



PLACING THE PATIENT AT THE CENTRE OF HEALTHCARE

PA report on the Future of Healthcare



THE FUTURE OF HEALTHCARE



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HEALTHCARE REVOLUTION

By George MacGinnis
and Ian Rhodes,
PA Consulting Group

After more than a hundred years of unprecedented progress, the art of the possible in medicine has been transformed. A combination of spiralling demand and expectation, scientific progress and available funding has enabled progress on a scale unimaginable decade-upon-decade. Today the scientific progress and the expectation/demand continue to escalate whilst the ability to fund has plateaued, and possibly even declined for some economies. Healthcare systems around the world are now faced with the challenges of delivering more for less. Efficiencies and cost savings are being demanded as never before, whilst access to and quality of care is expected to remain or increase. The application of science and technology; improvements in business processes and best practices; and innovation in business models are now needed to meet these new challenges.

Healthcare has some unique characteristics that set it apart from other industries, which has meant that health systems have been slow to change. The stock-in-trade is life and death, and as a result the industry is heavily regulated. Previously it has taken decades to reap the rewards of good practice. In most developed economies, moves to protect individuals from the cost of care mean that 'customer power' has been focused on large payers: governments, social insurers or employers. The infrastructure, institutions and culture in healthcare can exert powerful forces to maintain the status quo and, unlike almost any other industry, healthcare professionals – and the institutions in which they serve – hold a special place in the general public's heart. All this is set to change; all of this has to change.

The key question is no longer what can be done, but what should be done within the resource limitations of the system.

In the last 50 years, the most developed countries around the world have seen expenditure on healthcare rise at a rate of 2% faster than growth in GDP. Most of these countries are now spending between 10 and 15% of GDP on health¹. By 2030 the world population is projected to grow from 6.5bn to 8.3bn, global energy consumption will increase by more than 50% and the demand for clean water will increase on a similar scale. The wages earned by people in developed economies will come under severe pressure as people in less developed economies start to compete in the global work place. Healthcare systems are going to come under unprecedented challenges in terms of demand and resource restrictions. Healthcare systems around the world are facing change as profound as the 19th century industrial revolution.

PA healthcare experts see three key components to this challenge:

- Health reform
- Patient-centric healthcare
- Intelligent healthcare



PA's George MacGinnis provides an overview of future trends in healthcare



1. OECD health statistics www.oecd.org/statistics. Health care costs and their impact, Kaiser Family Foundation, May 2012

HEALTH REFORM

Healthcare system reforms are needed to provide the overall framework for the changes, establishing new regulatory regimes, reimbursement mechanisms and, where necessary, professional structures to foster new models of care. Fundamental to this will be enabling the care pathway re-design, involving a shift from curative to preventative care models.



PATIENT-CENTRIC HEALTHCARE

Person-centred health will be the dominant theme in driving new models of care. It recognises a shift from episodic care based on standardised procedures to care that is tailored around the complex needs of individuals and draws on the possibilities opened up by stratified medicine and other targeted approaches.



INTELLIGENT HEALTHCARE

Intelligent healthcare underpins the ability to deliver reforms and achieve greater personalisation by providing the ability to link care with outcomes, and enabling a whole new doctor-patient revolution. If healthcare is about to undergo a modern industrial revolution, information will be the steam that drives these changes. Information flows will unlock healthcare delivery from the constraints of current organisations and infrastructure and enable entirely new commercial arrangements.



In the future of healthcare, there will still be doctors and hospitals, but the landscape will have changed. Conventional assumptions will be challenged as many of the things we associate with hospital care today will be done in new ways, often using technology to enable care to be taken into the community and even the home, involving far greater interaction with patients and those that care for them.

Ultimately, care is as much a human as a scientific process and professionals will feel that their time is best spent focusing on those most in need rather than on navigating administrative complexities.

In this report on the future of healthcare, PA's experts look at the three dimensions of health reform, patient-centric healthcare and intelligent healthcare and explore the impact of these on stakeholders in the new healthcare landscape.

We challenge traditional thinking, drawing insights from right across the healthcare value chain: governments, providers, payers, life sciences companies, new entrants, regulators, clinicians – and the principal future 'commissioners' of healthcare services: the patients.

THE FUTURE OF HEALTHCARE



HEALTHCARE REFORM

Delivering health reform to create healthier communities and maintain universal access to healthcare.

WHERE NO COMMISSIONER HAS GONE BEFORE

HOW IS THE HEALTH AND SOCIAL CARE ACT STARTING TO CHANGE BEHAVIOURS AND AFFECT LONG-TERM HEALTH PROVISION?

By Sam Burrows and Giles Mahoney, PA Consulting Group

The UK's Health and Social Care Act transfers the £60bn commissioning budget to Clinical Commissioning Groups (CCGs) which, led by GP clinical commissioners, are taking over from the Primary Care Trusts (PCTs). In the US, the Affordable Care Act gives a green light to press ahead with the reform agenda. In this report, we look at how these significant pieces of healthcare-related legislation from the UK and US have profound implications for the future of healthcare.

The new Health and Social Care Act undoubtedly suffered a bumpy passage through parliament before becoming law in April 2012. Despite a number of amendments, the core systemic reforms have survived and the English healthcare landscape continues to speed toward transition. Perhaps the most eye-catching of the changes (and certainly the element which has attracted most column inches) is the decision to transfer the £60bn commissioning budget to Clinical Commissioning Groups (CCGs) which, led by GP clinical commissioners, are taking over from the Primary Care Trusts (PCTs). The vision is finally to create a commissioning system that improves health outcomes and is cost effective to run. It also starts to align the commissioning responsibility with GPs who have a vision for better value services closer to home.

These new clinical commissioners will now answer more directly to their local populations and those they see in the surgery consulting room, rather than the Department of Health or its Strategic Health Authority regional outposts as before. However, commissioners, providers and other stakeholders will need truly to understand the impact of these reforms in order to implement them in the best interests of patients throughout the system.

By focusing on understanding the impact of the changes on key stakeholder groups in the healthcare delivery landscape, commissioners can gain a clear view of influences on the provision of healthcare.

PATIENTS

Patients can expect to see a new localised set of services, tailored to the specific needs of their community, rather than a one-size-fits-all approach for an entire region

Clinical commissioners will be expected to observe and listen to the demands of their patients to understand and commission services which are more suited to a community's requirements. This should enable GPs to combine their clinical and commissioning roles effectively by identifying and purchasing more appropriate settings of healthcare delivery, which both drives up quality and reduces costs for a taxpayer-funded system. Patients also benefit from having an identifiable name to answer for decisions about their care – decisions will be made by a GP who can receive opinions directly from the patients themselves.

We have already seen this at work in PA's support to the acute hospital reconfiguration in North West London, where out-of-hospital care developments have been embedded in the strategy far earlier than in other recent reconfigurations. GP clinical commissioners will only now support hospital reconfigurations if they are confident that the local care alternatives, closer to home, are put in place in parallel.

GENERAL PRACTITIONERS

General Practitioners (GPs) as clinical commissioners are taking more accountability for commissioning priorities which will be more transparent to patients

GPs will have to adapt quickly to their new role and the responsibility which comes with it. Whilst having a named individual answerable to feedback will be seen as positive by patients, it comes with risks attached for the GPs themselves. Accountability for judgments made could increase both quality and transparency around decision making. However, with decision makers left personally exposed to those who become particularly unhappy with their care, there is cause for concern for those who may find themselves in the line of fire. This gives rise to a whole new tension within the system, altering the traditional role of the GP as a patient advocate and introducing a whole new set of roles and responsibilities such as achieving financial balance through prioritisation and making choices about funding alongside managing patient expectations. Whether the two can be combined without producing a direct conflict of interest remains to be seen and poses a number of threats to a profession which has always prided itself on its role as a patient champion. Many GPs are concerned that they will now take the blame for prioritising the limited health budget and that patient anger will be directed at them.

You can already see this tension playing out as GP clinical commissioners seek to address the Quality, Innovation, Productivity and Prevention (QIPP) challenge to improve efficiency in the NHS to allow for reinvestment as the demands on healthcare increase. We have seen challenging discussions between some GPs who want to focus on investment initiatives to deliver better patient outcomes in the long term, balanced against the need to deliver immediate savings to resolve financial problems in a local area. Our work in Harrow and Ealing on developing admission avoidance schemes with the local acute services was a good example where the case for change was balanced against an accelerated timeline for financial returns.





PA's performance management expert Richard Coughlin explains how unlocking the potential of healthcare commissioning requires new ways of working. These include giving staff a clear vision, managing performance that rewards the right types of behaviour and delivering the training needed in new skills such as customer management and commercial management.

PROVIDERS

Providers are beginning to appreciate the changing nature of their relationships with clinical commissioners

Providers are changing in ways that present opportunities and threats to the system. They face a plethora of challenges to their business viability particularly as more NHS Trusts are accelerated towards becoming Foundation Trusts by 2015. The providers which survive and flourish during the transition will be those which can identify flexible partnerships with community and third-sector organisations to deliver cost-effective/ value-for-money and higher-quality care locally for patients. These providers, if they are willing, can develop strong long-term relationships with their new clinical commissioners. For some, this is an opportunity to reset the clock on historically poor commissioning/ customer relationships.

These new avenues may be crucial for survival for some providers in some regions where those sitting across the table from them – namely their local CCGs – will have a strong bargaining chip in being able to draw on their clinical knowledge and insight. The transition of a number of skilled NHS managers from PCTs to Commissioning Support Units (CSUs) may prove to be a match for those providers who may want to continue to draw work into large acute hospitals rather than enable services outside of hospital to flourish, saving commissioners significant sums. Clinical commissioners are becoming empowered through working together to exact more effective terms as they negotiate with larger healthcare providers.

In PA's work with CCGs to establish CSUs across England, we have seen the development of powerful commissioning hubs where a group of CCGs have come together to gain greater negotiating power with providers. The key has been to help CCGs balance their desire to do more locally and the benefits that come from grouping together to negotiate with larger multi-locality providers. If they can get this balance right, they will be able to extract the best value from large providers, reduce unnecessary admissions and still invest in local alternatives.

Our experience indicates to us that the drive to have clinicians more actively involved in commissioning decisions is starting to challenge conventional ways of doing things and encourage more local development of services closer to people's homes. The changes will expose GPs to more scrutiny from their patients who ask them to justify their decisions, which will ensure that many decisions are more transparent and defensible. The danger is that bold and brave decisions may be avoided, as the perceived feedback may be too great, causing paralysis. Clinical commissioners are finding new ways to collaborate in their commissioning to deliver their strategic intention. This is to improve health outcomes and create a more efficient health system through ensuring fewer people attend hospital by challenging the acute hospital bias in the current commissioning system. Our work is helping CCGs to start to use business intelligence, informatics and evidence to make the case for a more effective way of commissioning that will have a lasting impact.

**For more information
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IMPLICATIONS OF THE AFFORDABLE CARE ACT IN THE US

By Dan Walsh and James Allen, PA Consulting Group



PA healthcare experts Dan Walsh and James Allen discuss this significant development in healthcare reform.

The recent Supreme Court ruling upholding the Affordable Care Act gives a green light to press ahead with the reform agenda and with related initiatives such as accountable care organisations and new models of reimbursement that are already underway. There will be a drive towards reducing cost in the system, as well as improving access.

Until now, there has been uncertainty about the future among the healthcare community. With the paralysis finally over, there is an urgent need for payers, state governments and pharmaceutical companies to understand and act on the implications.

PAYERS

There are both opportunities and risks for payers. A major opportunity is for greater revenue: an increase of perhaps 10% per year as a result of wider coverage. Care costs should also come down as uninsured people stop visiting emergency rooms and get better treatment elsewhere.

The main risk for payers lies in the need to produce lower cost plans, and to participate in the creation of state 'insurance exchanges', many of which have yet to be designed. The net effect for payers should be positive, provided they are sufficiently innovative in their response.

