, smoking status, and so on – could already be tracked through Geisinger’s EHRs. These nine criteria were selected to form an “all-or-none bundle,” on which the new care regimen was to be based. An “all-or-none bundle” is a performance target that is met only when patients satisfy all of the individual criteria. It reflects “ideal” care, and fosters teamwork, as multiple individuals rely on one another to register a success.

Once the performance metric was defined, Geisinger developed a monitoring process to produce real-time and immediately usable data. The performance levels of individual physicians and teams were measured, and were reported monthly and compared against national benchmarks. Caregivers could rapidly identify gaps in care, while the peer and national comparisons would motivate each team to improve its results. So too would a variable salary component:³² up to 20 percent of a clinician’s income would depend on improving all-or-none scores for the patients in his or her care.

Geisinger not only optimized its data, but also re-modelled its care delivery process. The nine criteria were “hard-wired” into clinical care, via various EHR-enabled tools that flag up requirements for completing the full bundle. For example, if a patient currently scores only 7 out of 9, an alert will notify the clinician of the shortfall during the next relevant consultation. In addition, patients can now monitor their own progress with the help of an online portal, and thereby manage their own care more actively.

The new approach has proved very effective.¹¹ Scores on the diabetes bundle began rising impressively, and within three years this rise has translated into dramatically improved end-state outcomes for patients, including reduced risk of retinopathy, stroke, and myocardial infarction.

Underlying Geisinger’s success were two crucial factors. First, there were national frameworks for best-practice diabetes care, which helped in defining evidence-based targets. Second, there were Geisinger’s own data systems and tools, which helped to evaluate patient-level data and integrate it speedily into care delivery. Geisinger is now working to personalize the targets for individual patients; for example, by specifying target HbA1c readings to reflect each patient’s priorities and realistic goals.

Population	Outcomes	Metrics and learning	Payments and incentives	Co-ordinated delivery
4	5	4	3	5
Patient registry integrated with EHR Defined by morbidity	Focused on what matters to patients Aligned with best practice potential	Results published Metrics hard-wired into work flow Leading clinical indicators	Bonuses to all staff Bundled payments	Full clinical and data integration across provider network Optimal use of team

● Maturity scale score out of 5 ■ Selected example of best practice

Case Study 3 – Implementing incentives at Ribera Salud (Spain)

In 1999, the Ribera health district – one of 24 such districts in the Valencia region of Spain – finally acquired its own public hospital and associated services. The new 300-bed hospital, the Hospital de la Ribera in the town of Alzira, is the offspring of a public-private partnership: between the regional government of Valencia and a private healthcare delivery company, Ribera Salud. In 2003, the contract was broadened to include primary care, and the contractor now runs 40 public primary-care centers as well as the hospital itself.²⁰

The Alzira model, as it is called, combines public funding, ownership and control with private healthcare provision. Unlike the region's other providers, which are paid on a fee-for-service basis, Ribera Salud receives an annual capitation fee (an index-linked lump-sum payment for each local resident) from the regional government, and in return it provides the full range of healthcare services for free to all residents of the designated area. As a provider of public healthcare, it is scored against various quality and safety targets from the regional government, covering aspects such as vaccination rates, waiting times, and patient complaints. Poor performance would trigger sanctions and reduce the chances of contract renewal or extension. The company also has an incentive to keep costs down: it retains profits of up to 7.5 percent of turnover, with further profits reverting to the local government.

To ensure high-quality care, Ribera Salud promotes systematized clinical work, pathways and operating procedures; and to that end, it offers incentives in turn to all staff. Base salaries can be boosted by as much as 30 percent through performance bonuses. These bonuses, to encourage both teamwork and individual development, have three components: the performance of the overall company, of one's local team or service, and of the individual. Performance is tracked through Ribera Salud's information system, which also includes universal EHRs. All clinicians can access their own performance scores online, as well as weekly benchmarks against their peers. Although data is not made public, there is a word-of-mouth culture among patients – a further incentive to excel.

In short, the Alzira model involves direct incentives both at provider-level, in the form of capitation payments and retained profits, and at staff-level, through performance-related bonuses (and reputation). And there is another motivating mechanism: patient empowerment and choice. *The money follows the patient.* If a patient within Ribera Salud's catchment areas opts to access a different healthcare provider, Ribera Salud has to pay 100 percent of the costs – costs usually higher than Ribera Salud's own. Conversely, if Ribera Salud treats a patient from another district, it receives only 80 percent of the average regional cost. This asymmetry keeps a balance: the network can profit from attracting more patients, but must still concentrate on patients within its own districts. If the balance is lost, that could affect the company's future negotiating position with the local government.

