Looking AHEAD...

Experts from across all sectors of the industry provide their input on the trends in 2015 that will have the biggest impact on the industry, and how they will shape the future of healthcare.

For this year's special Year in Preview issue we took a slightly different tact than in years past. We are still looking forward, rather than reviewing the events of the past year, however after tapping numerous analysts reports, reviewing multiple thought leadership essays, and talking to dozens of thought leaders, we identified 10 mega trends that are expected to shape the life-sciences industry in the coming years.

1. Innovation — Disruptive Technology Trends in Research

Microchip modeling within clinical trials, DIY biotechnology, 3-D and 4-D anatomical printing, and other sophisticated new and emerging technologies have the potential to disrupt the current research paradigm and that can allow for drugs to be tested without limitations, making clinical trials faster and even more accurate. Expensive laboratory equipment is no longer needed to perform biological experiments; biotechnology is becoming the new IT industry.

2. Personalized / Precision Medicine

With the cost of decoding an individual's genome expected to fall in the next two to three years to $1,000 from its current price range of $10,000 to $25,000, the market for genome decoding in developed countries will explode. This will lead to a greater understanding of disease and the development of new therapies but will also raise complex privacy and cost-benefit issues.

3. Payers — Evidence-based Medicine, Comparative Effectiveness, Cost Containment

Data on outcomes will increasingly be used to develop standard protocols for treating many diseases, resulting in a movement away from the physician-patient relationship and put more pressure on comparative effectiveness and containing costs.

Rising costs around the world will shift the power in deciding how to treat patients from healthcare professionals to payers as a result some major pharmaceutical companies are already responding by changing their R&D strategies.

4. Power of the Patient — The Era of Healthcare Consumerism

As consumers become increasingly more engaged in their own healthcare decision-making along their journey as patients, focusing on costs, quality, and convenience, healthcare stakeholders must accommodate their needs.

5. Specialty Pharma

Today, about half of the top 10 drugs in worldwide drug spend are specialty products, and by 2016, eight of the top 10 drugs will be in the specialty category. For example in 2010, 17% of Medco's drug spend was for specialty products, and this is expected to grow to 40% by 2015. The specialty pipeline will continue to be robust; there are about 600 new drugs in the specialty pipeline, with oncology representing 40% of these pipeline products. Many of these will have new routes of administration, such as oral, which will make patient adherence easier.

6. An Integrated Business Model

To strengthen their ability to compete, life-sciences companies will need to shift their focus from competing on volume to competing on value, and employ new business models to understand data now available from multiple sources. While the health industry has dabbled in social, mobile, analytics, and cloud technologies during the past few years, many organizations have failed to connect them to the major information systems they use to run their businesses — electronic health records (EHRs), research and development systems, and member and sales management systems used by insurers and retail pharmacies.

7. Digital Disruption

The number of medical mobile applications has been rising for years. Patients and doctors find it harder and harder to choose the right app for their health management or work. The next step could be customized mobile apps, such as the pApp, which lets doctors create mobile apps for their patients. Functions of customizable apps should include, for example, logging in blood pressure data or medications taken.

8. Connected Health

Measuring easily quantifiable data is the key to better health. Therefore, the future belongs to digestible, embedded, and wearable sensors that work like a thin e-skin. These sensors will measure all important health parameters and vital signs — e.g., temperature, blood biomarkers, and even neurological symptoms — 24 hours a day. They'll transmit data to the cloud and send alerts to medical systems in real time when, for example, a stroke is happening. It will call the ambulance itself and send all the related data immediately. Examples include hydration sensors for athletes and intelligent textiles that change color to indicate diseases.

9. R&D Crowdsourcing

There is a growing movement within the industry toward open access and crowdsourcing scientific information to accelerate research and development. This open environment requires a new way of thinking about research and breaking down competitive barriers for the greater good.

10. Augmented Reality

Augmented reality is a live view of a real-world environment that is supplemented with computer-generated input, such as sound, video, graphics, or GPS data. Getting information from the Internet by wearing a Google Glass or digital contact lenses would be a huge addition

to the practice of medicine. The data can also be used to educate patients to advance patient adherence by tracking disease management and fitness management.

We also recognize that these 10 mega trends don't tell the whole story. There are dozens and dozens of market factors that will continue to shape and shift how the industry operates. We are happy to share the additional insights from a variety of thought leaders representing different aspects of the industry.