STATE GOVERNMENTS

States face the challenge of designing complex insurance structures (including health information exchanges) within a tight schedule: the Federal Government wants formal plans by the end of 2012, and implementation by 2014. States also need to modernise their Medicaid programmes. For the most part, health insurance plan managers – like employers' benefits managers – have yet to understand the requirements.

There are also political issues, since only half of states were party to the case.

PHARMACEUTICAL COMPANIES

Pharmaceutical companies have for some time been aware of a need to collaborate more effectively with payers and other healthcare stakeholders in order to address a growing focus on population outcomes and solutions which require integration across the health system. Following the Supreme Court decision, that collaboration must now become a reality.

Already, many large pharma organisations are working on collaborative solutions. With the earlier uncertainty removed by the Supreme Court ruling, we can expect to see them producing increasingly holistic solutions to healthcare problems, and working more closely with insurers to achieve the best possible drug and treatment combinations.

“THIS DECISION PRESENTS AN OPPORTUNITY TO MOVE FORWARD. THERE HAS BEEN A LOT OF UNCERTAINTY FROM THE PAYER SIDE AND THE MEDICAL COMMUNITY AND NOW WE ARE GOING TO SEE PEOPLE GETTING BACK TO BUSINESS AND THE PARALYSIS SHOULD BE OVER.”

**For more information
please email
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Dan Walsh, PA expert in life sciences and healthcare

THE CLOUD CAN TRANSFORM THE WAY THE NHS COLLECTS AND USES DATA

By Dr Stephen Black and James Mucklow, PA Consulting Group



PA's Paul Craig shares latest thinking on smarter use of information. PA is actively working to help healthcare professionals and organisations use data, already captured by the NHS, to identify the savings and areas for performance improvement that make a lasting impact.

In response to the hype about how the cloud will transform data use, PA experts decided to put it to the test in the real world of NHS data.

Every hospital in England collects a huge amount of detailed data about their activity and this all ends up in an archive called Hospital Episode Statistics (HES). The archive as a whole takes up (as coded data) a little less than a terabyte of storage yet it takes several months to produce the HES.

PA decided to explore whether the data could be analysed more rapidly. So we bought the data and installed it (with certain security restrictions) on our own hardware. We uploaded it into a traditional Microsoft SQL database on a 1TB drive on one of our servers. We could then find out a whole range of information such as admissions for particular conditions over the last decade. However, this process still took several hours. With time and more storage space we could dramatically improve these times by normalising the tables and building suitable cubes. We could also load it into a more sophisticated analytics engine with dedicated hardware and software, but that would require significant capital investment.

The alternative was to upload it to the cloud using tools such as Google Storage and use BigQuery to extract data from it. As PA has an existing relationship with Google, we pursued this route (with appropriate approval). This showed that it is possible to get even sensitive data in the cloud and apply proper safeguards.

We found that queries that took all night on our servers were returned in under 30 seconds using BigQuery. This was the performance on the raw uploads with no optimisation. This stunning improvement in speed applied even to more sophisticated analysis. Within two weeks of starting to use the Google tools we were able to produce interactive maps directly from HES queries in seconds. In the old days it would have taken more than a month to produce just one clever map.

These exceptional results should make a huge difference to users. The slowness of the current process severely limits the quality and number of interesting results. This means that analysis that should be highly influential in changing the way people allocate the NHS budget is not done at all or is too slow to have an effect.

There will be some challenges around bandwidth and how to organise data, however our work shows that these problems could be overcome. We would then have an NHS where easy-to-use data is routinely applied to drive up quality and deliver lasting improvements. By the standards of IT projects, this could be easy to achieve as it would not require a big upfront commitment of capital.

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CLICK BELOW TO READ MORE ON HEALTH REFORM

As the UK government announces a change in elderly care, local authorities get their calculators out. PA discusses whether the figures add up, in *The Independent*.

PA healthcare expert addresses how an ageing population is affecting the UK.

How to shape care home commissioning strategy, set fees and make savings – PA has developed a unique financial benchmarking tool that presents a user-friendly analysis of local care home costs, which can be set up in a matter of weeks. Read PA's view.

The 'challenge', not the 'burden', of an ageing population. The UK cannot escape the challenges that are being placed on both social care and NHS systems from an increasingly elderly population – Read PA's view on the implications of the Dilnot Commission recommendations.

Supporting the General Medical Council to produce its 2012 report on 'the state of medical education and practice' in the UK.

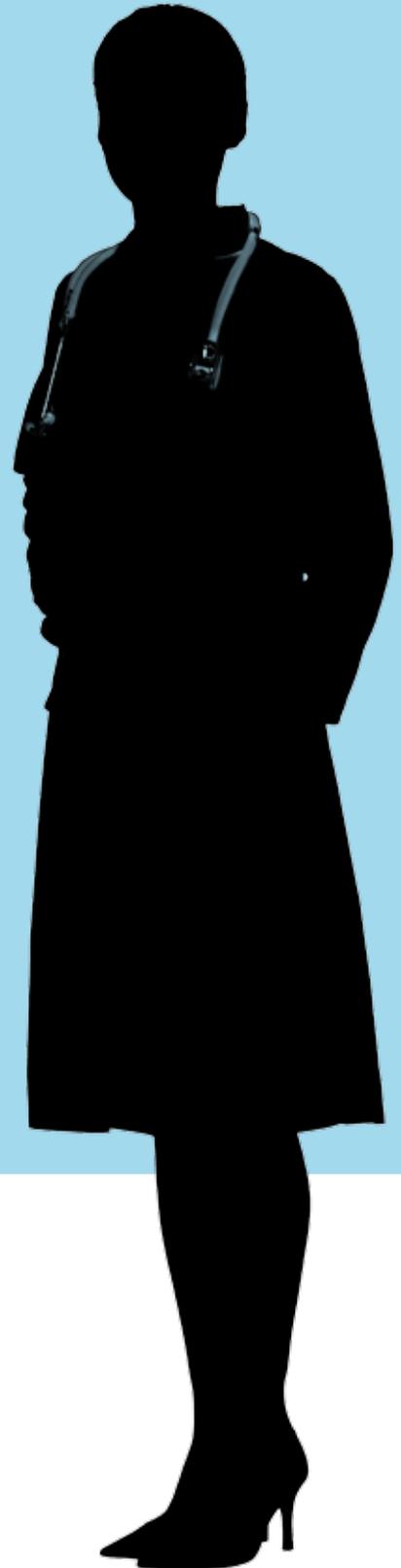
PA worked in partnership with Monitor to design and develop, for publication, a Board Director Governor guide.

NHS Commissioners in NE London - developing proposals for future health provision.

GP Commissioners - building the right workforce and management capability for success.

Reshaping the regulation of health professionals.

Billions to IT systems in new Danish hospitals.





PATIENT-CENTRIC HEALTHCARE

Person-centred health will be the dominant theme in driving new models of care. This recognises a shift from episodic care based on standardised procedures to care that is tailored around the complex needs of individuals and that draws on the possibilities opened up by stratified medicine and other tailored approaches

PATIENT AND POPULATION EMPOWERMENT

Putting the informed individual 'front and centre' in the healthcare value chain.

We all need to take more responsibility for our health. To incentivise wellness and increase vital early engagement with patients, carers and population groups, policy makers, healthcare providers and private enterprise are increasing the information, tools and resources deployed to educate, engage and empower us.

Social media and patient advocacy groups are opening new channels for the exchange of experience and information – raising the prospect of better informed, better educated populations and patients that input to decision making.

In the US, Avivia (a Kaiser company) is working with employers to create social platforms to directly incentivise patients to make healthy lifestyle choices. Early trials indicate pronounced changes in behaviour and awareness. This mirrors the Kaiser health system's view that cost, quality and outcomes can be improved by reducing 'adverse patient events'.

TRANSLATIONAL MEDICINE

Integrating clinical data and patient insights earlier in research to get the right drug for the right patient at the right time.

Translational medicine is about understanding the mechanism of disease. Specifically, this is done by integrating clinical and patient

insights earlier in the research process and encouraging new models of collaboration across the clinical, academic and industrial environment.

PA has been working with Cancer Research UK, supported by Pfizer, AstraZeneca, the Technology Strategy Board (TSB) and NHS Trusts, to establish a national diagnostic platform for cancer. This will change the way we diagnose, treat and manage cancer in the UK.

NEW BUSINESS MODELS

Disruptive innovation in clinical and commercial models to reward quality outcomes, reduce cost and manage risk.

We believe that to deliver the triple aim of health reform – improving outcomes, increasing quality and reducing the cost of care – genuine disruptive innovation in business model and clinical design is essential. Tomorrow's health providers and healthcare businesses must create new structures and financial mechanisms to reward quality outcomes and share risk.

PA has applied its unconstrained thinking to work with a major pharmaceutical company to redesign how it engages with large US health systems – embracing a model of partnership and potentially risk-sharing collaborations to improve medication adherence and patient engagement. In the UK, we are helping to build the new Care Commissioning Groups and increase local choice.



Hear PA experts Jasveen Chugh, Hakim Yadi and James Allen describe innovations in patient-centric healthcare

PATIENT-CENTRIC HEALTHCARE BROUGHT TO LIFE

PATIENT EMPOWERMENT

- Patients taking responsibility
- Increased care access and choice
- Integrated patient journeys
- Enhanced patient information
- Use of online patient social networks

Avivia Health (Kaiser Permanente)

Avivia, a Kaiser company, works with employers to create social platforms to **incentivise patients to live well.**

Early trials indicate **pronounced changes in behaviour** in core lifestyle choices and attitudes.



Enabling patients to take ownership of their health

TRANSLATIONAL MEDICINE

- Integrating patient and clinical insight
- Concepts of 'personalised medicine'
- Delivery via stratified approaches
- New models of clinical collaboration
- Bench to bedside and back again

Cancer Research UK (CRUK)

CRUK, Pfizer, AstraZeneca, the UK's Technology Strategy Board (TSB) and NHS Trusts are establishing a **national diagnostic platform for cancer.**

The platform will **change the way we diagnose, treat and manage cancer** in the UK.



The right drug for the right patient at the right time

NEW BUSINESS MODELS

- Integrated health value propositions
- New collaborations around patients
- Valuing outcomes and risk
- New organisational structures
- Enabling resources and processes

Geisinger Health System

Geisinger has led **progressive business model reform, adopting quality measures** for reimbursement.

Greater control of population health and Geisinger is **incentivised to improve quality and outcomes.**



Integrated population health models reimbursed on outcomes



PATIENT-CENTRIC HEALTHCARE – THE CASE FOR PROCESS INNOVATION

As part of our work to challenge conventional assumptions, PA held a roundtable dinner to discuss the future of healthcare at the Royal College of Physicians in London.

Among those represented were the pharmaceutical and medical technology industries, national and local government, healthcare payers, academic research organisations and the third sector.

Our starting point was that healthcare systems worldwide are increasingly faced with demands such as ‘deliver twice as much healthcare for half the cost’. At present few systems show signs of measuring up, so what changes should be made?

Here we summarise some of the ideas and themes that emerged.

THE NEED TO INNOVATE AROUND PROCESSES

Innovation around delivery processes may be more important than innovation around new drugs, at least in some fields. To improve processes, healthcare systems need shared concepts of value and quality, which may best come from payers. Better processes will also require:

- improved access to patient information (integrated national systems are desirable)
- provision of the latest tools (particularly diagnostic tools) to doctors

INTEGRATING HEALTHCARE AROUND THE NEEDS OF THE PATIENT

Integrated care is an important approach to improving processes, with positive results. Consistent, coherent care with technology-enabled information sharing gives patients better care, reduces frustration for clinicians, and saves money.

Integrated healthcare necessitates breaking down the ‘tribalism’ of different professional groups that have traditionally been in competition with one another, so that they can share a vision, protocols, metrics and financial incentives. There is initial resistance, but once the groups start talking they realise that they are all motivated by the interests of the patient.

Collaboration makes it possible to create a shared care plan that pre-empts problems – for example scheduling regular foot examinations for people with diabetes.

RETHINKING ROLES AND RELATIONSHIPS

Changing processes implies changing the role of the professional. Clinicians need to evolve from ‘lonely heroes’ to ‘restless champions for change’ who can both lead and follow as circumstances require.