The Alzira model has certainly produced impressive results, in respect of outcomes, quality, and cost. It has been adopted or adapted elsewhere in Valencia, and now covers about 20 percent of the region. The local government benefits: the capitation cost is barely 75 percent of the cost-per-inhabitant elsewhere in the Valencia region. And patients benefit: compared

with other hospitals in the region, the Alzira-model hospitals typically record far shorter waiting times (half as long for consultant appointments, surgery, or A&E, and about one-eighth as long for scans). Re-admission rates are about one-third lower, and patient-satisfaction levels are about one-fifth higher.

Underlying Ribera Salud's success are two key factors: powerful information capabilities, to monitor physician-level and team-level performance in real-time; and an innovative regulatory framework that places the patient center-stage and provides incentives at multiple levels within the system. Going forward, Ribera Salud is working at the individual-level too, in communities and schools, to engage residents and incentivize them to take a more active role in staying healthy.

Population	Outcomes	Metrics and learning	Payments and incentives	Co-ordinated delivery
5	4	3	5	4
Defined by geography (all residents)	Prevention focus Regionally consistent targets Patient experience	Results shared with clinicians in usable form	Full capitation Bonuses to staff Places value on patient loyalty	Integrated care plan Universal electronic patient record

● Maturity scale score out of 5 ■ Selected example of best practice

Case Studies 4 and 5 – Breaking down barriers between providers

Some single-provider integrated delivery systems, such as Kaiser Permanente, consist of a closed network that spans entire care pathways. But this is just one of many possible approaches. Successful provider networks can be created by a range of voluntary agreements between independent providers. What matters to patients is not the structural organization of the provider group, but the effectiveness of that group in clinically integrating and co-ordinating care delivery.

Case Study 4 – Independent providers working together: NW London Integrated Care Pilot (UK)

Many healthcare systems suffer chronically from fragmentation and lack of care co-ordination between providers. This is common in the UK's National Health Service (NHS), where providers and professionals from many different parts of the health and social care system attempt to provide care for people with increasingly complex health and social care needs.

To address this challenge in North West London (NWL), a clinical transformation pilot was launched in 2011, focusing on two particular populations: the elderly, and patients with diabetes.²⁴ Though comprising only 10 percent of NWL inhabitants, these two populations accounted for 28 percent of healthcare spend in the area. The local providers, rather than merge into a single structurally integrated delivery system, devised a formal agreement to co-ordinate patient care, without forgoing their independence. They agreed to co-ordinate particularly for those people needing assistance across multiple providers and tiers of care. They created a patient registry, segmented the patient population according to risk, and developed best-practice clinical protocols and care packages.

Of central importance was the assembly of multidisciplinary groups (MDGs) of clinicians and social workers from each of the different providers – hospitals, general practice, community care, social care and mental health. In addition to professionals, a Board structure also included patients and the voluntary sector. Through regular MDG meetings, the providers manage care for the most complex patients, who previously had frequent and uncoordinated interactions with many organizations. Care decisions can inform wider treatment protocols. The meetings have produced a far-reaching trickle-down effect, transforming the local practitioner network by creating a culture of regular day-to-day inter-provider interactions.

One effect was a dramatic increase in trust, co-ordination, and collaboration – and the demystification of roles. The MDGs enabled clinicians, especially GPs, to share ideas of best-practice care with a wider group. The pilot impressed healthcare professionals greatly, with about 75 percent of them reporting a boost to their professional knowledge and to their understanding of the services that other organizations could offer. A particularly well-regarded factor was the inclusion of mental health and social care workers and the voluntary sector within the program. Overall, the MDGs helped to reveal the best role for each provider in a given case, and the best timing for his or her participation.

Initial findings show that patients who get an individualized care plan through the pilot have better access to NHS services, and save time – they can now book appointments faster, and they no longer have to repeat their medical history so much during the appointments themselves. In response to such successes, policy-makers are expanding the program to surrounding areas.

The improved co-ordination of care in NWL has been accelerated through ongoing training aimed at promoting a common language between hospital clinicians, GPs, social care, and mental health. Programs for frontline

staff are focusing on explaining the big picture of the Integrated Care Pilot, simulating MDG case conferences (where attendees can experience playing roles other than their own), and conducting sequential simulations that follow the patient through the journey of care.

