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From the Editor

Sharing the Pricing Stage in 2020

THE PHARMACEUTICAL EXECUTIVE EDITORIAL ADVISORY BOARD met in mid-November to discuss the current trends, industry issues, and market dynamics that keep biopharma executives on their toes (see group photo at bottom). This issue, heralding a new year, as well as a new decade, features the top trends for 2020 that came out of our expert meeting (see page 12). We all expect pharma pricing to remain the topic coming out of mainstream media.

As we wrapped up 2019, headlines centered around H.R.3, the bill that passed unanimously in the House to address Medicare negotiations of drug costs. It would allow the HHS secretary to negotiate the prices of as many as 250 drugs annually, penalize companies that do not negotiate with HHS with a fine starting at 65% of a drug’s gross sales from the prior year, and caps out-of-pocket prescription drugs costs for those covered by Medicare Part D to $2,000 annually, among other details.

Also up for pharma attention at the end of 2019 was the removal of the biologics exclusivity provision from the signed US, Mexico, and Canada (USMCA) trade agreement, which would have extended the exclusivity of biologics in Canada and Mexico. Both PhRMA and BIO took a stand against USMCA because of the potential IP issues.

And December also saw the Trump administration’s plan for drug importation, alluded to in July, which includes a 75-day comment rule. Initial reports of the plan, which allows states and drug companies to import certain prescription medicines from Canada and elsewhere to lower costs, were unfavorable. Both PhRMA and BIO stated that importing drugs from other countries was a potential safety risk, and the Canadian government itself said it would unlikely be able to fulfill the import demand from the US.

While Pharm Exec acknowledges that pricing concerns are always a trend, we didn’t include it this year in our top trends as a specific topic because of the consistently shifting—and hard to predict—landscape. From 2016 to last year, Pharm Exec’s trends related to pricing included, in descending order, gene therapy pricing; the push for drug pricing policies from individual states; the global pricing stage; and the stirrings of the value vs. price discussion.

More for 2020

Our top trends list for this year, in no particular order, is: the many financial runways for biotech; the oncology pipeline; talent in pharma; smart voice technology; the cell and gene cascade continues; ownership of patient data; and the emerging pharma markets of Mexico, Indonesia, South Korea, and Turkey, or MIST countries. For other Trends and Predictions articles from external stakeholders, please check out the section on the home page at pharmexec.com.

We are also happy to share that 2020 will bring an updated look to the magazine, which will debut late Q1/early Q2. And another staple of Pharm Exec, the Emerging Pharma Leaders (EPLs), on hiatus in 2019, will be announced at the April eyeforpharma event in Philadelphia, and featured in our May issue. As we look forward to both of these important milestones, we welcome comments about our redesign and hope to see your nominations for Emerging Pharma Leaders that deserve recognition. The nominations will open Jan. 24, so please check pharmexec.com for more information.

Sitting (L-R): Pharmaceutical Executive Editorial Advisory Board members Murray Aitken, Peter Young, Steve Girling, and Terese Waldron. Standing: EAB members Al Reicheg (left), Nicole Hebbert (middle), Sanjiv Sharma (second from right), and Carrie Liaskos (right), with Pharm Exec staff. For full list of members, see next page.
Pharm Exec’s 2020 Industry Outlook

Pharm Exec’s annual forecast of the key issues facing biopharma leaders in the year ahead taps experts from several areas to uncover the seven new-decade trends to watch—from finance and policy to talent and technology, and more.

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EXECUTIVE PROFILE
Paving Bayer’s Future Path

Lisa Henderson, Editor-in-Chief
Led in part by the company’s new president of the Americas business, Sebastian Guth, Bayer went all in in 2019 on expanding pursuits in science and discovery, striking deals with 11 digital health startups and raising investment in disease-detection programs and patient engagement and education partnerships.

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In China’s new reform-driven and fast-moving environment for healthcare innovation, intense market pressures and fierce competition will ultimately push all stakeholders to evolve their strategies—or face extinction.
The foundation of a strong rare disease marketing program must be built on the comprehensive knowledge of how the life-altering disease impacts all areas of a patient’s life. Jonathan Romeo, brand strategy in Fingerpaint’s Saratoga Springs office, and Laura Wilson, patient strategy in Fingerpaint’s Cedar Knoll’s office, addressed some of the factors that can influence a strong program.

What makes marketing a rare disease product so specialized?

JONATHAN ROMEO: There are many different elements that make dealing with rare conditions unique. One thing that immediately rises to the surface is the challenge associated with identifying and diagnosing patients.