The role of patients is also changing. In future, they will have more rights to make their own healthcare choices and more responsibility for improving their own health and wellbeing.

To perform this more active role, patients need more access to information. They should be given visibility of treatment costs, since they are in a position to decide what constitutes value for money and (in many countries) are footing the bill as taxpayers. Portals can give patients access to this type of information, as well as their own personal data and data to help them choose care providers. Organising the system to suit patients is more efficient. For example, when GPs spend the first hour of their day on telephone consultations, the number of appointments needed is reduced by around 30%.

Social care and healthcare should perhaps be regarded as a single system though they are structured differently at the moment (e.g. social care is means-tested while healthcare is universal). The two are closely interrelated: for example, health problems create the need for social care such as meals on wheels, and conversely health problems such as obesity arise from social factors such as what is viewed as normal in terms of physique and eating/lifestyle habits. At present, social care is arguably under-funded compared with healthcare.

“TRIBALISM IS STILL WIDESPREAD IN THE HEALTH SERVICE – THE DIFFERENT PROFESSIONS ARE OFTEN SEPARATE, ALMOST LIKE THE CRAFTS AND THEIR GUILDS BEFORE THE INDUSTRIAL REVOLUTION. WE NEED THE EQUIVALENT OF INDUSTRIALISATION.”

Professor Elisabeth Paice, a rheumatologist and former postgraduate dean, now the Chair of the North West London Integrated Care Pilot

PREVENTION RATHER THAN CURE

There is a growing emphasis on preventative care, which is better both for patients and for the healthcare budget. But getting people to take responsibility for their own health is challenging.

People are often willing to make lifestyle changes once they have been diagnosed with a condition such as diabetes, but it is harder to persuade them to do so pre-emptively. The chances are better if they feel it's their choice, rather than something the doctor wants them to do, and if the information is presented in a personalised way that makes the patient really think about it. Social networking techniques can help, because people follow coaching from their peers more willingly than advice from a professional.

Financial incentives to improve lifestyle are being tried, for example by US employers who 'fine' employees who smoke or have high cholesterol by making them contribute to increased insurance costs. These incentives are more likely to work if rewards for behaviour are immediate rather than coming a year later.

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“CURRENTLY A DISPROPORTIONATE AMOUNT OF ATTENTION IS FOCUSED ON IMPROVING HOSPITAL CARE, WHEN IT'S LIKELY THAT THE BIGGEST GAINS ARE TO BE HAD IN PRIMARY CARE. SMALL IMPROVEMENTS THERE, PARTICULARLY IN TERMS OF PREVENTION, COULD KEEP A LOT OF PEOPLE OUT OF HOSPITAL.”



Hear speeches from Professor Elisabeth Paice, Chair of the North West London Integrated Care Pilot and James Peach, Cancer Research UK at PA's Future of Healthcare Roundtable.



NECESSARY REVOLUTION – HOW PHARMACEUTICAL COMPANIES MUST GO TO MARKET IN A PATIENT-CENTRIC WORLD

*By Matthew Smith and James Allen,
PA Consulting Group*

Powerful forces of change are conspiring around the pharmaceutical industry. While the last two decades have constantly challenged the sector to evolve, the current economic, political and health technology environment accentuates and accelerates the call to action. From healthcare reform to patient empowerment and the near-extinction of the blockbuster, pharma companies have little choice but to adapt their approach to market to address the myriad elements that together form a new landscape and unlock its potential.

But the established commercial model needs more than just evolution. Fundamental change is required. Many aspects of traditional strategy are no longer proving effective. The whole health system is reaching a critical juncture as policy makers and payers demand decisive action on cost, and new models of provision emerge that reward outcomes, not merely treatment. The traditional model of pharmaceutical selling by demonstrating brand efficacy to prescribers is challenged by provider consolidation, centralised decision making, payer influence and patient information.

The customer is changing and suddenly the patient is at the centre of the value equation. Recognising the moving landscape, providers – the traditional pharmaceutical ‘customers’ - are adapting their models to prioritise service and care outcomes. How decisions are made and who is making those decisions have moved on. Pharmaceutical companies have to follow.

PA’s experts believe that the future commercial model of successful pharmaceutical companies must have at its heart the development of genuine partnerships with healthcare providers, payers and other key groups that prioritise quality patient outcomes. This means thinking differently and moving on from a volume-based, benefits-selling, blockbuster mindset to forge effective relationships with decision makers. Pharmaceutical companies must leverage their rich and diverse resources to collaborate on the pressing issue of tomorrow – how to keep a growing patient population well – prioritising lower costs of care and preventative medicine.

There are foundations to build on – the established pharmaceutical commercial model is, in some areas, already heading in this direction. Some oncology products in Europe, for example, are priced and reimbursed on outcomes. During commercial evaluation of a product in early stage development, companies prioritise candidates with label claims that show additional therapeutic or safety benefits over best in class – otherwise payer reimbursement is compromised. Most companies are actively developing account management approaches.

“WE BELIEVE THAT THE FUTURE COMMERCIAL MODEL OF SUCCESSFUL PHARMACEUTICAL COMPANIES MUST HAVE AT ITS HEART THE DEVELOPMENT OF GENUINE PARTNERSHIPS WITH HEALTHCARE PROVIDERS, PAYERS AND OTHER KEY GROUPS THAT PRIORITISE QUALITY PATIENT OUTCOMES.”

Matthew Smith and James Allen, PA experts in life sciences and healthcare

Those that do not start to address the challenge now risk being overtaken by adaptive and more patient- and customer-centred competitors.

The smart players recognise that the changes ahead are not an all-or-nothing decision. Local and country markets will evolve at different rates and some customers within them will remain diverse in their outlook for some time. This means creating a flexible commercial model that can embrace and adapt to change, while retaining the best of what pharmaceutical companies do today where it remains relevant.

How can this be done? We believe unlocking the industry's future potential means adopting three key principles:

- outcome-based solutions demand an integrated approach
- customers are changing faster than reform – the pharmaceutical sector needs to move quickly and win trust
- structured account management complements traditional and emerging channels.

1 OUTCOME-BASED SOLUTIONS DEMAND AN INTEGRATED APPROACH

Under pay-for-service or shared-savings reimbursement models, pharmaceutical companies will increasingly be rewarded based on patient outcomes. This moves the focus from treatment based on indication to proven results for individual patients, removing the incentive for companies to market to volume and increasing the incentive to take part in preventive care.

This means two things – working closely with providers on new solutions for specific patient populations and critical care groups, and accessing patients who are not engaged by the right regimens – a historically difficult proposition. But pharmaceutical companies can play a role based on accumulated knowledge about specific disease states, data and patient behaviours. Working with providers on issues such as population health can provide a win-win-win situation: patients receive more appropriate care, providers and payers reduce treatment costs, and pharmaceutical products play a central role in delivering the outcome.

This was the case for one group of US workers who were identified as high risk by their employer owing to lifestyle choices and predisposition for diabetes and chronic obstructive pulmonary disease (COPD). By working with a dedicated team from one pharmaceutical company on a programme of education, treatment and lifestyle change, all parties achieved a positive outcome. For the pharma supplier, this win was an increase in prescribed volume.

To achieve this model, previously independent parties must work together, including payers, providers, patients and suppliers. Pharmaceutical companies should partner with healthcare organisations to reach the end customer – the patient – more effectively, improve efficiency and reduce costs.

2 CUSTOMERS ARE CHANGING FASTER THAN REFORM – THE PHARMACEUTICAL SECTOR NEEDS TO MOVE QUICKLY AND WIN TRUST

Providers have seen elements of the reform agenda before. This time, though, the response is real and sustainable. We see accelerating consolidation of health systems in the US and formation of new prescribing and reimbursement groups in Europe. In both cases, reality is moving more quickly than policy demands. A key driver is the empowerment of patients and decision makers by the spread of data, emergence of personal health records and growth of value networks which allow more informed decisions and confidence in an outcome-based approach.

If pharmaceutical companies are to forge effective relationships with other key healthcare stakeholders, they need to think differently to become much more than a supplier and really understand the needs and expectations of their customer groups. They must partner with organisations that are addressing the major issues of cost, outcome and care, and become a more integral part of the health ecosystem. Pharmaceutical companies can then evolve ways to make the most of their products and services, and help develop solutions, not just sell products.

3 STRUCTURED ACCOUNT MANAGEMENT COMPLEMENTS TRADITIONAL AND EMERGING CHANNELS

To build these relationships, disciplined and effective account management will be central to the new model. However, before every sales manager rushes to a consultative approach, it is important to remember that pharmaceutical sales representatives will still be a key piece of the effort. Sales representatives remain an important route to providing efficacy information. Companies can build on this channel to provide additional valuable knowledge – for example around the HIT (Health Information Technology) or the reform agenda. There is great potential for integrated reps and account leads to serve as a support and education network for organised medical group and health system customers; and of course, where traditional ‘prescriber’ customers remain the key decision makers, the representative model has a long future ahead.

Ultimately, what both organised customers and independent practitioners want is a balanced and integrated approach from pharmaceutical partners that reflects their needs – this may require a

greater emphasis on the digital provision of information for some and a more personal approach for others. Informed patients help providers and pharmaceutical companies alike, and so appropriate digital provision of key product information and compliant therapy education are important components of the model. The industry is already well aware that change has arrived. However, we think actions speak louder than words. First, the time is right to start addressing the demands that the challenges outlined place on the industry. Second, this must be done in a holistic manner. Many programmes look at individual parts of the model described here – for example, account management, new incentive structures or patient outcome – but do so in silos.

PA advocates doing this differently: achieving genuine partnerships, and a shared focus on the patient, with providers and payers means broad-based, holistic and accelerated evolution of the commercial model. This means developing the quality of customer (prescriber, provider, patient and payer) insights; value propositions; customer-facing roles and responsibilities; performance management; channels; training; and the systems and processes that support the model in an integrated effort.

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On the following pages, our article:
“Actions speak louder than words”
presents six practical ideas big
pharma can act on today to navigate
an uncertain healthcare economy.

ACTIONS SPEAK LOUDER THAN WORDS – SIX PRACTICAL IDEAS TO NAVIGATE AN UNCERTAIN HEALTHCARE ECONOMY

By Amy Watt and James Allen,
PA Consulting Group

Six practical ideas big pharma can act on today to navigate an uncertain healthcare economy.

Global healthcare systems are in the grip of uncertain, but profound change. In the next 5 years, analysts believe we will see bigger shifts in the delivery, regulation and economics of healthcare in developed markets than in the preceding decade. This isn't a choice, but a fundamental imperative. In the United States, for example, costs are growing at unsustainable levels.

For the life science industry, these impacts will compound a painful series of patent cliffs, pipeline setbacks, complex new healthcare legislation and increased regulatory and compliance requirements. This maelstrom of external and customer pressures in turn demand evolution toward new pharma business models, as we discussed in the 'Necessary Revolution' article on pages 16-17.

Most pharmaceutical executives now agree that the traditional operating model will be ineffective for the emerging healthcare economies. Many have gone further, prescribing a course of 'commercial innovation' – correctly identifying the need to build new capabilities, market and supply products in different ways and accept new models of risk as healthcare systems are reoriented around the patient. This new approach will increase the targeting, quality and delivery of personal care and incentivise outcomes and prudent cost management.

However, it appears that these fine ideals are rarely being met with committed activity. The complexity of navigating an uncertain market combined with deep-seated organisational belief in a "tried and tested" product-centric approach to sales and marketing are proving resilient barriers to change. The risk of disruption and being left behind by an

increasingly sophisticated and evolved marketplace grows with every delay.

The unfortunate reality is that talk about innovation in business today is cheap and no more so than in the life science industry. Here more than any other sector, genuine, proactive and sustained commitment to a real culture of innovation is urgently needed to prepare for the change ahead in its markets – extending the principles of patient-centred design to the business model as well as to products, services and foundational science.

We believe that this has to start with senior leadership demonstrating action, not just fine words. Amid the uncertainty, truisms are emerging that life science companies can act on now to transition toward a patient-centred business model.