Population	Outcomes	Metrics and learning	Payments and incentives	Co-ordinated delivery
5	4	3	3	4
Co-morbidities considered Patient registry Defined by age	Risk-stratified targets Wellness viewpoint Patient experience	Leading clinical indicators Ongoing learning and adaption	Upside-only shared savings	Integrated care plan Multi-disciplinary meetings Some data integration

● Maturity scale score out of 5 ■ Selected example of best practice

Case Study 5 – A single structurally integrated provider: ThedaCare (Wisconsin, US)

Organizational integration is no guarantee of effective clinical integration. A decade ago, ThedaCare – with four hospitals, numerous physicians, and behavioral health and other professionals – was facing similar problems to many smaller-scale providers: rising costs and stagnant quality. Today, the group has transformed itself, and is implementing healthcare reforms aimed at improving value. Among these reforms are a new payment system to reward value-creation for patients, and a set of collaborations to improve transparency across the patient, provider, employer, insurer, and government communities.¹⁹

ThedaCare adopted the principles and philosophy of LEAN management, emphasizing continual improvement of process flow. One noteworthy reform was the introduction of ThedaCare Collaborative Care Units.¹⁹ This initiative aimed to redesign inpatient care by prioritizing those elements of the care pathway that added most value to patient experience, and de-prioritizing those steps identified as adding minimal value.

Interdisciplinary teams were established, and assigned to meet with patients immediately on admission. Each team consists of a physician, a nurse, a care manager, and a pharmacist. From Day One, the team works with the patient to create a single, tailor-made and authoritative care plan – in stark contrast to the widespread old time-wasting practice, where individual members of a care team would create multiple (often contradictory) care plans for a patient. The team then meets each day with the patient in a bedside care conference: here the nurse is accountable for monitoring the progress of the plan against agreed care guidelines, employing ThedaCare's EHR, and makes

recommendations to the other team members if any barriers to successful recovery are identified. The pharmacist takes part in the daily rounds, and is held accountable for the patient's medication-related outcomes. The pharmacist has complete information on the care process, and can influence medication decisions at the point of prescription. The system makes a point of integrating social care as well. Within 90 minutes of admission, a social carer meets with and assesses every patient, and arranges further assessments, home visits, and ongoing support as required.

Unsurprisingly, the care delivered under the scheme is widely appreciated by the patients themselves. Patient-satisfaction scores have soared (95 percent of patients now give their care a 5/5 rating, compared with 68 percent before the launch of the Collaborative Care Units). Nurses comply strictly with care protocols, in part because their work is tracked. As a result, the average length of admissions has fallen by 17 percent. Furthermore, there is now much less duplication of work by members of the provider network, and as a result, the costs of direct and indirect inpatient care have fallen by 25 percent.

Thanks to these and other changes in care delivery, the ACO of which ThedaCare is a member has proved to be the highest performing of the ACOs in the CMS Pioneer program in the US. The ACO recorded the lowest annual adjusted total per-capita cost of care, and ranked second overall on quality-of-care measures among the 32 participating ACOs.

ThedaCare's success is underpinned by a policy of improving the competencies of the workforce, to enable each staff member to work to his or her maximum potential. In particular, nurse practitioners are expected to excel in monitoring care progress, and pharmacists in making medication decisions. These approaches have involved new schemes for training and development, in addition to an on-the-ground cultural shift towards maximizing the value of each employee. A further vital contribution has been made by ThedaCare's information systems and tools, with its universal EHR forming the foundation of care planning and management.

Population	Outcomes	Metrics and learning	Payments and incentives	Co-ordinated delivery
4	5	4	4	5
Patient registry Defined by payer (opt-in)	Focus on what matters to patient Preventative viewpoint Patient experience	Results published in usable form Ongoing process improvement	Upside and downside shared savings	Full clinical and data integration across provider network Optimal use of team

● Maturity scale score out of 5 ■ Selected example of best practice

THE POLICY-MAKERS' AGENDA

ADAPTING TO YOUR SITUATION

Implementing accountable care requires multiple steps, which will vary according to your specific starting point. The challenge is a complex one, as illustrated by the five components in our functional definition (*Figure 2*) and the corresponding maturity progression table (*Figure 5*). But not everything has to be done at once, and everyone can identify actions that can start them along the path to accountable care today.

In setting realistic goals and creating an action plan, policy-makers must recognize their unique local circumstances and tailor their approach accordingly. Priorities and opportunities will differ from country to country. Consider the different priorities of two contrasting healthcare systems – one that is predominantly private, and based on an uncapped fee-for-service model; and the other, a public, tax-funded, capped-budget system. The former system would likely direct much of its reforming energy at shifting payments *away* from fee-for-service incentives for volume and intensity, and *towards* payments that depend, at least in part, on improved quality and *reduced* overall costs (for example, shared savings or shared risk). For the latter system, by contrast, financial incentives are often less of an issue, and may be less guilty of causing rising costs. Having said that, many single-payer systems have siloed payments, so reforms that align some of these payments to improved results *across traditional funding streams* may help drive further improvements in quality. A stronger emphasis is likely to be on non-financial incentives, such as reputation (and for that purpose, some of the reforming energy would have to go into ensuring data transparency).