When it comes to enabling patient identification, multiple stakeholders and factors need to be considered. First: How do you activate patients to recognize that something may be different about the symptoms they are experiencing and to talk to their care teams? Second: How do you educate HCPs on conditions that have small patient populations, limited historical case information, and minimal treatment options so they can appropriately manage patients who come to them?

Luckily, emerging technology is making this process easier by providing new avenues to educate and bring together the various stakeholders. From interactive disease education to dynamic symptom-monitoring applications and digital research tools, technology is helping us to better understand the presentation of these conditions, with the ultimate goal being to augment the diagnostic journey and connect the right patients with the right treatments earlier.

Fingerpaint recently attended the NORD Rare Disease Summit. What were some of the major takeaways?

LAURA WILSON: We live in a time when we have the opportunity to alter the destiny of someone’s life because of the vast amount of innovation happening in the industry. We are lucky enough to be a part of. But what good is it to develop cutting-edge therapies if the people who need them most don’t have access to them in a timely manner?

Of course, the conversations about access centered around closed formularies and cost, but there was a lot of discussion about how to expedite the regulatory processes. One well-received solution was the Rare Disease Cures Accelerator, an integrated database and analytics hub designed to be used in building novel tools to accelerate drug development across rare diseases.

Care partners are also a critical component of rare disease marketing. There was no shortage of conversation about them—or led by them—during the summit. Not only must the complex journey of treatment for those with a rare disease be fully understood, but the same priority must also be given to the care partner’s journey, too.

What does the future of rare disease marketing look like?

WILSON: Families who experience rare diseases need more than product information; they need education and support. They need tools to teach themselves, and others, about daily disease management while also advocating for effective treatment.

ROMEO: Technology can help us build those things. Using digital tools, we are now able to acquire and analyze patient data like never before. These data can help us better characterize the true burden of these rare conditions for patients and their families. This can then be translated into information that can be used by organizations to craft appropriate patient support programs for those affected.

In addition, it can be used to better educate those physicians who are researching a rare condition because, in some cases, there is little information available about the disease and its treatment.

WILSON: Marketing support must go beyond product management. As marketers, we need to set our egos aside and truly listen to the needs of patients and care partners—like the mom of a gene therapy patient who spoke at the Rare Disease Summit. She talked about how social isolation is something that many families face because, simply put, there are not many people going through the same thing. Yet, there are not a lot of programs to address this.

ROMEO: This is why you are going to start seeing brands provide a more concierge-style approach to services for patients and their care partners aimed at providing the support they need when they need it.
Politics & Pricing to Shape Pharma Prospects in 2020

Challenges will mount to established models for researching, developing, and marketing new therapies

Despite the recent investment boom in bio-pharma companies, and industry’s continued success in discovering new cutting-edge genomic and cellular therapies, the political environment in Washington will cast a cloud over the prospects for robust R&D and innovative regulatory policies in the coming months. With national elections looming in November, and a host of Democrats vying for the White House, health policy and pharmaceutical coverage and costs will remain leading issues for the candidates. Politicians on all sides, moreover, will continue to hammer on the role of pharma marketing in fomenting the nation’s devastating opioid epidemic and teen vaping of e-cigarettes, plus the disruptions caused by ongoing shortages of critical medicines.

The future of the Obama administration’s Affordable Care Act hangs in the balance of the debate over federal and state healthcare and drug reimbursement. Pharma will strongly oppose legislation authorizing drug importing and international reference pricing as threats to critical innovation, while also working with plans and payers to devise more value-based payment approaches. But the discovery of additional costly life-saving therapies, including important treatments for more widespread conditions such as sickle cell disease, will require new strategies for ensuring patient access to affordable medicines, along with continued investment in novel science.

Changes at FDA

Important challenges await new FDA Commissioner Dr. Stephen Hahn, who will find it difficult to promote innovative regulatory and policy positions amidst the ongoing opioid and vaping crises. There’s pressure on the agency to clarify its rules for cannabidiol products, particularly dietary supplements promoting health benefits, and to police the rising number of operators claiming cures from untested stem cell and other biological treatments that raise safety as well as legal issues.

Concern about persistent antibiotic resistance also will raise the call for more research on new treatments to combat dangerous infectious diseases.

FDA will continue initiatives for approving more new breakthrough products, including cellular and gene therapies, and to engage with industry R&D programs developing dozens more. Additional agency guidance documents will support these efforts, as will patient advocates that provide important voices for shaping risk-benefit equations for promising treatments. All parties will be watching closely to detect any safety problems or signs of limited effectiveness in new therapies that could raise concerns about long-term benefits and value.