Here are six such practical ideas:

1 DEFINE YOUR AMBITION – TO THRIVE (AND NOT JUST SURVIVE)

There are committed efforts to rethink approaches to both product development and commercialisation underway in different parts of life science companies, but they are rarely pulling in the same direction, are often designated as 'special projects' and typically lack leadership commitment to implementation. The level of change ahead requires clear conviction to carry the organisation toward a new business model.

It is time to connect the dots and ensure strategic planning aligns diverse 'commercial innovation' activities in separate business units and geographies around a common goal.

2 PREPARE THE BUSINESS TO SUPPORT PATIENT-CENTRED MODELS OF HEALTHCARE

The common unit of currency in evolved systems of care will be the patient and the health outcomes delivered for them – both in terms of quality and impact

but also the cost of securing them. As health providers and payers adapt to this model, so must the life science industry.

Pharma has to prepare for a world of informed and empowered patients and models of incentives and reimbursement that are based on the delivery of results, not the promise of them and adjust its processes, capabilities and sales and marketing teams accordingly.

3 COLLABORATE. IT'S NO LONGER ENOUGH TO 'GO AT IT ALONE'

Outcome-based targets and an increased focus on the patient experience demand a more joined-up approach across the healthcare industry – prioritising integrated, collaborative solutions and delivery models that connect all aspects of care management. Pharma needs to come to the party.

This means committing to collaborations with providers, payers, policy makers and patients – ranging from shared evaluation of real world data opportunities to working together to change the way in which patients seek, receive and navigate care.

4 CREATE SOLUTIONS THAT GO WAY BEYOND JUST THE PRODUCT

Holistic packaging of product, service and technology is increasingly common and should be a key strategic focus. 'Product plus' propositions are prevalent in the context of companion diagnosis, holistic care, episode management and adoption of wellness and prevention services.

Product promotion that previously focused on benefits alone now must demonstrate value in terms of cost efficiency and outcome delivery and connect to a wider agenda – e.g. across a disease state or patient segment.

5 INVEST IN UNDERSTANDING AND RESPONDING TO THE POTENTIAL OF REAL WORLD DATA.

The promise of fully integrated systems of care and the ability to manage for patient outcomes is heavily reliant on the use of connected health information that captures, aggregates and coordinates 'real world' patient data to make decisions about treatment and interventions.

Pharma has a proud history of using historic or trial-based patient information to research and solve clinical challenges – the industry must now commit to understanding how to engage with real-time patient information and work with health providers and new entrants to develop solutions that can harness this potential.

6 'ONE SIZE FITS ALL' IS NO MORE – DEVELOP LOCALLY TAILORED MARKETING STRATEGIES.

The needs of specific patient populations differ widely and in turn affect the priorities of local healthcare providers and payers. Global product strategies will only go so far as to provide credentials.

For pharma to position itself as a sustainable partner in the development and delivery of care solutions, it must build locally relevant sales and marketing capabilities that understand specific customer needs and can then tailor solutions to them – a principle that offers the chance for success in both developed and emerging markets.

The clinical excellence of pharmaceutical businesses is not in question. However, the healthcare market is moving into a new cycle where the next generation of products must also be defined by an ability to integrate within solutions that deliver enhanced patient outcomes and support incremental cost efficiencies.

Successful life science groups will be those that can develop these integrated solutions but also work in partnership with systems of care to make sure that they are properly designed, implemented and improved to deliver a common goal.

Being that successful company means being prepared to act – starting with the sponsorship, commitment and conviction of leadership and setting course on a genuine course of business model change.

In big pharma today, 'innovation' is a popular term. But attaching it to any initiative or project does not make its delivery any more innovative or likely to succeed. Being a true innovator in this market will take more than words – a genuine leadership commitment to change, to create, support and sustain connected thinking across the organisation and being open to new approaches and solutions that move the collaboration agenda forward with other healthcare companies.

Real innovation means moving well beyond traditional paradigms and taking decisive action. It's time for big pharma to take that medicine.

For more information please e-mail: healthcare@paconsulting.com



PHARMA MUST HARNESS PATIENT-CENTRIC DATA TO ACHIEVE MAXIMUM VALUE FOR PATIENTS

PA Consulting Group's Dr Jasveen Chugh, Adam Manhi, Dr Hakim Yadi and Dr Paul Wicks, R&D Director of PatientsLikeMe discuss the potential of patient-reported data for the future of healthcare.

Large volumes of patient-centric and often patient-reported data are becoming available from electronic health records and social networking sites. Pharmaceutical companies are becoming increasingly aware of the potential value of this data. However, most pharma companies have made little progress in turning patient-centric data into useful information.

One obstacle is companies' fear of creating a large regulatory burden or legal liability because of the perceived restrictions on patient engagement imposed by the Food and Drug Administration (FDA) and other regulatory bodies. Companies also lack the experience of processing this new form of data into meaningful and actionable information.

One company that has is Novartis, whose partnership with PatientsLikeMe is helping them learn from and about people with multiple sclerosis (MS). PatientsLikeMe describes itself as a healthcare company that builds online communities for patients with serious medical conditions to let them share their progress, connect with other patients, and improve their outcomes.

“WE NEED TO BE CLOSER TO PATIENTS TO UNDERSTAND THEIR EXPERIENCE AND THEIR NEEDS.”

Novartis CEO Joe Jimenez

“We need to be closer to patients to understand their experience and their needs,” Novartis CEO Joe Jimenez has said¹. The company reported that it was able to close the phase III clinical trial of Gilenya two months faster than anticipated through PatientsLikeMe - driven patient recruitment.

Other PatientsLikeMe clients are conducting health economic and outcome research (HEOR) studies online, or buying data to inform their teams.²

RICH OPPORTUNITIES FOR PHARMACEUTICAL COMPANIES

Despite the perceived difficulties of interacting with patient social data, companies need to recognise and act on the potential of patient-centric data to shape the future of healthcare.

Patient-centric data is vital because it offers insights into patients' needs, behaviours and experience. Self-reported data disclosed by patients via data-sharing networks can complement other types of data, such as claims and prescribing data, to give companies a better view of how far their products are meeting patient needs and delivering desired outcomes.

While patient-reported data lacks the validity of a clinician's judgment, it may provide a more accurate record of patients' treatment experience and perceived side effects. In fact, a recent study found that patient-reported disease impact collected online was highly correlated with a clinician's examination.³

Patient-centric data has the potential to allow pharma companies to improve their product portfolio in several ways, including: clinical trial feasibility studies conducted in real time, real-time/faster patient recruitment, identification of real world efficacy, outcomes monitoring and more accurate and up-to-date event reporting.

COLLABORATING TO OBTAIN CUSTOMISED, STRUCTURED DATA

To turn patient-centric data into useful information, certain mechanisms need to be in place: for example, the ability to categorise vast amounts of data in a range of meaningful ways. Indeed, much of PatientsLikeMe's success is due to its creation of structured input mechanisms. “We collect patient data in discrete categories, and ensure the patients understand the often complex medical terminology, so that we can aggregate the data and draw meaningful conclusions,” explains Dr. Wicks.

In contrast with the unstructured (but often valuable) stories shared on social networks like Facebook or Twitter, online data-sharing communities can capture quantitative data about disease history, treatments, symptoms and side effects. This data is of sufficient quality to be analysed by the pharmaceutical industry, as well as by clinicians and academics. Dr. Wicks and his team have published peer-reviewed studies on subjects ranging from off-label use of drugs in neurology to an online observational drug study in amyotrophic lateral sclerosis run by patients themselves.⁴

By collaborating with companies such as PatientsLikeMe, a pharma company can get data input mechanisms tailored to specific needs. For UCB, a company with a focus on epilepsy, PatientsLikeMe has built tools to find out about the overall impact of epilepsy on patients: not just the frequency of seizures, but also the impact of the disease on their mood, the side effects of their medication, and even whether or not they can drive. This holistic approach positions companies not just to sell drugs but to unlock the business potential of addressing a patient's whole health problem, and be paid for the additional value that implies.

WORKING THROUGH REGULATORY ISSUES

Leaders in the sector are starting to collaborate with regulators in the US and Europe to find ways to work within constraints on the use of patient data. As patients increasingly realise that sharing their health data can have a positive impact on their care, and that of others, they are likely to add their voices to calls for regulations to be more responsive to the changing environment.

A requirement for gaining the support of patients is a trusted independent platform where they can input, store and retrieve their own data, as well as selectively sharing it. As Dr. Wicks of PatientsLikeMe says: "By answering simple questions about your health conditions, you create a profile with helpful charts and timelines so you can watch the progress of your health over time. You can also get your care team involved, and keep your doctors up to date..."

PHARMA COMPANIES MUST LAY THE GROUNDWORK NOW

Patient-centric data represents a major opportunity for the pharma industry and addressing concerns over its use should be a priority. This data is the key to future innovation, and to unlocking business potential, because it will allow pharma companies to foresee patients' needs and respond to them in an agile manner. They need to start finding out what data is out there, and how it can be valuable to them and, most importantly, to their customers: patients and healthcare payers.

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“PATIENT-CENTRIC DATA IS VITAL BECAUSE IT OFFERS INSIGHTS INTO PATIENTS’ NEEDS, BEHAVIOURS AND EXPERIENCE. SELF-REPORTED DATA DISCLOSED BY PATIENTS VIA DATA-SHARING NETWORKS CAN COMPLEMENT OTHER TYPES OF DATA, SUCH AS CLAIMS AND PRESCRIBING DATA, TO GIVE COMPANIES A BETTER VIEW OF HOW FAR THEIR PRODUCTS ARE MEETING PATIENT NEEDS AND DELIVERING DESIRED OUTCOMES.”

Dr Hakim Yadi, PA Consulting Group

“WE COLLECT PATIENT DATA IN DISCRETE CATEGORIES, AND ENSURE THE PATIENTS UNDERSTAND THE OFTEN COMPLEX MEDICAL TERMINOLOGY, SO THAT WE CAN AGGREGATE THE DATA AND DRAW MEANINGFUL CONCLUSIONS.”

Dr Paul Wicks, PatientsLikeMe

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STRATIFIED MEDICINE IS CREATING NEW OPPORTUNITIES FOR THE MEDTECH SECTOR

By Dr Hakim Yadi, PA Consulting Group and Dr Louise Jones, Cancer Research UK

As our understanding of the genetics of cancer has developed, there has been much discussion of the potential to use genetic information for personalised or stratified treatments. However, for this to become a reality for all patients, the NHS needs to develop an effective national molecular diagnostic capability. Cancer Research UK has built a partnership with the NHS, industry, and the clinical and research communities to create an approach to large-scale genetic testing for cancer.

THE STRATIFIED MEDICINE PROGRAMME

Phase One of the Stratified Medicine Programme will work with a number of hospitals and labs to demonstrate on a small scale how the NHS can provide molecular diagnosis for all cancer types routinely. It will also discover if this information can be linked to patient outcomes to build knowledge about the interaction between genes and treatments. The programme will focus on six different tumour types: breast, bowel, lung, prostate, ovary and melanoma. Patients will be asked permission for surplus tissue from their diagnostic tumour sample to be sent to one of three leading NHS genetic testing labs, where DNA will be extracted and analysed for a range of molecular faults linked to cancer. This information will then be linked to details of their treatment and outcomes in a central secure NHS data repository, for access by researchers.

The programme is a partnership between Cancer Research UK (CRUK), AstraZeneca and Pfizer.

Industry is interested in the potential of stratified medicine, and specifically the opportunity to identify patients for clinical trials and to develop new genetic treatment hypotheses. Alongside this, the UK government is investing in stratified medicine through the Technology Strategy Board (TSB), the UK's national innovation agency. The TSB's Stratified Medicine Innovation Platform has committed to a £50m investment over the next five years to drive the creation of new technologies to support the delivery of stratified medicine in the UK.

James Peach, Director of Cancer Research UK Stratified Medicine Programme, believes that: "Cancer patients deserve affordable, high quality tests delivered on time, and researchers need more information to link genes, treatments and outcomes. Our programme hopes to demonstrate both of these things and we have built a strong partnership across the main stakeholders: the pharmaceutical and diagnostic industries, the NHS and the Department of Health."