In short, countries will differ in the way they *perceive* and rank the five components of accountable care. But they will also differ in their opportunities and ability to *act* on and affect each component, and that too will influence their route forward. Consider again the contrast between privately and publicly funded systems. In the latter, the payers (governments) make the policy, and control many of the levers of change. But these systems (such as the NHS in the UK, or AIC in Singapore) could face *indirect* challenges to their attempts to improve quality and efficiency: cultural challenges, financial challenges, and challenges of scale. By contrast, in systems that are predominantly privately-funded (such as Geisinger or ThedaCare in the US), the policy-makers (governments) are not the payers, and so tend to have limited direct control over healthcare delivery. What they can do, perhaps, is to lead by example (provided that some public payment or provision happens to exist within the system). The government can, for instance, use public programs to promote transparency and data exchange, and can set standard performance outcomes and measures; and with luck, the private sector will then follow suit. In addition, the government can accelerate change by means of regulation; for example, by enforcing public reporting, the policy-makers could promote competition on value across the private sector and facilitate adoption of payment reforms.

In addition to funding and provision mechanisms, there is likely to be a range of other unique local circumstances that policy-makers will need to take into account: the residual power of the legacy model, the overall size and fragmentation of the current healthcare system, the heterogeneity of the population, the penetration of technology, the nation's economic prospects, and so on. By understanding these unique local circumstances, and the priorities and opportunities that these create, policy-makers can best decide where to start. One thing is common to all healthcare systems, however: they are all capable of taking steps to focus accountability on delivering better care at lower costs than they do now, so there is work to be done.

MAKING ACCOUNTABLE CARE A REALITY

Ideally, healthcare systems will progress through the maturity scale for each of the five *functional components* of accountable care (*Figure 5*). To facilitate that progress, we have drawn lessons from our case studies (*Case Studies 1–5*), and distilled four high-level policy recommendations:

- **Take a broader perspective than illness.**
- **Start to pay for outcomes.**
- **Create a favorable environment for organizations to collaborate.**
- **Encourage inter-operable data systems.**

For each of these recommendations, we explain the overarching intent and describe concrete actions that policy-makers can start to deliver incrementally. By way of reassurance and encouragement, we cite various examples of relevant initiatives from around the world.

Take a broader perspective than illness

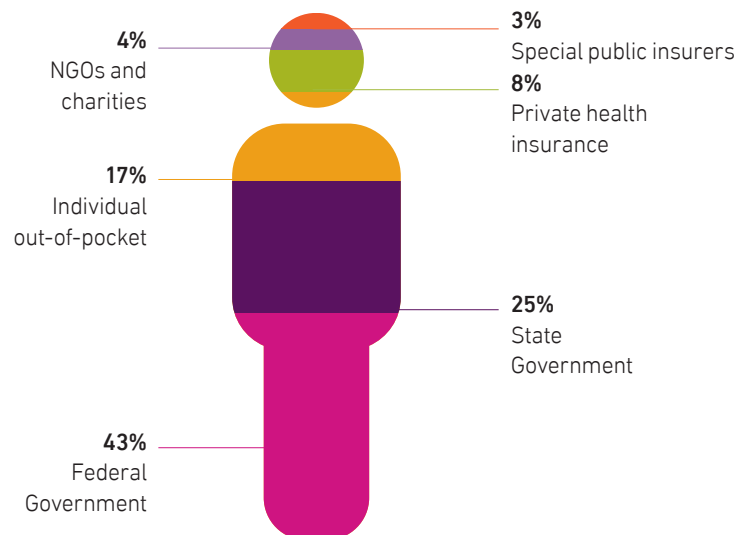
Implementing accountable care involves a set of fundamental shifts: from a supply-led to a demand-driven approach, from a focus on activity to a focus on outcomes, and from a provider-oriented to a customer-centric model. In each case, the idea is to re-allocate resources in order to address patient and population health issues more directly. All of these shifts have far-reaching consequences for policy-makers. Delivering outcomes that matter will require policy-makers to expand their scope to encompass “the whole of health.” They will have to work across traditional funding streams, to focus resources on the highest-value interventions; they will have to agree on key outcomes that matter most to patients; they will have to push for transparency of reporting. It will take time; it will be a journey. So policy-makers should start now, refining as they go. Here are some of the key steps that they can take:

- **Stop focusing solely on illness.** For policy-makers, the priority is no longer only on providing medical treatments for illness, but also on co-ordinating treatments and improving population health and wellness. When the aim of a healthcare system was merely to treat illness, then the emphasis was on the supply of fragmented treatments and activities. But now that the aim is to improve health, a much broader perspective opens up. To address all aspects of health, policy-makers must extend their interest and influence to cover primary, secondary, social, and behavioral care, as well

as preventive and public health. Policy-makers worldwide are starting to do just that. Some governments are ahead of others; in Singapore, for example, the AIC (*Case Study 1*) takes a holistic approach to improving the health of those with long-term conditions – carefully identifying gaps in care, making reforms, and monitoring outcomes.