• • •

HEATHER ATON

Chief Innovation Officer, Dudnyk

Trending: Vision and Leadership

Vision and leadership are the most important influences enabling innovation in healthcare. The biggest challenges manufacturers and marketers face right now are fear and resignation. We live in an age of crowdsourcing, big data, EHRs, digitization, evidence-based medicine, journey mapping, globalization, wearables, a world growing with digital health companies and incubators. Incredible innovations have already taken place and their effects will be compounded when the industry begins to fully leverage these elements to actually realize more meaningful connections between providers and patients. Healthcare is no longer about developing a great product and offering a suite of services to fit every marketing or treatment scenario. It's not about selling something anymore. New, powerful data sources help us really focus on understanding the moments of truth in a customer journey. Innovation in healthcare is about building and creating something better/more useful at those moments of truth. And indeed, it's ultimately about value — being bold and brave enough not to look at protecting what used to be or simply containing costs, but rather how to realize greater value in line with a visionary purpose.

• • •

DREW DESJARDINS

Chief Strategy Officer, Dudnyk

Trending: Adherence Programs

The cost of pharmaceutical therapy has always been highly and, at times, unfairly scrutinized, however the relationship between clinical outcomes and drug cost outlays has never been more important. That's why manufacturers who can clearly demonstrate how their drugs contribute to reduced overall cost of care will win in the era of healthcare cost containment. One strategy that can be effective in showing this reduction is by developing an adherence program that works uniquely with the drug therapy. It has been said that the most expensive drug is the one that the patient does not take. However, it's not as simple as saying, "take your medicine as directed." Rather, manufacturers should work with plans to model patient psychographic data that reflect the individual plan's unique patient populations. The models can be used to develop educational approaches that will be much more effective than traditional adherence campaigns, have measureable outcomes, and result in reduced overall cost of care.

NORM ENRIQUEZ, PHARM.D.

VP, Business Development, The Medical Affairs Company

Trending: Biosimilars

A substantial trend that will challenge the U.S. healthcare system will be the adoption of biosimilars into the pharmaceutical armamentarium. The system's ability to make prudent choices, driven by overall patient safety, comprehensive clinical outcome and total value will be tested. Cost-reduction cannot be the primary motive.

• • •

DENNIS HALLIGAN

Director of Marketing, Sharps Compliance

Trending: Medication Returns

Considering best practices to develop data-driven insights for the payer environment will include nontraditional channels. Today, patients often use highly complicated and costly drugs in home settings, which is not new. Manufacturers can offer ways for patients to dispose of non-used medications, which is new. Returned medication-delivery devices can provide a treasure trove of data. If the data are mined correctly, manufacturers can monitor patient behavior patterns and adherence rates and use this information to counsel patients to improve outcomes as part of a patient-support program. The result is better care for patients that returns better patient health, which can then result in better reimbursement and formulary position.