CHALLENGES FACING THE DIAGNOSTICS INDUSTRY

Diagnostic products will be at the heart of the future of stratified medicine and have the potential to change the business model of pharmaceutical companies, as the era of blockbuster mass-usage drugs is replaced by medicine targeted on specific populations. We can't yet justify or afford sequencing every individual's genome before a visit to the doctor. However stratification, based on common mutations, is already used in the treatment of the genetic subgroups in breast, lung and colorectal cancer. This approach to treatment will only grow as understanding of the genetic mechanisms of disease increases. James Clough, VP, Oxford Gene Technology, believes that new technology platforms for genomic analysis offer enormous potential for the NHS to improve patient outcomes in cancer dramatically.

The challenge the industry faces is to keep up with the rapid pace of discovery of new disease indicators. Dr Paul Denny-Gouldson from IDBS believes that one way to do this will be to encourage collaboration within the diagnostics industry to ensure that the industry reaches a consensus, or at least drives interoperability around the technologies used to diagnose disease. Other issues will include the requirement for diagnostics to be more readily available at the point of care, have a rapid turnaround and provide easily useable outputs for clinicians to use during diagnosis. The challenges are daunting but the interest from the medical diagnostic sector is encouraging. Tom Burr, R&D manager at Source Bioscience, appreciates that initiatives such as the Stratified Medicine Programme provide industry opportunities not only to test the current state of the art but also to work together to develop new tools.

A number of diagnostics and bioinformatics companies have received financial support from the TSB to develop these technologies including: Affymetrix, Aridhia, IDBS, Lifetech, Oxford Gene Technology and Source BioScience UK.

“CANCER PATIENTS DESERVE AFFORDABLE, HIGH-QUALITY TESTS DELIVERED ON TIME, AND RESEARCHERS NEED MORE INFORMATION TO LINK GENES, TREATMENTS AND OUTCOMES. OUR PROGRAMME HOPES TO DEMONSTRATE BOTH OF THESE THINGS AND WE HAVE BUILT A STRONG PARTNERSHIP ACROSS THE MAIN STAKEHOLDERS: THE PHARMACEUTICAL AND DIAGNOSTIC INDUSTRIES, THE NHS, AND THE DEPARTMENT OF HEALTH.”

James Peach, Director of Cancer Research UK Stratified Medicine Programme

THE FUTURE: BEYOND ONCOLOGY

Dr Cathy Kelly is the medical director of Aridhia, a healthcare informatics company currently working with the programme. She believes that similar approaches could be applied in the diagnosis of central nervous system and cardiovascular diseases. In both cases there is a high disease prevalence and insufficient diagnostic tools for early illness detection or disease prevention.

The ability to develop tests to stratify patients in disease areas outside of cancer will require different thinking and new business models that promote and appropriately reward collaboration between pharmaceutical, diagnostic and bioinformatics companies. Developing these models will be instrumental in allowing all the existing stakeholders to thrive in this new environment.

The Cancer Research UK programme is the first step on this journey, offering an opportunity to learn and develop these capabilities throughout healthcare systems, opening new market opportunities for medical device companies able to meet these challenges.

Dr Hakim Yadi is an expert in translational medicine at PA Consulting Group and Dr Louise Jones is Head of Translational Research and Stratified Medicine Service Delivery Lead at Cancer Research UK.

For more information please e-mail: healthcare@paconsulting.com

Article first published in Healthcare Global magazine

We are helping Cancer Research UK deliver a step change in cancer treatment. [Click here to read the PA case study for more details.](#)

TRANSLATIONAL MEDICINE IN ACTION: GENERATING INSIGHTS FROM PATIENT DATA TO IMPROVE HEALTHCARE OUTCOMES

By Dr Hakim Yadi,
PA Consulting Group

Translational Medicine is often referred to as a one-way translation of ideas from 'bench to bedside'. Translational medicine is far more than this. It is a two-way process of collaborative and iterative biomedical discovery and development focused on patients.

Significantly, industry, academia and clinical disciplines are now working together to share insights and strengths on the clinical utility of biomedical discoveries much earlier in the process than has previously been possible.

Historically, the benefits from translational medicine have been constrained, owing to a number of important challenges including:

- limited access to clinical data
- the lack of appropriate informatics tools to integrate and interrogate clinical data
- the need for new business models that allow stakeholders to realise the value of translational medicine.

At PA's and 4D Biomedical's annual translational medicine foresighting event, we discussed how a number of government, clinical, academic and private sector organisations are addressing these challenges,

thinking differently to realise the value of adopting a translational medicine approach to the way we discover, develop and deliver healthcare.

ACCESS TO CLINICAL DATA

The UK government, through the UK Life Science strategy, has committed to 'making all patient data available' for approved research, allowing patients to opt out if they do not want their records to be used in healthcare research. This innovative and forward-facing approach to realising the value of the NHS is at the heart of the new Clinical Practice Research Datalink (CPRD). CPRD is the English NHS observational data and interventional research service, jointly funded by the NHS National Institute for Health Research (NIHR) and the Medicines and Healthcare products Regulatory Agency (MHRA). It provides researchers with access to 52m medical records.

Speaking at the event, Peter Knight from the Department of Health noted that resolving issues around ethics and consent has been important work. As Peter explained:

"Research which had been undertaken showed that less than 1% of patients would opt out of having their data used where identifiers flow to a safe haven to support life sciences research. Most people are philanthropic: they know their data could help future generations and particularly their own families."

"THE CLINICIAN IS NO LONGER THE KEY OBSERVER. IN A WORLD THAT IS ADOPTING MOBILE TECHNOLOGIES AND SOCIAL NETWORKS ON A LARGE SCALE, WE MUST LOOK AT THE INTERACTION BETWEEN CLINICIAN, ALGORITHM AND PATIENT."

Iain Buchan, NWeH

The creation of the CPRD, and the change in mind-set to an NHS focused on innovation, has cleared the path for technology companies at all levels to unlock the value of health data in the UK.

TECHNOLOGY ADVANCES

Although the UK has 'one NHS', it is in fact a number of organisations working together to improve patient outcomes. The structure of the NHS and other healthcare providers (HCPs) means that it is often more difficult than one might expect to share data across multiple sites and stages of the care pathway from primary, secondary and tertiary care.

However, to improve healthcare outcomes, we need this data to be integrated to allow researchers to build holistic views of disease management.

Technological developments to enable the combination of data from multiple and often disparate sources are critical for successful translational medicine. At our foresighting event, we heard from organisations which are making real progress in unlocking their potential at local, regional and national levels across the care pathway from discovery through development to delivery.

At a local level on discovery, IDBS is working with a number of clinical academic organisations including King's College London to integrate data from multiple hospitals. This allows clinicians to make better decisions about treatments and patient management, facilitating earlier diagnosis, prognosis and treatment.

Paul Denny-Gouldson, VP of Translational Medicine at IDBS, noted: "The fact that it's hard is no reason not to do it. We need to get new treatments from research into the clinic much faster, and also requirements from clinic back into research much faster; but as researchers, we don't trust data unless we have the context to interpret and analyse it ourselves. That means you need as much good quality data as possible."

At a regional level, development initiatives such as Manchester-based North West eHealth (NWeH) are providing a secure environment for aggregating, anonymising and analysing health-related data from defined populations, to be used for developing health provider services and enabling scientific research. NWeH currently has access to over 400,000 patient records and by 2013 the figure will exceed two million. NWeH will provide the region's population with better healthcare decision making and ultimately better healthcare outcomes.

But as Professor Iain Buchan, CSO NWeHealth, points out: "bigger is better, in databases is a myth". In the US, there are 174 million patient years of observational medical outcomes research yet this has delivered non-reproducible results because of different data sets, different results and different modelling methodologies. Professor Buchan explains: "To realise the value of this data you need systems that talk to another and say 'hang on, you'll run into problems if you make that assumption'." This is especially important at a time when we look forward to an environment that seeks to interrogate multiple data sources. In the future making results from one group available to another will be increasingly important. If one group is investigating disease through social modelling and another is looking at patient behaviour, then we need systems that automatically flag up related findings from one group to another and make sense of the connections between the data.

Finally, at a national level of delivery, the integration of records using anonymised identifiers brings with it the possibility of creating 'virtual' records by matching records from multiple health and non-health sources. This large-scale data processing is being made more practicable by the use of highly scalable and relatively low-cost cloud computing platforms such as Google BigTable and BigQuery. PA's James Mucklow demonstrated that with cloud it is possible to analyse year-on-year

"RESEARCH WHICH HAD BEEN UNDERTAKEN SHOWED THAT LESS THAN 1% OF PATIENTS WOULD OPT OUT OF HAVING THEIR DATA USED WHERE IDENTIFIERS FLOW TO A SAFE HAVEN TO SUPPORT LIFE SCIENCES RESEARCH. MOST PEOPLE ARE PHILANTHROPIC: THEY KNOW THEIR DATA COULD HELP FUTURE GENERATIONS AND PARTICULARLY THEIR OWN FAMILIES."

Peter Knight, UK Department of Health

A&E admissions to a large hospital in as little as twenty seconds. These exceptional results, by providing the ability to conduct analysis of large-scale population data so rapidly, will change the way we deliver care.

NEW BUSINESS MODELS

Advances in access to clinical records, and in the IT tools to interpret them, are providing a wealth of new data that has commercial value to both the existing incumbents and new entrants to the healthcare sector. However, in addition to providing appropriate access to the data and developing robust analytical tools, it is now necessary to challenge conventional assumptions to develop and test new models of commercial interaction that recognise the contribution of how the data influences commercial decisions. If we are to develop outcome-based models of healthcare then we require innovation in the way clinical data is used by businesses. Nowhere is this more evident than in the development, management and application of the data sets at the heart of translational medicine.

Life science companies have traditionally based their go-to-market propositions on a product, predicated on approved indications and defined by its efficacy benefits. Data, experience and

the need to deliver targeted therapies that deliver real benefit to patients have resulted in an increased focus on the patient through translational medicine. This focus has moved the life science industry to think about integrated health value propositions that demand product, technology and service integration.

The increased use of biomarkers and companion diagnostics to stratify distinct patient populations is a good illustration of this. In the future we expect many more therapies to be linked to a companion diagnostic product, gene analysis tool and potentially a monitoring device. In order to do this, pharmaceutical and biotech companies will have to work more proactively with device companies as well as clinical data to determine patient cohorts that benefit from receiving a particular therapy. One such example is the collaboration between Arizona State University and Pfizer, who will work together over four years in an initiative sponsored by the National Institutes of Health to discover proteins, or biomarkers, to help predict cardiovascular disease and to assess potential new treatments in people with type 2 diabetes. In the future the information that determines this cohort could come from academia or health care providers like the NHS rather than from pharma clinical trial data.

How should this contribution be valued and can traditional licensing and royalty models be used in this space?

Not only is there a need to find the mechanisms to deliver appropriate value to the contributing partners (academia, industry and healthcare provider) but there is also a need to be innovative in terms of approaches the partners take to funding this research. As increasing external investment is put into R&D, the industry will need to be more agile in the way it accesses and funds the data it requires. This will be particularly evident as we shift from a price-based reimbursement model to one of predicted outcomes and risk sharing. Here we are likely to see an upstream shift toward risk-based investment during development. There will be earlier collaborations between those with the clinical data and those with the drugs.

In a world of increasing translational medicine initiatives we need to ensure we have the systems and processes that value each of the partners' contributions. Without these, the stakeholders will find it increasingly difficult to unlock the potential of sharing end-to-end data across the discovery and care pathways, to the detriment of healthcare innovation.

THE FUTURE

As organisations such as IDBS, NWeH and CPRD have shown, the real power of large data sets only emerges when we find ways to analyse them in a consistent way, allowing us better to understand disease progression, the impact of treatment interventions and ultimately the impact on healthcare outcomes. In the future, interpretation could become more, rather than less, complex as more sources of data are combined – in particular, data from the three pipelines of R&D, clinical audit and clinical commissioning. Social care data could add another important perspective but, again, adds a further layer of complexity.