Meanwhile, the public outcry over drug prices will further FDA efforts to streamline and accelerate the approval of more generic drugs and biosimilars as alternatives to expensive brand therapies. While most of the biosimilars approved so far have been slow to reach the market due to complex patent issues as well as innovator efforts to discourage prescribing and coverage of follow-on therapies, analysts predict that a steady rise in new product approvals will begin to have more visible effects on prices. FDA will continue to support ready access to comparators needed for bioequivalence testing, and all parties look to similar versions of insulin products to have a major impact. But the issues are complex, and hurdles will remain in bringing competitive therapies to patients.

Shortages and harmonization

A major source of concern for Congress and healthcare providers will continue to be ongoing shortages of many critical treatments. Increased reliance on drug ingredients imported from China, India, and other countries will continue to put pressure on FDA to better police foreign producers. At the same time, manufacturers will move to boost investment in modern systems able to produce quality, cutting-edge products more reliably and efficiently to assure access to needed drugs.

Global harmonization of standards for drug production and for preclinical and clinical testing will remain an important goal. Innovative agreements between FDA and other regula-
A main theme for the coming year is to reduce extraneous requirements and promote more streamlined, risk-based approaches to drug development and production around the world.

Panel promotes global information sharing
Greater cooperation among regulatory authorities (RAs) in all regions would advance public health by speeding access to new therapies, optimizing the use of human and financial resources, and better manage drug shortages and health emergencies. To this end, an expert committee formed by the National Academies of Sciences, Engineering and Medicine (NASEM) calls for more sharing of information through mutual recognition agreements (MRAs) that facilitate reliance on the work of other RAs to inform regulatory decisions.

To advance such goals, biopharma companies should agree to share unredacted inspection reports, rejection letters for specific products, and other documents containing what industry considers confidential commercial information, according to the report on “Regulating Medicines in a Globalized World.” The panel calls for extending the current MRA between FDA and the European Medicines Agency (EMA) from its current focus on GMP inspections of drug facilities to inspections for vaccines and biologics. In addition, US-EMA agreements could also apply to oversight of good clinical practices, laboratory testing, and pharmacovigilance.

Trade pact hits biopharma exclusivity
While labor and tariff reforms in the revised North American trade agreement may have more visible impacts on the US economy, the final document levels a major blow to exclusivity and patent protections important to innovator biotech and pharma companies. Democrats heralded these changes in the final version of the US-Mexico-Canada Agreement (USMCA) as designed to reduce drug costs and generate savings for consumers, while industry predicted that patients will suffer as foreign entities “free ride” on American innovation.

This late development involves dropping an earlier provision backed by the Trump administration that set a minimum 10-year exclusivity period for biologics in all three countries. Instead, the pact now leaves the current 12-year exclusivity as is in the US, but imposes no added protections in neighboring states. This modification appears a major victory for Democratic reformers, who hope to press for future reductions in US exclusivity protections for pricey biotech therapies.

The final trade pact also took out language designed to extend patent protections by three years to sponsors developing new uses for existing products—a practice criticized as “patent evergreening.” Similarly, the agreement no longer requires three additional years of exclusivity for companies developing clinical information to support new uses of approved products, another strategy criticized for delaying generic drug competition. And to further promote “fair competition” in the prescription drug industry, the pact supports access to marketed products by generics firms looking to test copycat competitors prior to patent expiration of the brand.

Producers of generic drugs and biosimilars praised the deal as a “victory for patients” due to changes that promote competition and lower drug prices. Innovators predicted it would erode protections for American innovation, as it would encourage foreign entities to steal US intellectual property, according to the Pharmaceutical Research and Manufacturers of America (PhRMA).

tory authorities promote sharing and accepting reports on plant inspections, on certain testing programs, and more recently on information in market applications to achieve simultaneous drug approval decisions in multiple regions. A main theme for the coming year is to reduce extraneous requirements and promote more streamlined, risk-based approaches to drug development and production around the world.
A Happy New Year for European Pharma Policy?
What to make of new momentum in advancing health agenda

The changing of the guard at the head of the European Union has not gone smoothly, but most of the pieces were in place before the end of 2019, and for anyone with an interest in health or patients or pharmaceuticals in Europe, 2020 could turn out to be a happy new year. But no promises.

The new European Commission swept—or, more accurately, trailed—belatedly into office at the beginning of December, behind its new boss, Ursula von der Leyen, herself a last-minute choice, and until only weeks ago Germany’s minister of defense. This at least relieved the new European Parliament of the burden of repeating its cumbersome approval process for the candidates for the top Commission jobs, and permitted it at last to turn to its own affairs for the first time since it was elected in May.