- Identify where you can make a difference.** To re-focus onto outcomes for health and wellness, you need an entirely different toolkit – one that offers a much richer view, and attends to the “whole person” and to populations. The trouble is, most countries have multiple payers, providers, and provider-focused payment systems, each committed to its own narrowly defined responsibilities – private and public, local and national, primary and secondary care, social and behavioral support. Even the largest providers tend to supply only a fraction of the total care that a patient receives. Data is at the provider-level, not the patient-level. So policy-makers have limited information, and that means that they cannot easily identify shortfalls in outcomes. They should begin by taking steps to assemble the person-level datasets that provide a holistic view of health. (This might mean incentivizing providers to share their data.) Australia offers a helpful model: every citizen there has multiple healthcare entitlements, each capturing only part of the patient’s health (*Figure 6*). By connecting and interrogating datasets from multiple payers and providers, the State of Victoria has managed to put together a holistic picture of the population’s health needs, utilization and outcomes. With this system-wide view, the policy-makers can more easily identify the drivers of poor outcomes in population segments, including behavioral and social risk factors, and can redirect resources to improve them.

Figure 6: Building a holistic view of the whole person across funding streams in Victoria, Australia



- Establish key outcomes for populations.** One of the central organizing principles of accountable care is that of “outcomes for populations.” Drawing on global best practice, policy-makers must seek consensus and comparable specifications across payers and providers on the key outcomes and metrics that will be used to measure success for different populations. They can most readily achieve

this by taking advantage of existing registries, audits, and expert groups. One promising strategy is to link up with emerging international outcomes frameworks – ICHOM,²⁶ for example, which publishes outcome metrics for a growing range of conditions, all created through collaborations between expert clinicians and patients. A national-level alternative is to endorse work carried out by other expert groups: witness Geisinger's use of the American Diabetes Association's guidelines in the US (*Case Study 2*). The outcome measures should always be comprehensive but not overburdening. The Centers for Medicare & Medicaid Services in the US, for instance, consulted providers before finalizing the targets for their Shared Savings ACOs, and responded to feedback by reducing the number of metrics to a more manageable total. As a mark of their success, these measures have been widely adopted in private sector ACOs.

- **Increase the transparency and frequency of reporting.** With so much money being spent on healthcare, policy-makers should know what improvements in outcomes we are getting in return. For that to happen, we need better reporting. But better reporting will have other benefits too. If providers are required to report their performance levels more transparently, that will catalyze professional competition; and if the reporting has to be done more frequently, that will help payers and providers to quickly identify and react to changing trends in outcomes. So improved standards of reporting will benefit both the payer and the public, and engage everyone in focusing on outcomes. Results should be published in a reader-friendly form, so that patients can understand them; that will enable the public, as well as payers, to engage with the quality of care being delivered. Some progress has been made: in the US, for example, ThedaCare (*Case Study 5*) is a member of the Wisconsin Collaborative for Healthcare Quality, a group of providers that voluntarily publishes standardized performance results. The hospital system Narayana Hrudayalaya in India has also begun to make outcomes and cost data transparent, in order to promote professional competition and attract patients. And the China Rural Health Initiative has begun to pilot a chronic disease management intervention to promote the use of preventive services. The program tracks eight process performance measures that are reported periodically to providers and are used to reward village doctors for improved performance.²⁵ More ambitiously, policy-makers can bring longitudinal patient-level data into the public domain by creating public registries that track individual interventions and outcomes. The obvious model here is that of the public quality registries in Sweden: these have the effect of creating keen professional rivalry to drive up quality, while at the same time providing a resource from which to pinpoint the optimal interventions for various conditions.

Start to pay for outcomes

While increasing transparency on outcomes will help to stimulate professional competition and raise performance levels, adjusting payment mechanisms to reward delivery of outcomes is an important, and in many markets essential, catalyst for change. This adjustment can best be done incrementally: the new policies would gradually reduce the fixed payment silos in public systems, and transition away from fee-for-service payment models in private markets.

- **Align financing with the outcomes that matter.** Policy-makers should start to re-direct resources, on the basis of a holistic view of current spending and shortfalls in the outcomes delivered. The aim is to roll out payment models that reward outcomes; it might make sense to begin by applying episode-based models to existing systems, especially for elective or isolated episodes, before launching population-based approaches. Produce model contracts for different population sizes, compositions, and timeframes, along with guidance for risk adjustments and stop-loss mechanisms for small populations. Larger populations will require less sophisticated risk-management than smaller ones; longer contracts allow greater investment in prevention. Produce different payment models too, with increasing levels of risk-sharing (pay-for-performance, shared savings, capitation): these models must recognize the need to trial and improve the quality of evaluation data and appreciate the time taken for both payers and providers to build risk-management capabilities. In all cases, it is crucial to build into contracts various checks to ensure high-quality care. An example of this type of payment reform is the US 2010 Patient Protection and Affordable Care Act, which gave the Secretary of Health and Human Services powers to trial different payment models in Medicare, and led to the launch of the Medicare Pioneer, Shared Savings and Advance payment schemes for ACOs. In parallel, the Centers for Medicare & Medicaid Services also began trialing a range of bundled-payment models. Private payers and providers should be free to experiment with different models too, and policy-makers should not be afraid to copy successful models – including those from the private sector.