TRANSLATIONAL MEDICINE

Combining data into large datasets is one area of technology-enabled progress. Another is the use of social networks and mobile devices (perhaps in conjunction with cloud) to achieve deeper patient engagement. Clinicians see patients for about five hours a year, but the patients have their mobiles with them for the remaining 8,755 hours. The incremental cost of mobile applications is minimal, but the opportunity they provide to inform clinicians about patient status and behaviour – and to integrate that information into a patient treatment regime – is incredibly powerful.

PA'S JAMES MUCKLOW DEMONSTRATED THAT WITH CLOUD IT IS POSSIBLE TO ANALYSE YEAR-ON-YEAR A&E ADMISSIONS TO A LARGE HOSPITAL IN AS LITTLE AS TWENTY SECONDS. THE ABILITY TO CONDUCT ANALYSIS OF LARGE-SCALE POPULATION DATA IN THIS TIME WILL CHANGE THE WAY WE DELIVER CARE.

While there is still work to be done, we now have working examples of translational medicine in action and delivering on the promise of facilitating the creation and development of effective medicines that lead to better outcomes for the right patient at the right time.

**For more information
please e-mail:
healthcare@paconsulting.com**



Hear the video speeches from PA's and 4D's future of healthcare foresighting dinner on translational medicine.

CLOSING THE LOOP BETWEEN TREATMENT AND PATIENT RESPONSE: DOSE MONITORING AND RECORDING

by Sarah Wren,
PA Consulting Group

Drug treatment in the past has typically been an open-loop system. There has been little need for feedback of individual responses to medication beyond that required for clinical trials and market approval. However, this is changing as the pressure increases on pharmaceutical companies to show both the efficacy and cost-effectiveness of a dwindling pipeline of drugs. Closing the loop by means of diagnostics, payment-by-results and measurement of individual responses to treatment is becoming a reality that is being driven by hard economics.

In addition there is a corresponding push from the new Generation Y patients and practitioners to embrace technology-enabled management of treatment as a partnership. Underpinning this, enabling the accurate assessment of patient response, is recording the dosing regimen that the patient has administered.

Of all the stakeholders that have an interest in dose monitoring, it is the pharmaceutical company that is best placed to co-develop the technology with individual drugs; not least because the value of dose monitoring starts with clinical trials. Its use becomes a powerful tool to demonstrate the effectiveness of new drugs and achieve their full potential in a changing market.

However, although this incentive may be laid at pharma's door, pharmaceutical companies are not themselves well equipped to develop dose tracking and associated technologies. The specialist disciplines required to develop dose tracking technology range from device design, through software, sensing, communications and electronic technologies to industrial design and regulatory compliance.

Few companies have this collective experience in-house, and even fewer have a successful track record of developing such technology in a regulated environment.

We believe there are a number of key success factors for successful product development in this area:

DOSAGE EVENT CAPTURING

Drawing from a range of industries to identify novel, cost-efficient mechanisms for sensing and actuation of devices.

DATA STORAGE, COMMUNICATION AND REMOTE TRANSMISSION

Delivering embedded systems for medical devices but also supporting software for personal communication devices, desktop and server environments and secure internet infrastructure to securely manage data that is potentially both sensitive and valuable to you and your patients.

STAKEHOLDER ENGAGEMENT AND USER INTERFACE

Building the whole user experience from consumer product hardware to web interfaces, helping to bridge the gap between technology and patient.

REGULATORY AND QUALITY COMPLIANCE

Using agile software development to ensure compliance with the required US and EU regulations around medicinal products, medical devices and combination products.

INTELLECTUAL PROPERTY (IP)

Securing your IP rights is essential. Novel IP ensures that your position in the market is secure.

For more information please e-mail: healthcare@paconsulting.com

INHALER OF THE FUTURE – DEVELOPING THE FUTURE OF HEALTHCARE

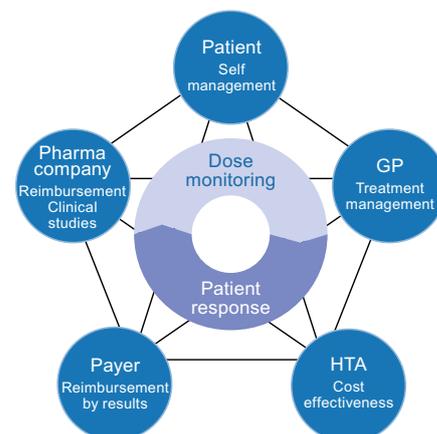
We are seeing a revolution in healthcare, enabled by technology, that provides individual patient information and, as a result, a far better understanding of disease states and the effectiveness of treatments. The drivers facilitating this change include evolving commercial models and new entrants into the healthcare arena.

As an example of the future of healthcare, PA has developed a concept for the 'inhaler of the future' that challenges conventional assumptions and applies the developments in information to deliver this exciting vision.



[See a video of PA's concept for the 'inhaler of the future'](#)

Figure 1: Many stakeholders can benefit from closing the loop between dose taken and clinical response



EARLY COMMERCIALISATION DECISIONS: BETTER INFORMATION CAN IDENTIFY WINNING MEDICINES

To bring profitable drugs to market in an evolving healthcare environment, companies need early insights. A recent survey found that they still have work to do.

By Jasveen Chugh, Jim Andrew, Craig Wylie and Ken Fyvie, PA Consulting Group

To succeed in today's high-pressure environment, pharma companies need to target investment at the drugs with the most potential. That means picking winners as early as possible in the development lifecycle. Go/no-go decisions can no longer wait until Phase 2, particularly as companies move to developing drugs for rare diseases with little certainty of reimbursement potential 10-15 years ahead.

All that means that companies need excellent information to support their decisions. But companies are telling us that they don't yet have what they need. To make early commercialisation decisions with confidence, companies need to fill the gaps in the data they have and get better at deriving insights from it. In a recent survey of senior decision makers, PA investigated how far companies are succeeding and what they need to do to unlock their business's future potential.

WHAT INFORMATION DO COMPANIES NEED?

Because the market is demanding patient-centric solutions, predicting reimbursable value requires reliable information about the needs of stakeholders (prescribers and payers, as well as patients), and the relationships between them. However, such information is currently difficult to obtain, particularly when it comes to projecting stakeholder requirements and relationships into the future.

WHAT'S WRONG WITH WHAT COMPANIES CURRENTLY HAVE?

Many companies buy in data from outside – indeed, many larger companies are suffering from data overload and duplication. This third-party data is useful up to a point, but there are crucial gaps, for example with regard to emerging markets, discovery/Phase 1 competitors and label claims.

This, together with a shortage of expertise in certain specialist areas, makes it difficult for companies to obtain the insights they need to identify winning drugs.

HOW TO PLUG DATA GAPS AND OBTAIN BETTER INSIGHTS

Companies can secure competitive advantage by addressing this problem in a timely way. In particular, they need to:

1. continuously monitor the marketplace to discover the requirements of healthcare stakeholders
2. catalogue and understand data already held within the organisation to increase breadth and depth and reduce duplication
3. be creative in filling data gaps: some can be filled from the marketplace, others will require data from non-traditional sources and new research partnerships
4. challenge the tools and techniques used to collect, organise and analyse data – could novel tools and techniques yield greater insight?
5. source expertise and opinion that can generate better insights from the available data.

For more information or to receive the full report please contact healthcare@paconsulting.com





CLICK BELOW TO READ MORE ON PATIENT-CENTRIC HEALTHCARE

How can smart packaging enable patients to manage their medicine more easily?
Read PA Consulting's view in Pharma technology magazine.

The impact of the global economy on the future of the pharmaceutical industry.

Generics firms must embrace the payment-by-results model and integrate new technologies.

Pharma must build 'patient-empowered social networks' into new patient-centric business model.

The UK's potential in biomedicine.

Actions speak louder than words: six practical ideas big pharma can act on today to navigate an uncertain healthcare economy.

Why do pharmaceutical companies need a robust evidence strategy to unlock market access? – Read PA's view.

Realising the potential of stratified medicine – PA article in Pharmaphorum.

How has news questioning the safety of medical devices misled the public about testing protocols? PA article in Medical Design Technology.

Developing a novel diagnostic instrument in nine months.

Healthcare for London - Improving stroke services.



INTELLIGENT HEALTHCARE

Intelligent health is the effective use of analytics and connected technologies to enable a shift from curative/reactive healthcare to prevention and health management, so allowing patients to be cared for nearer to home.

This article focuses specifically on the implications of telehealth and telecare on the future of healthcare.



“The results of the Whole System Demonstrator report should be welcomed as they highlight how the implementation of telehealth can deliver benefits to those patients who suffer from long-term conditions.”
Listen to further comment from PA’s Ivan McConnell on the significance of this major telehealth trial.

TELEHEALTH HAS A CRITICAL ROLE TO PLAY IN REDUCING COST AND IMPROVING QUALITY OF HEALTHCARE PROVISION

By Chris Steel, Proteus Duxbury and George MacGinnis, PA Consulting Group

Demographic and other changes are tending to drive healthcare costs upwards, but most countries also face downward pressures on healthcare budgets. Telehealth will play a central role in reconciling these conflicting influences, while satisfying payers’ increasing emphasis on outcomes. By making telehealth part of a sustainable, effective business model that manages population health, the providers, payers and pharma companies can develop a joint response to current needs:

- Providers can use telehealth to transition from current models of care, focused on efficiencies, interventions and disease management, to new models that focus on outcomes, prevention and wellness
- Payers can use it to interact personally with members or customers, and to keep them healthy and out of hospital for as long as possible

- Pharma companies can use it to develop a patient-centric approach that improves outcomes and helps companies provide transparency while maintaining shareholder value.

Virtually all countries are finding that their current approach to healthcare delivery is unsustainable because of increasing costs driven by an ageing population and a rising incidence of chronic conditions.

In the US current reforms mean that the system faces additional demand from coverage of the previously uninsured. Even without the introduction of universal coverage in 2014, the number of people needing care was forecast to quadruple by 2050. In addition, data from the Kaiser Foundation shows that the cost of healthcare has been increasing about five times faster than overall inflation since 1999.

All these factors are placing extreme demands on healthcare systems as a whole. At the same time, we are seeing an increasing drive from payers to control costs, combined with an increasing emphasis on personal health, and changes in reimbursement to reward population health outcomes rather than treatment.



Hear from PA healthcare expert George MacGinnis on the implications of the Whole System Demonstrator programme – the largest randomised control trial of telehealth and telecare in the world.

All in all, there is now the strategic and financial need, together with the patient demand and technical capability, to use technology to drive a transformation in the way healthcare is delivered. Developments in telehealth will be central to this transformation, enabling a model in which fast, efficient, virtual care delivery is the new norm rather than ancillary to it. Adopters of technologies such as in-home patient monitoring, telepharmacy, tele-ICU (intensive care unit), tele-ED (emergency department) and teleconsultations will quickly realise lasting benefits including:

- Patient wellness – telehealth will help the healthcare industry move towards new models of accountable care and outcome-based medicine. There will be an emphasis on prevention, higher-quality care and early treatment of chronic conditions, allowing population risk to be shared more easily between all industry participants.
- Reduced operating costs and greater efficiencies – telehealth will reduce administration and travel overhead and allow more efficient utilisation of physicians and nurses. It will be critical in avoiding expensive re-admission penalties.
- Improved access to care – telehealth will address staff shortages, particularly in rural areas, by encouraging maximum resource utilisation and enabling remote delivery of expert care. This move should increase patient and caregiver satisfaction.
- Greater outreach – telehealth will allow use of new technologies to increase reach and referrals, and improve relationships with local physicians and community hospitals.
- In the US many early adopters are already seeing these benefits materialise. The Veterans Administration, for example, has found that remote monitoring of chronic conditions has reduced hospital admissions by 63% and emergency room (ER) visits by 40%.

Centura in Colorado has reduced the number of required home visits for CHF patients to 3.5 a month, from 6-8.