The European Council, too, managed to appoint a new full-time president on schedule, with Belgium’s former prime minister Charles Michel taking over the organization of EU summits and strategy from Poland’s former prime minister Donald Tusk.

So much for the top management—which shouldn’t need adjusting now for another five years. What does it mean for health and for patients and for pharmaceuticals? For a start, it means the possibility of some consistent policymaking with a longer-term vision, instead of the haphazard and short-term responses that have characterized much of the EU’s approach to health until now. And within each of the principal EU institutions, there is some evidence of greater attention being paid to health issues.

The task ahead

The new Commission has identified health as an important policy area, and Stella Kyriakides, the new health commissioner, a Cypriot psychologist, has been tasked with implementing an ambitious agenda. Drug firm executives have been gratified to see that the first item is to “ensure Europe has the supply of affordable medicines to meet its needs,” and to “support the European pharmaceutical industry to ensure that it remains an innovator and world leader.”

Other main tasks include “effective implementation of the new regulatory framework on medical devices,” making the most of “the potential of e-health to provide high-quality healthcare” and the creation of a “European Health Data Space,” which is intended to promote health data exchange and support research, covering “treatments, medicines, medical devices, and outcomes.” The health commissioner will also be in charge of setting up “Europe’s Beating Cancer Plan” to improve cancer prevention and care—and with a close link to the research mission on cancer envisioned for the EU’s seven-year, €80-billion Horizon Europe R&D program now under development.

“Europeans expect the peace of mind that comes with access to healthcare and protection against epidemics and diseases,” said Kyriakides. And she recognized that this requires, among other things, investment in new technologies.

The parliament, freed from seemingly endless debates over who was sufficiently qualified to become a member of the new Commission, has picked up its work on health matters energetically. The health committee—now one of the largest of the parliament’s dozen or so panels—has been engaged in developing a “strategic approach to pharmaceuticals in the environment,” in asserting its control over the management of the European Medicines Agency (EMA), and reviewing the EU’s legislation on blood, tissues, and cells. And late at night in the parliament’s last plenary session of 2019, MEPs sealed their approach to an optimistic resolution on “enabling the digital transformation of health and care.”

Meanwhile in the Council, work will resume in the light of a widely supported initiative to bring an integrated approach to health policy. Finland’s strenuous efforts in the second half of 2019, during its stint in the rotating presidency chair, led to the adoption of a strategy entitled “the economy of well-being.” Its chief architect described this as a plan which would, among other things, allow digitalization and new technologies to “create the ground for innovations and growing businesses, which will help to promote public health and the availability of new medicines.” At the beginning of this month, Croatia took over...
chairship of EU’s health council. As a small and new member state, it will be less ambitious than its predecessor, but it has, nonetheless, already identified “promoting lifelong healthcare” as one of the priorities it will pursue.

Over at the EMA itself, which moves into its new permanent home in Amsterdam this month, there is palpable relief that despite the immense Brexit-induced disruption of being abruptly uprooted from its London home, it has been possible to maintain something like business as usual on the agencies core activities. And there is a reasonable expectation that many of its other activities, suspended over the last two years as a result of strained resources, can gradually resume as staff numbers return to normal and the agency settles back into routine.

Challenging seas
But despite these favorable winds, the voyage into the future may not be entirely smooth sailing. A major strategic challenge was highlighted at the December meeting of the health council, by Margaritis Schinas, the commission vice president, whom von der Leyen has put in charge of “promoting our European way of life,” and who will be Kyriakides’ direct superior. The EU, he remarked, accounts for only 8% of the world’s population and only 20% of its GDP—but it currently accounts for 50% of the entire spending around the world on social security. This was a reality that the EU would have to take into consideration as it developed its strategy for continued access to health and social services, he indicated, underlining its significance for developing policies that maximized prevention.

The broad support for Finland’s efforts to create an integrated EU health policy have already been subjected to some conditionality over the details by many member countries’ governments, who have insisted on the immovable primacy of national sovereignty on health. The logjam persists in the Council over plans for closer cooperation among national and regional health technology assessment bodies. Drug shortages have shot to the top of the news agenda and the subject is now gaining priority as a policy issue—with the link frequently made, irrespective of the logic, with the ever-incipient topic of drug prices.

Health ministers have given their backing to the concept of a new structure to seek solutions—and these range from simpler mechanisms such as improved sharing of information to elaborate discussions of repatriating active ingredient manufacture to Europe. All the time, a steady background drum beat of concern over balancing innovative medicine provision with health-care budgets threatens to burst into a cacophony of outrage, with patients and health payers chorusing their disappointments.