Create a favorable environment for organizations to collaborate

For accountable care reforms to succeed in producing more co-ordinated care, they need to develop within a favorable environment – one that allows providers to collaborate in efforts to deliver better outcomes. For policy-makers, this could mean adjusting the rules on competition and data sharing, providing collaboration models, and reinforcing the overall objectives to ensure continuing stability within the system. To do all this, policy-makers should leverage the existing strengths within their systems: notably, strong leadership and promising capabilities. These strengths will lie in different tiers of the health system in different countries. Finally, since we don't yet know all the answers, the environment should be one that facilitates learning.

- **Build on strong leadership.** Accountable care involves fundamental transformations, not just in perspectives but also in organization and ways of working. Proactive leadership is key for policy-makers here, just as it is for providers and payers: it can help greatly to change expectations and culture, and sharpen the focus on value for the whole patient. Which organizations are most likely to lead this change? It depends on the healthcare system. In public systems such as that of the UK, general practice or community care are perhaps the strongest candidates; in contrast, in private markets such as that of the US, hospital systems as well as physician groups might take the lead. Governments and policy-makers have a critical role too, of course: they have to implement policy reforms that support the leader organizations; publicize achievements; provide resources by reforming payments; and encourage other providers to take on a reforming role too. In the UK, for instance, policy-makers have recently announced plans to pair

managers from strong-performing hospitals with their counterparts in weaker hospitals.

- **Reform regulation to promote collaboration.** Accountable care creates a new type of competition and collaboration – based on outcomes – and goes some way to resolving the traditional conflict between them. When policy-makers pay for outcomes, groups of providers have to collaborate if they are to deliver health for populations. To create this new collaborative environment, policy-makers will need to reform anti-trust and data sharing regulations, to allow providers to work together. Current regulatory systems based on structural or process requirements will need to transition towards regulation based on outcomes, but the flexibility in allowing new collaborations must be accompanied by higher expectations of quality and cost improvements. Transparency plays a key role here: when transparent reporting is enforced, providers will be held to account and will have to compete on the outcomes that they deliver. To encourage longer-term collaborations, policy-makers must also lay out a clear and stable path towards accountable care which reinforces the overall objectives.
- **Create a closed feedback loop of assessment and learning.** Implementing accountable care is difficult enough, owing to the necessary advances in perspectives, payments, and capabilities, but it is made even more difficult in that the optimal strategies are sometimes not yet known. Hence the need for continuous assessment, learning, and course correction – and an environment conducive to them. Policy-makers must support such an environment. In the US, the CMS Innovation Center includes a Rapid Cycle Evaluation Group,³³ which provides external program-evaluation support to pilots and new implementations. By monitoring progress in real-time, this group can highlight problems and suggest course corrections as the pilots develop, and thereby funnel programs towards the best strategies. Private payers have their own systems in place: Geisinger (*Case Study 2*), for instance, through its rapid-cycle innovation model, has pioneered high-frequency, real-time reporting of data across providers, payers, and patients.

Encourage inter-operable data systems

In a supply-led model of healthcare, it is not surprising that different providers hold their own data, according to the separate elements of care that they provide. Any given patient might have multiple unlinked records. There is little motivation for compatibility or exchange of data between different providers, or even within a single provider organization. That will change, as healthcare shifts to a more consumer-led, demand-driven model. Just as perspectives and payments will change in order to serve the health of the “whole person,” so too will data systems. They will have to switch from an isolated, provider-level model to one where networks of providers can access information at the level of the whole person, rather than at the level of the individual provider. To enable this transformation, policy-makers should implement common reporting standards, and strive to balance privacy with the need for providers and patients to share and access data.