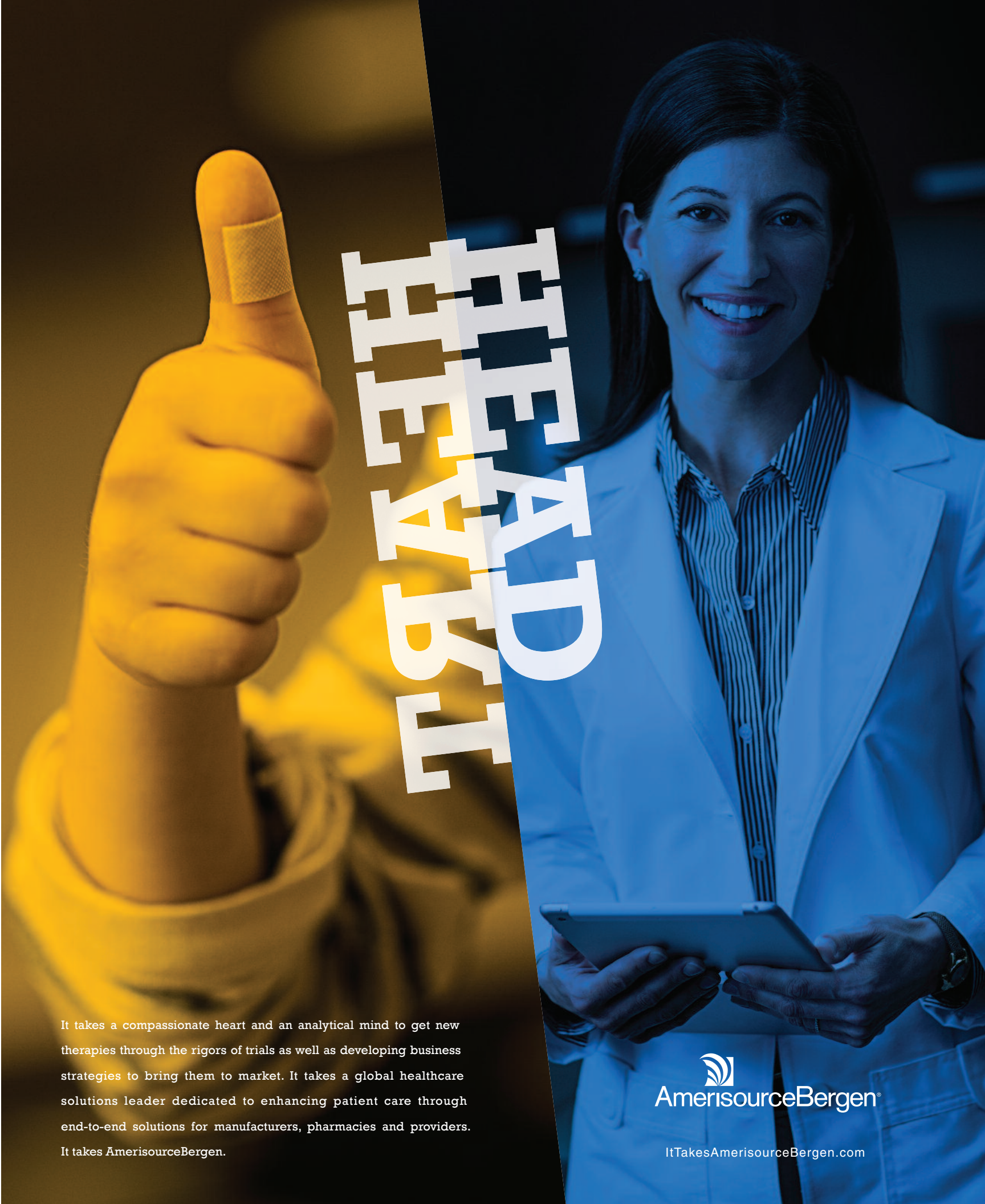
• • •

ANDREW JONES

VP, Pharmaceutical Innovation, AstraZeneca

Trending: Adherence and Compliance

Truly putting the patient at the center of care is an emerging trend that can't be ignored. One thing I think companies need to do is to realize that ultimately they are treating individual patients who are unwell — not treating diseases or populations. The more companies can use new technologies to tailor their products and services to individual's needs the more successful I believe they will be. Adherence and compliance represent crucial issues in improving patients' health and decreasing the cost of delivering healthcare: how can new technologies and solutions improve this age-old challenge? We need to move the conversation beyond adhering to, or complying with, a treatment that is prescribed for patients, we need to understand what we can do to achieve concordance: a negotiated, shared agreement between clinician and patient concerning treatment regimen(s), outcomes, and behaviors; a more cooperative relationship than those based on issues of compliance and noncompliance. Now and more so in the future patients will be better informed about different treatment options available to them. I really believe we can use new technologies to give patients general information about their disease and specific information about their individual situation that can put them in a better position



It takes a compassionate heart and an analytical mind to get new therapies through the rigors of trials as well as developing business strategies to bring them to market. It takes a global healthcare solutions leader dedicated to enhancing patient care through end-to-end solutions for manufacturers, pharmacies and providers. It takes AmerisourceBergen.

AmerisourceBergen®

ItTakesAmerisourceBergen.com

to have more buy-in to their treatment plan and thus achieve better outcomes.

• • •

HARRIET KOZAK

U.S. President, Research Partnership

Trending: Biologic Competition

The biologic market is set to experience notable changes with strong competition from newer products and the threat of biosimilars.

However there is still a lack of awareness and understanding by physicians about biosimilars that needs to be resolved before their uptake can reach predicted levels.

• • •

MIKE MARETT

Consultant, Digital Health Innovation

Trending: Communication Technology

The advancement of communication technology is transforming healthcare. Personalized health — quantified self — paired with virtual counseling, interactive support/education, will flourish in 2015, yielding opportunities for platforms such as Web, mobile, and even virtual reality with empathetic interfaces and improved predictive psychohistory to generate valuable HCP and patient data.