In the UK, too, telehealth (along with telecare) is seen as playing an important role in helping the NHS deliver more and better services without any increase in funding.

This promise has been confirmed by the Department of Health's Whole System Demonstrator (WSD) programme, the largest randomised control trial of telehealth and telecare in the world. It involved 6,191 patients and 238 GP practices across three sites in Newham, Kent and Cornwall.

Given the need for alternative models of care delivery, the reported benefits of telehealth solutions and significant activity from early adopters, how should the main players in the healthcare industry respond?

Developing a sustainable and effective business model that manages population health will allow organisations to respond to and capitalise on greater levels of population risk-sharing between system participants.

Telehealth will be a key component of that business model, and has implications for all system participants involved in the delivery and management of care for patients. In adopting telehealth, there are significant opportunities to exploit, as well as large challenges to overcome. It will be essential to respond to emerging trends ahead of the competition.

On the following pages, we provide PA's expert perspective on some of the likely implications for providers, payers and pharmaceutical companies.

PROVIDERS

Virtual healthcare will become a key component of the 'new normal' for providers of healthcare. They can use telehealth to help them transition from current models of care, focused on efficiencies, interventions and disease management, to new models that focus on outcomes, prevention and wellness. While some providers have begun this transformation, many are still waiting to see how reimbursement models evolve.

There are five steps that providers can take to establish services and unlock the potential to profit from advances in telehealth:

1 CENTRALISE YOUR EXISTING PORTFOLIO OF TELEHEALTH SOLUTIONS AS SHARED SERVICES

Individual telehealth offerings can be bundled together centrally and offered both internally and externally. This service-based approach has many benefits over the traditional point-based approach. The benefits lie in bundling services that share an underlying business model and enabling technology.

Avera eCARE, for example, is a suite of services provided from Sioux Falls, SD, that provides 24-hour rural access to specialty care physicians and pharmacists, and supports the rural healthcare workforce. Under the eCARE banner, Avera provides a number of services to the mid-west including teleconsultations, telepharmacy, tele-ICU and tele-ED.

2 EXPLOIT REVENUES FROM SOLUTIONS THAT ARE CURRENTLY REIMBURSABLE TO ESTABLISH INVESTMENT FOR FUTURE GROWTH

The bundling of telehealth services also enables the cross-subsidisation of innovative services that are strategically important, but offer limited short-term financial benefit under current reimbursement models. While many telehealth encounters are currently reimbursable in the US many others are not, and there are still significant barriers to overcome in getting reimbursed. The current rules governing where and how services need to be delivered are complex and overly burdensome: for example the definition of what can and cannot be designated as an 'originating site'.

Providers everywhere need to understand the implications of evolving reimbursement models, and advocate aggressively for more favourable telehealth 'rules of engagement'.

3 GO FOR GROWTH BY OFFERING VIRTUAL CARE SERVICES TO OTHER PROVIDERS AND SECURE VOLUME TO DRIVE DOWN UNIT COST

Healthcare providers with strong brands and industry reputations for innovation will capitalise on their existing virtual health investments to develop turnkey solutions that can be packaged for other

health systems and providers. Those providers that can move quickly stand to gain the most.

Kaiser Permanente, for example, has been very active in partnering with technology providers to pilot and trial a variety of telehealth technologies within its Garfield Innovation Center. It is already looking to broaden the reach of existing solutions.

4 INTEGRATE SERVICES WITH HOME HEALTH ORGANISATIONS

Home health agencies in the US focus on the reimbursable 60-day period after discharge. Chronic disease however requires continual monitoring if the benefits of accountable care and outcome-based medicine are to be realised. Ongoing post-discharge collaboration between providers and home health agencies needs to become more prevalent in order to manage population health effectively in an accountable care model.

Organisations such as Oakdale-based South Shore Home Services, which has benefited from government grants for investing in telehealth, have seen their hospitalisation rates decrease by up to 5%.

5 IMPLEMENT ROBUST TELEHEALTH TECHNICAL ARCHITECTURES THAT INTEGRATE SEAMLESS WORKING ACROSS MULTIPLE CARE SCENARIOS

Patient care will increasingly be delivered and co-ordinated across multiple organisational and system boundaries. Care pathways will need to be supported by technology architectures that are open (for interface connectivity), secure (for data management) and scalable.



CATHOLIC HEALTH INITIATIVES: DEVELOPING A PLAN FOR A NATIONAL VIRTUAL HEALTH SERVICES PLATFORM

Catholic Health Initiatives (CHI), a large US-wide healthcare system, wanted to introduce an integrated portfolio of telehealth services to deliver quality care more efficiently to under-served rural locations, improve the benefits from local initiatives and position itself better to respond to healthcare reform.

PA developed a three-year business plan for a single Virtual Health Services platform for use within a variety of care settings across 19 different states. The plan included market analysis, a financial model, a technology model, and an organisational and target operating model. We created a roadmap to help CHI achieve year-one goals and establish the subsequent direction of travel.

Now CHI can use its healthcare professionals more efficiently, reducing reliance on expensive external services, and increasing its national footprint in a co-ordinated, robust manner.

IMPLEMENTING TELEHEALTH TO IMPROVE CARE: MAKING SCARCE RESOURCES GO FURTHER

The outer London Borough of Bexley has a larger-than-average elderly population, and faces increasing clinical and financial challenges in managing patients with long-term conditions. 25,500 (over 11%) of local people come into this category, and the figure is increasing, placing pressure on hospitals. Bexley's Business Support Unit (BSU) aims to deliver more of these patients' care in community settings.

In partnership with telehealth technology specialist Tunstall, PA has helped to implement telehealth for 50 patients with COPD (chronic obstructive pulmonary disease). Patients are equipped to monitor their vital signs at home with remote support from clinicians. PA is now helping Bexley develop plans for deployment to more COPD patients and those with other long-term conditions. There will be a full evaluation of benefits, a service model and robust criteria for patient selection.

Benefits being identified include reduced emergency admissions, earlier discharge from hospital and more effective use of scarce clinical time. Patients are becoming more independent, confident and proactive in monitoring and managing their own conditions.



“PLEASE FIND ME A PHYSICIAN MORE PREPARED TO MOVE WITH THE TIMES.”

Quote from an 85-year-old patient whose rheumatology physician refused to do a teleConsult with her at her critical access hospital, requiring her to make a 2.5 hour journey to a medical centre.

PAYERS

Business models at US health insurance companies are changing rapidly. Healthcare reform, the introduction of insurance exchanges, changing consumer expectations and the movement of millions of baby-boomers from full-time employment to retirement – all these changes are shifting the focus from the employer to the individual. It is more critical than ever before to interact personally with members, and to keep them healthy and out of hospital. Payers recognise telehealth as a critical tool for meeting these needs.

Health insurance companies in the US are already exploiting telehealth solutions to improve the wellness of their members and reduce the cost of providing healthcare. A recent study at Aetna, for example, concluded that 164 out of 315 CHF patients who used a remote monitoring system increased their independence and avoided hospital stays.

Some US payers have diversified their business by selling and profiting from telehealth services offered to healthcare providers. For instance, OptumHealth, a subsidiary of UnitedHealth Group, provides the infrastructure and expertise to deliver a variety of services such as teleconsultations.

Commissioners in the UK, too, are taking a keen interest in telehealth. PA has been working with Tunstall, a leading provider of telehealth solutions, to help three organisations – Bexley Business Support Unit, Oxleas NHS Foundation Trust and IPCC, a practice-based commissioning consortium – to evaluate and implement assistive technologies. Indications are that telehealth can deliver benefits for the commissioners and providers of care, and result in better outcomes for patients. Payers should consider investing in patient-directed healthcare in the following ways:

1 USE TELEHEALTH PROGRAMMES TO PARTNER WITH PROVIDERS AND DRUG COMPANIES IN MANAGING POPULATION HEALTH AND SHARING MORE OF THE RISK

US insurance companies should be spearheading the development and commercialisation of patient-centric health monitoring. They should promote adoption of self-monitoring devices to improve outcomes and reduce cost. Blue Cross and Blue Shield of Minnesota, for example, are helping to finance the Minnesota Telehealth Network, which is designed to expand rural residents' access to specialty consultations. Blue Cross not only reimburses the consulting physician but also pays the facility fee for patient services.

2 EXPLOIT TELEHEALTH AS A KEY TOOL TO HELP ADDRESS POTENTIAL UNMET NEED

Treating this population within the ER and in hospital beds using traditional care models will be expensive. Telehealth extends the reach of care delivery, allowing key care decisions to be taken before a patient arrives at a high-cost/high-demand point of care. For example, Humana is using remote patient monitoring to improve the care of members with Congestive Heart Failure.

3 USE TELEHEALTH SOLUTIONS TO HELP REDUCE LENGTH OF STAY AND OVERALL COST PER EPISODE, AND TO IMPROVE QUALITY OF CARE

Telehealth services delivered within a hospital, such as virtual nurse coaching, e-hospitalists and tele-ICU, can have a significant impact on length of stay and quality of care, thereby reducing cost and error rates. Six hospitals serving patients in rural Maryland are using a \$3m grant from CareFirst BlueCross BlueShield to improve the quality of patient care by implementing a tele-ICU programme in each of their intensive care units.

4 FOCUS ON SOLUTIONS THAT HELP REDUCE HOSPITALISATIONS AND RE-ADMISSIONS

Enrolling an individual in a remote monitoring programme allows their medical condition to be managed more effectively. Combined with alerts when an intervention is required, monitoring keeps people at home and out of hospital, where care is expensive. Telehealth also encourages people to take ownership of their condition, adhere more closely to their prescriptions and become accountable for their overall wellness.

5 EXPLOIT EMERGING TELEHEALTH SOLUTIONS TO GET CLOSER TO PATIENTS AND PROVIDE LIFESTYLE SUPPORT AND ENCOURAGEMENT

If Electronic Healthcare Records are the 'Enterprise Resource Planning' (ERP) of the healthcare industry, then telehealth is its 'Customer Relationship Management' (CRM). Telehealth offers new and unique ways for payers to understand members or customers through monitoring not only their health but also more importantly their lifestyles. Data from monitoring day-to-day activities will deepen insight and enable the eventual transition to just-in-time medicine. Organisations will need to invest in sophisticated data mining and analytical technologies in order to take full advantage of the availability of these new data sets.

INTRODUCING NEW TELECARE SERVICES FOR 3,000 ADULTS, WITH NO DISRUPTION TO THEIR CARE

With the aim of securing best value from its budget for adult social care, Wiltshire Council, a UK unitary authority providing local government services to almost 500,000 residents, was re-procuring its monitoring and response service and wanted to introduce telecare for any of its service users who could benefit.

The council asked PA to develop a business case for mainstreaming telecare and then to manage the transition to the new arrangements. This was a radical transformation for both organisation and service users.

PA's business case showed that telecare could save the council £2m a year by reducing the reliance on domiciliary and residential care. We also identified an opportunity to offset costs by offering the telecare service to private paying customers and designed a benefits framework and roadmap to enable the council to realise the savings.

PA then worked closely with Tunstall, the market-leading provider of telecare solutions, to help plan and implement the new arrangements. We migrated 3,000 customers to the new monitoring and response provider, safely and without service disruptions. We also trained 250 council staff to refer service users for telecare. Wiltshire Council and its providers are now actively promoting telecare to over 10,000 target customers across the county.

IMPROVING PAEDIATRIC CARE: TELEHEALTH IN PRACTICE

At a PA Future of Healthcare roundtable, Jim Crawford, Vice President and the Southern California Business Information Officer for Kaiser Permanente, shared the following example:

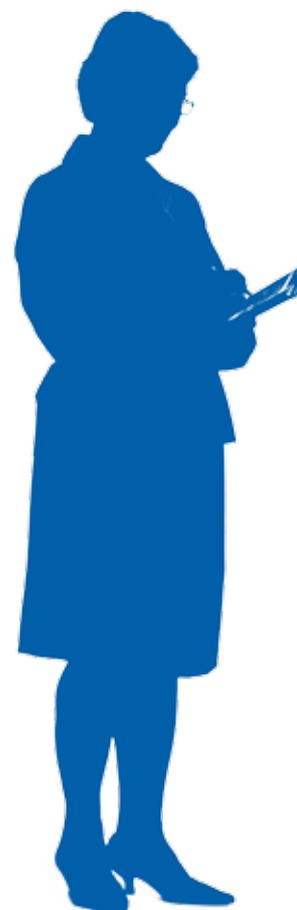
Suppose there is a mother with four young children and one of them has an ear infection – a condition that takes less than a minute to diagnose with an otoscope.