- **Require common reporting standards.** Many successful examples of accountable care rely on inter-operable data systems, including a universal patient record and associated tools that can be accessed by multiple providers. This infrastructure often integrates decision support, performance sensors, and notifications directly into the clinical work flow, to nudge care in the right direction. When these systems link with public reporting and registries, they provide the data transparency that can make accountable care particularly effective. Policy-makers should give strong backing to the development and adoption of electronic health records (EHRs) that are accessible to multiple providers. They can do this in one of two ways: by sponsoring a national EHR system, or by subsidizing and encouraging inter-operable local records that use standard protocols, such as those endorsed by Integrating the Healthcare Enterprise (IHE). In parallel, policy-makers should promote inter-operability by requiring common measuring and reporting standards for outcomes. By standardizing the data to be reported, they make it more attractive for providers to introduce consistent and linked data systems across their networks. Some state healthcare insurance exchanges in the US, for example, now require standardized quality measures to be reported for the insurance sold through them, while other states have introduced blanket standardized reporting requirements.
- **Balance data-sharing and privacy for providers and patients.** When multiple providers are working together to deliver overall outcomes (rather than working individually, on isolated elements of care), they will need to share data, while maintaining adequate levels of data security and privacy for the patient. For policy-makers to strike this balance, they must clarify and regulate the rights of different healthcare organizations to access and share health data. These policies should also empower and engage patients: give patients ownership over their medical records, and make it easier to assemble person-level records (while protecting privacy and promoting patient control). For examples of such progressive policies, consider the “meaningful use” requirements (and incentives) for standardized data-sharing in the US, and the promotion of Personally Controlled EHRs (PCEHRs) in Australia.³⁴

SEIZING THE MOMENT: SHARING EXPERIENCES FOR THE FUTURE

Many accountable care reforms around the world are in their early stages, and involve a broad variety of healthcare organizations, populations, and starting points. So we have only limited evidence on what drives sustainable improvements in accountable care, but this evidence is accumulating rapidly. Early examples of accountable care are promising, and provide opportunities to learn lessons for the future. This paper is a first step in collecting such lessons from across the world, but now may be an ideal time for a more concerted and on-going initiative to share global experiences and implications of implementing accountable care. The framework developed in this paper provides a basis for sharing and learning from a wide range of experiences, in order to jointly identify best practices for achieving health improvements and overall cost reductions.

GETTING STARTED: TOMORROW'S CHECKLIST

Take note of our maturity progression table (Figure 5) and the list of policy actions above. They provide a reference for all policy-makers – those from high-, middle-, and low-income nations alike. Every healthcare system will begin from unique circumstances, and will have to put in place its own action plan; but almost all of them can adopt or adapt the framework used in this paper, as a means to transition from a supply-led to a demand-driven healthcare system.

The question is: what can you do right away to get started on the journey? The following checklist offers some ideas (Figure 7).

Figure 7: What can you do tomorrow to begin the journey from a supply-led system to a demand-driven accountable care system?

- ✓ **Ensure that you have established a compelling case and vision for change** – build consensus that the current supply-led systems are unsustainable, and inspire others with the vision of demand-driven healthcare
 - ✓ **Extend your range of interest and influence so as to encompass all of health**, including primary, secondary, social and behavioral care, as well as preventive and public health
 - ✓ **Make transparent as much of the existing data within your current healthcare system as possible** – start to drive the change towards a focus on outcomes through professional competition
 - ✓ **Interrogate existing data** to create a **holistic view** of spending and outcomes, to identify high-value interventions and **determine where you can best apply episodic and whole-person accountable care**
 - ✓ **Start to define the outcomes that matter for your population at a national level**, and use existing data and reporting to begin to **track and baseline** these outcomes and leading indicators
 - ✓ **Lead by laying out a clear and stable path** towards contracting and paying for outcomes, so that the provider markets can begin to re-organize, form networks, and grow capabilities
 - ✓ **Adjust existing payment models** to start paying for outcomes, by building performance incentives and shared risk and savings on top of existing contracts, and by bundling payments wherever possible
 - ✓ **Assess where you are on the accountable care maturity table**, and install an action plan for growing the necessary capabilities for whole-person accountable care, using our policy recommendations as a guide
 - ✓ **Do not allow limited resources and barriers to stall progress** – everyone can and should commit today to start moving towards more demand-driven healthcare for both episodes and populations
- Where will you start tomorrow?**