• • •

KEN RIBOTSKY

CEO, Brandkarma LLC

Trending: Transparency of Care

Long-term impact will come through transparency of care. Transparency is slowly permeating healthcare, breaking down walls that were once iron-clad. Going way beyond putting some control in the hands of patients, we will be able to decide if a physician is the right choice for our specific medical problem. Whosmydoctor.com is at the forefront of this movement. Physician education, performance information, personal, and moral/ethical choices will all become data that we as patients can use to make our care choices.

I feel this is so important because it will have such a great impact on our care system. Think about it this way: what other professional service do we buy that has such importance — life and death — where we know so little about the service providers?

• • •

MARTY ROCHE

VP, Global Sales and Marketing, eClinical Solutions

Trending: Comprehensive Analytics

Aggregating and analyzing clinical and operational data jointly to support comprehensive analytics for risk-based monitoring, program oversight, and patient safety will become more important in the coming years.

Best-in-class technologies are available to support customized methodologies to analyze data as a whole simply and easily to support better patient care.

• • •

ED SEGUINE

CEO, Clinical Ink

Trending: Technology at Point of Care

The pharmaceutical industry, and particularly clinical development, has always been data-driven. However, the business model has always been and remains a service model — just look at the dramatic growth in CROs over the last decade.

Until the industry adopts technology at the point of care — the subject visit in a clinical trial — then all other efforts to optimize processes and data analytics will have no meaningful impact. Regulators have endorsed eSource and risk-based monitoring, which represents an opportunity to fundamentally change the business model through technology rather than simply tweaking an existing services-based business.

• • •

KARTIK SHUKLA

Director, Brand and Multi-channel Marketing, Daiichi Sankyo

Trending: Multichannel Marketing

Like with most pharmaceutical companies, the Daiichi Sankyo multi-channel marketing (MCM) initiative started out as an add-on to traditional approaches. But today, with better technological capabilities and data integration, the team has seen its processes mature and is closer to having an integrated view of its customers in partnership with various functions within the organization.

The MCM team today focuses on four core customers: physicians, payers, pharmacists, and patients. In addressing the specific needs of these customers, the team collaborates with its individual brand teams and external agencies to develop channel-specific strategies and execution plans, all while keeping an eye on delivering well-rounded communications to these key customers. The team's success rides on its ability to keep abreast of new technology, communication guidelines and channels to ensure that the organization moves in lock-step with the industry as a whole.

While a balanced mix of digital and traditional channels guides brand communication discussions, the increase in utilization of digital channels across our key stakeholders has lent a focus for the team to carefully curate its mobile offerings.

Customer-journey mapping and time-of-day-device utilization are areas that the team is studying closely to develop content, and design a best-in-class experience.

Emerging avenues such as electronic medical record (EMR) platforms are also channels that are under exploration to further under-

stand the exchange of crucial healthcare information between our organization and our core customers.

• • •

COLIN STANLEY
President, DOCS, ICON

Trending: Hybrid Delivery Models

The adoption of hybrid delivery models, as part of a wider movement toward strategic resourcing strategies, is set to continue to outgrow traditional outsourcing models. These hybrid operational models are emerging as innovative thinking drives organizations to become leaner, more efficient, and more effective. Alternative program-based approaches allow sponsors to mix and match the right solutions for the right circumstances, while leveraging greater strategic and technical expertise, collaborative mind-sets, and flexibility. What if we take the best of the FSP and strategic resourcing models and introduce some of the CRO's scientific expertise or best practice? How can we include elements more commonly delivered in fully outsourced models, such as feasibility or site contract negotiation, in a strategic FSP model for clinical monitoring? How can we leverage the rapidly developing technological innovations associated with EDC, risk-based monitoring, and site GCP training, while delivering a data management FSP from a low-cost location? There are countless possibilities here for leaders open to alternative partnership arrangements that are truly tailored to their organization's needs.

• • •

TED SWEENEY
Executive VP, Commercialization Strategy & Science, ICON

Trending: Registrational Studies

U.S. commercial payers have been pushing for analyses of administrative claims databases — of their own enrollees, ideally — for years. This has allowed some confirmation of value messages regarding resource utilization and possession of medications. EU payers are also looking for similar outcomes data demonstrating real-world effectiveness.

The field is now significantly expanding for at least a couple of reasons. All payers are now looking for broader outcome measures, including more comprehensive economic outcomes, but also they're looking for links between economic, clinical, and humanistic outcomes, and to better predict likely responders and appropriate patient segments.

All of these factors contribute to the need for appropriately designed registrational studies that include outcomes and are structured in a way that will be most meaningful to payers and other market stakeholders. PV