In the current healthcare model, the mother has to leave work (at a cost to economy) and potentially bring all four kids with her to the doctor's office.

All four children are being exposed to a hospital environment unnecessarily. Plus, data shows that 85% of the time, that child will get a second ear infection, so it's likely that the mother would have to repeat the entire process.

Alternatively, what if that same mother had an otoscope that plugs into an iPad or her home computer? If she thinks that child has another ear infection, she stays at home, doesn't miss work again, doesn't have to have the kids in a sick environment, and sends the data to the physician.

The physician reviews the data remotely, the prescription is mailed out, and the episode is complete.



PHARMACEUTICAL COMPANIES

In an environment in which risk-sharing between participants is expected, and patient outcomes are the key measure of success, pharmaceutical companies should expect increasingly to be paid according to the effectiveness of their products rather than the volume they sell. The integration of telehealth technologies into the pharmaceutical product portfolio presents a real opportunity to develop a more patient-centric approach that improves outcomes and helps companies respond to new requirements for transparency. Investment in telehealth is also yielding new and profitable business models for drug companies that are struggling to maintain shareholder value in an era of declining product pipelines and blockbuster patents.

Pharmaceutical companies should seek to exploit telehealth technologies across their business in the following ways:

1 PAIR PRODUCTS WITH DELIVERY AND/OR MONITORING DEVICES

Such partnerships will provide closer interactions with both patient and physician, and make it easier to monitor and encourage patient compliance. They can increase loyalty towards the branded drug or generic with which it is associated.

Both Sanofi and J&J have already launched iPhone-based blood glucose devices in an attempt to capitalise on such opportunities.

2 USE TELEHEALTH DEVICES TO BRING DOWN THE COST OF CLINICAL TRIALS

Telehealth can be used to monitor patients outside a clinical setting, which can speed up the clinical trial process, increase the size of the physician pool and reduce overall study cost. Companies such as Pfizer are proposing to allow patients to participate in clinical trials from home rather than a clinic or doctor's office by using computers or smartphones. They hope that this use of personal technology will allow them to recruit and monitor patients more easily and cost-effectively.

3 UTILISE TELEHEALTH DATA TO PERFORM SAFETY AND EFFICACY ANALYSIS

'Real world' data collected through home monitoring can be analysed to support post-market surveillance, adverse event reporting, trial design, patient recruitment and, importantly, payment. Risperdal Consta, a J&J company in France, has a device-drug combination for bipolar patients where payment is being linked directly to results.

A clear strategy for acquiring this data en masse, and for integrating robust data quality processes and tools, will be critical in making raw telehealth data fit for consumption.

4 IMPROVE THE MONITORING OF PRESCRIPTION COMPLIANCE AND ADHERENCE WITH REMOTE MONITORING DEVICES

Telehealth can help improve patient health and safety, and reduce hospital readmissions. In addition, it will help drive a change towards a more patient-centred world, in which patients will have more control of, and be more accountable for, their health while following a course of treatment or monitoring an illness. North Florida/South Georgia Veterans Health System found that 98% of patients being monitored from their home reported adherence to their medications.

5 ENSURE STRONG COLLABORATION AND DIALOGUE WITH REGULATORS IN ORDER TO AVOID THE STALLING OF TELEHEALTH ADVANCES

Regulatory bodies such as the FDA and other not-for-profit entities will be key partners in navigating the constraints and concerns that might otherwise hamper efforts to advance telehealth. Regular, transparent and open collaboration and engagement will be critical.

For each of these stakeholder groups – providers, payers and pharmaceutical companies – telehealth will be an essential part of healthcare delivery. It will be fundamental to reducing cost, improving outcomes and ensuring patients get the care they need, when and where they need it, at a price their country can afford. Telehealth adoption will help drive an integrated approach to care delivery that will focus on the management of population health.



IT'S A REVOLUTION – HOW WILL THE CURRENT SYSTEMS RESPOND?

By George MacGinnis,
PA Consulting Group

The imperative for radical change is being felt across the world and is created by higher personal expectations of care and increased lifespan of patients with long-term chronic conditions. This is coupled with spiralling costs paid for by a shrinking workforce and financial pressures at a government level.

In as little as five to ten years, we will see the default care setting shift to the home and it will become routine for specialist clinicians to consult with patients from behind their office desktops, communicating with mobile units situated at the point of care.

CHANGING THE BALANCE OF POWER IN HEALTHCARE

Technology is central to the change and will enable the patient to become the informed decision maker and commissioner of a personalised healthcare system.

In the same way as internet banking, in just ten years, empowered hundreds of millions of adults worldwide to take control of their everyday financial transactions, in another ten years we could see people commissioning their own healthcare.

CAPITALISING ON CONNECTEDNESS

It is possible to imagine healthcare with fully joined-up information systems embracing active therapeutic devices, passive monitoring devices and telecommunications, working smoothly across all care settings. This would be underpinned by accurate personal information, safely accessed by those who need it, when it was needed, where it was needed. Routine monitoring of patients with long-term conditions in the home, or even on the move, would be the norm, with data being collected or downloaded automatically to a computer hub or smartphone interfacing with the care systems. This would significantly reduce the need for clinicians to monitor interventions, as well as help early detection and treatment – both achieving increased performance and reducing costs.

Even for people experiencing a crisis who currently receive care in a hospital, the need for specialists to be at the bedside to administer immediate care could be transformed by virtual access from a remote monitoring device. The specialist could talk the emergency services through the diagnosis and actions, significantly reducing the need for hospital beds, ambulance transport and geriatric hospital wards, and improving the speed and quality of care for the patient. The technology is already available today to make this possible and there are suppliers and service providers willing to embrace this approach, often waiting for payers to recognise and reward the value these services offer.

HARNESSING THE POWER OF THE COLLECTIVE VOICE

From internet searches to television documentaries, specialist health information is increasingly available to everyone instantaneously on the home computer. The individual can be more informed and educated about their own health than ever before.

Sites supporting patients with long-term conditions such as Diabetes UK are leveraging the web to great effect. Over 70,000 people have completed an online 'Diabetes Risk Score' to identify those at risk of developing Type 2 diabetes and in excess of 20,000 people have now signed up to the Diabetes UK social networking page on Facebook. Sites incorporating social media, such as Patientslikeme.com, are creating communities of genuinely expert patients whose knowledge of their condition and options for treatment exceeds that of many of the clinicians they encounter. So there is a clear, unrealised potential to apply new thinking to harness the voice of the patient/carer and support a transition from passive recipients of information into partners, developing new methods of commissioning and co-designing telehealth solutions.

WHAT ROLE WILL THE HEALTH PROVIDERS PLAY?

A complex legacy of care provider infrastructure, established professional groups, payment systems and regulation all reinforce the traditional approaches to delivering care. Technology has the potential to act as the trigger to change those approaches, enabling patients to take their place at the heart of the health systems as informed decision makers and commissioners, but how will traditional providers respond? Will they embrace the change and seek to capitalise on the opportunities presented by technology and the changing role of patients, or resist: unwilling or simply unable to respond to the shifting landscape?

CHANGING THE WAY CARE IS DELIVERED

Despite the controversy surrounding large-scale investments in health IT – notably experience of the National Programme for IT in England and moves to stimulate meaningful use of health information in the US – there is widespread recognition that a modern health information system is now an imperative for effective healthcare. Patient health information is increasingly available and shareable – both within care-providing organisations and with the patient and informal carers – and systems will soon be able to support this wider sharing beyond traditional boundaries. The opportunity to create intelligence by segmenting patient information on factors such as specific conditions, demographics and expectations offers a unique way of addressing future needs. This information could be used to develop new telehealth solutions and effectively reach and target those areas of greatest benefit to the public and patients, something relevant not only in social healthcare systems but where risk is shared under arrangements such as the US accountable care proposals. Other sectors already harness information in this way, for example retailers have developed sophisticated marketing strategies from loyalty card information.

There has been a huge shift away from common, standard systems – the introduction of which proved impossible under the National Programme for IT across the NHS in England – towards a world where effective information sharing is possible. Significant assets are tied up in out-of-date healthcare facilities, often with unusable, redundant resources locked in; patient facilities are failing to satisfy the modern patient and the battle against healthcare-acquired infection is a constant worry. Then there are the many healthcare workers who are still uncomfortable using technology to capture and process information and will have to change and embrace information systems as a core part of their working day. Modernising and dismantling current infrastructure has already started. Organisations like

Catholic Health Initiatives in the US are developing new service delivery models, reviewing their supply chains and embarking on innovative implementation strategies.

In this new approach to creating patient-centred information, the use of common standards is incentivised through payments linked to ‘meaningful use’ or where information exchange such as sending a discharge summary is a prerequisite for payment of standard tariffs.

NEW APPROACHES FROM THE SUPPLIER MARKET

While technology suppliers have recognised the vast opportunities they have in the healthcare market, they will need to develop a new range of products tailored to integrate care equipment into the home. Forward-thinking suppliers will be already starting to build a direct consumer brand and selling direct to the new patient commissioner of the future. There will be a new market in high-volume, low-cost products for use in the home by non clinicians – be it self-dispensing injectors, home testing kits or monitors. Why would the empowered patient want to go to the inconvenience of travelling to have medication administered?

REGULATING AND GOVERNANCE

The transformation in the way healthcare is provided will also need change in regulatory regimes. Connected devices supporting the delivery of healthcare have changed the way data is collected and stored, the way clinical decisions are made, and indeed the way that health interventions are made.

Regulators will need to react to new reimbursement chains, resulting from the rise of a new class of stakeholders in mobile healthcare (equipment vendors, mobile network operators etc.). Regulators are already engaged in an ongoing debate around the definition of ‘medical device’.

A modular approach to regulation will help deal with the complexity of connected healthcare systems. This means that whilst preserving the integrity of a regulatory mandate across all the elements in a chain of healthcare provision, different parties will be able to innovate independently without onerous re-regulation at every point.

This should be underpinned by an adaptive approach that considers improvements to connected healthcare without the need to go back to the beginning in regulatory terms each time such a refinement is introduced.

This has already been adopted in the pharmaceutical sector and has reduced approval times for certain new classes of pharmaceuticals.

Changing the way information is used in health is also prompting a new dialogue over the balance between protecting privacy and being able to offer effective and affordable care services. Systems that have already changed to enable greater sharing of health information, such as Denmark and the UK, have found an astonishing level of public support for these moves. It becomes easier to make the case for sharing health information when people can really see how it improves their own experience.

So while regulators will always be guided by the principle of ‘at least do no harm’, they need to ensure that the innovation expected of new players entering healthcare is fostered and not stifled by regulation.

**For more information
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PA co-hosted a panel session, which resulted in insights on remote monitoring, regulation, reimbursement, employer incentives and holistic disease management. [Read the summary of the discussions.](#)

PA is helping to implement telehealth for 50 patients with chronic obstructive pulmonary disease. Patients are equipped to monitor their vital signs at home with remote support from clinicians.

We have been helping the Integrated Primary Care Commissioning group in Sutton & Merton implement and evaluate a telehealth pilot.

PA identified potential financial benefits from telecare of £3.4m over three years and improved service outcomes for Hampshire County Council. [Read the case study.](#)

Healthcare reform is driving further investment in connected health, even in an economic downturn. [Read PA's view.](#)

How mobile technologies are changing healthcare of the future. [Read PA's view in the Future of Business blog.](#)

Why the NHS must embrace telehealth on a larger scale, [PA article in the Guardian.](#)

Telecare - it's not just about the kit.

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