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REFERENCES

1. Kaplan J, Kuenen JW, Pykosz M, Larsson S. Alternative payer models show improved health-care value. *BCG Perspectives*. 2013.
2. McClellan M, McKethan AN, Lewis JL, Roski J, Fisher ES. A national strategy to put accountable care into practice. *Health Affairs*. 2010;29(5):982-90.
3. Berwick DM, Nolan TW, Whittington J. The triple aim: care, health, and cost. *Health Affairs*. 2008;27(3):759-69.
4. Ellis P, Sandy LG, Larson AJ, Stevens SL. Wide variation in episode costs within a commercially insured population highlights potential to improve the efficiency of care. *Health Affairs*. 2012;31(9):2084-93.
5. Larsson S, Lawler P, Silverstein MB. From concept to reality: Putting value-based health care into practice in Sweden. *BCG Perspectives*. 2010.
6. Eappen S, Lane BH, Rosenberg B, et al. Relationship between occurrence of surgical complications and hospital finances. *Journal of the American Medical Association*. 2013;309(15):1599-606.
7. Porter M. What is value in health care? *New England Journal of Medicine*. 2010;363:2477-81.
8. Fisher ES, McClellan MB, Safran DG. Building the path to accountable care. *New England Journal of Medicine*. 2011;365(26):2445-7.
9. Singer S, Shortell SM. Implementing Accountable Care Organizations. Ten potential mistakes and how to learn from them. *Journal of the American Medical Association*. 2011;306(7):758-759.
10. Song Z, Safran DG, Landon BE, et al. The "Alternative Quality Contract," based on a global budget, lowered medical spending and improved quality. *Health Affairs*. 2012;31(8):1885-94.
11. Bloom FJ Jr., Graf TR, Steele GD Jr. Improved patient outcomes in 3 years with a system of care for diabetes. *Institute of Medicine*. 2012.
12. Centers for Medicare & Medicaid Services. Pioneer Accountable Care Organizations succeed in improving care, lowering costs. 2013.
13. Silow-Carroll S, Edwards JN. Early adopters of the accountable care model. *Commonwealth Fund*. 2013.
14. Nuffield Trust. Evaluating integrated and community-based care. 2013.
15. Colla CH, Wennberg DE, Meara E, et al. Spending differences associated with the Medicare Physician Group Practice Demonstration. *Journal of the American Medical Association*. 2012;308(10):1015-23.
16. Landon BE, Zaslavsky AM, Saunders RC, et al. Analysis of Medicare Advantage HMOs compared with traditional Medicare shows lower use of many services during 2003-09. *Health Affairs*. 2012;31(12):2609-17.
17. Hildebrandt H, Schulte T, Stunder B. Triple Aim in Kinzigtal, Germany: Improving population health, integrating health care and reducing costs of care – lessons for the UK? *Journal of Integrated Care*. 2012;20(4):205-222.
18. Curry N, Ham C. Clinical and service integration: The route to improved outcomes. *King's Fund*. 2010.
19. Cosgrove D, Fisher M, Gabow P, et al. A CEO checklist for high-value health care. *Institute of Medicine*. 2010.
20. NHS Confederation. The search for low-cost integrated healthcare. *The Alzira model – from the region of Valencia*. 2011.

21. Cheah J. A framework and working model for integration of care: Bridging gaps between tertiary, secondary and primary care settings. *Global Health Leadership Forum*. 2012.
22. American Hospital Association. Engaging health care users: A framework for healthy individuals and communities. *Chicago: 2012 Committee on Research*. 2013.
23. Weeks WB, Gottlieb DJ, Nyweide DJ, et al. Higher health care quality and bigger savings found at large multispecialty medical groups. *Health Affairs*. 2010;29(5):991-7.
24. Nuffield Trust. Evaluation of the first year of the Inner North West London Integrated Care Pilot. 2013.
25. Yan LL, Fang W, DeLong E, et al. China Rural Health Initiative – primary care provider study: A large cluster-randomized controlled trial of high cardiovascular risk management in rural China [abstract]. In: *American Heart Association Scientific Sessions 2013*; 2013 November 16-30; Dallas, Texas.
26. Lawyer P, Soderlund N, Kent J, Larsson S. Health reform should focus on outcomes, not costs. *BCG Perspectives*. 2012.
27. Johnson CD, Noyes J, Haines A, et al. Learning from the Brazilian Community Health Worker Model in North Wales. *Global Health*. 2013;9:25.
28. UnitedHealth Center for Health Reform & Modernization. Farewell to fee-for-service? 2012.
29. Paulus RA, Davis K, Steele GD. Continuous innovation in health care: Implications of the Geisinger experience. *Health Affairs*. 2008;27(5):1235-45.
30. Weber V, Bloom F, Pierdon S, Wood C. Employing the Electronic Health Record to improve diabetes care: A multifaceted intervention in an integrated delivery system. *Journal of General Internal Medicine*. 2008;23(4):379-82.
31. Bloom FJ Jr., Graf T, Anderer T, Stewart WF. Redesign of a diabetes system of care using an all-or-none diabetes bundle to build teamwork and improve intermediate outcomes. *Diabetes Spectrum*. 2010;23(3):165-169.
32. Lee TH, Bothe A, Steele GD. How Geisinger structures its physicians' compensation to support improvements in quality, efficiency, and volume. *Health Affairs*. 2012;31(9):2068-73.
33. Shrank W. The Center For Medicare and Medicaid Innovation's blueprint for rapid-cycle evaluation of new care and payment models. *Health Affairs*. 2013;32(4):807-12.
34. National E-health Transition Authority. 2012. <http://www.nehta.gov.au/ehealth-implementation>

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