The concerns over what are seen as unjustified drug prices are also leaking into competition policy—where the EU has much stronger powers than in health. As a minor reminder of the breadth of the EU’s continuing reach into healthcare, the European Commission—in its role as the EU’s competition authority—approved just before the holiday break the takeover by Danaher of the biopharma business of General Electric’s Healthcare Life Sciences division. Margrethe Vestager of Denmark, who is back in the new Commission in charge not only of competition policy but also of digital strategy, had expressed her concerns that the deal could lead to reductions in competition and innovation, and increases in prices and product shortages.

[The new European Commission] means the possibility of some consistent policymaking with a longer-term vision
“No man is an island,” John Donne wrote in 1624. Though society has changed much over the past four centuries, the quote remains relevant, especially when it comes to drug companies trying to grow their business. In the complicated landscape of pharma and biotechs looking for support in their drug development, the two entities are linked not just to each other but to the market at large. As a result, understanding market dynamics, preparing for the unexpected, figuring out where funding is available, and thinking outside the box have become necessary.

Balancing act
Since emerging in the mid-1980s, biotechs have become a major source of new drug development, bolstered by pharma’s weak productivity in R&D more recently. Though some biotechs might tackle regulatory, manufacturing, and sales functions, most still look to forge a relationship with pharma at some point to get their product to market. This might mean securing a partnership or licensing agreement, or getting acquired. Although partnering with a pharma company offers important business and financial benefits, a biotech might alternately look to the stock market (IPOs and secondary offerings) and venture capital firms for funding.
There is a strong relationship between M&As, IPOs, and funding. If the IPO market dries up and venture investments slow down, biotechs depend more on partnerships and exiting via a sale of the company. On the other hand, if the IPO market is robust and venture capitalists are investing generously, biotechs don’t have to look to pharma as aggressively.

Overall, the IPO market has been strong for many years. Young & Partners recently reported that during the first three quarters of 2019, 38 IPOs were completed worth $4.3 billion, compared with 50 IPOs worth $4.9 billion in the first three quarters of 2018 (see chart at right).

“We’ve also had a period where venture capitalists were very interested in biotech,” says Peter Young, CEO and president of Young & Partners, and Pharm Exec Editorial Advisory Board member. “That allows the biotechs to wait a little longer before they have to either sell or partner.”

The number of acquisitions also declined in 2019 for biotechs. After a modest surge in 2018, the volume dropped from $35 billion to $14 billion in the first three quarters of 2019, and there was only $5 billion in deals announced but not closed as of Sept. 30, 2019 (see chart on page 14). The strength of partnering activity and access to venture and public equity funding contributed to this decline.

Acquisitions of pharma companies follow a different drumbeat as companies acquire for strategic, geographic, and revenue-preservation reasons. Young & Partners indicated that the number of M&A deals for pharma through the first three quarters of 2019 were lower than 2018. The volume of pharma deals, however, was much greater—$26 billion in 2018 vs. $80 billion for the same time period. This demonstrated a pickup after years of decline. However, $62 billion of the $80 billion was Takeda’s acquisition of Shire. This transaction may portend more mega deals, with Bristol-Myers Squibb’s acquisition of Celgene ($99.6 billion) and AbbVie’s purchase of Allergan ($86 billion) announced but not closed as of Sept. 30.

Another change in the biotech-pharma relationship that’s worth noting is the shift toward orphan drugs. These drugs require a much smaller salesforce and shorter approval process, and, therefore, much less funding, reducing a biotech’s need for pharma companies.

“These elements are] a positive for the biotechs and a negative for the pharma companies, in relative power,” says Young. “But there are signs of some weakening in the IPO markets, which will tip the scales again. That will obviously have a negative impact on venture investing.”

Ready for anything

As these overlapping elements create an ever-changing environment, it’s best for companies to be prepared on many fronts when deciding how to grow. “I think it’s impossible to just have one plan and stay with it because there are so many things you cannot control or predetermine what the outcomes will be,” says Young. “There’s no way to know [how long] the IPO market is going to be strong. You can’t have a plan that says, ‘Our only plan… is to do an IPO in two years,’ because that would be foolish.”

Young also says to beware of fads. “Everyone got really excited about CRISPR, and then there were safety issues and some negative press, and all of a sudden it went out—now maybe it’s coming back. Those are the things you can’t tell.”

Jigar Raythatha, CEO of Constellation Pharmaceuticals, learned the importance of having a plan B the hard way. In a Pharm Exec podcast (see https://bit.ly/2rnoxXD), Raythatha explained how his biotech was blindsided when its one-and-only plan to partner fell through. After Genentech struck a deal with Constellation, it shifted its strategy and didn’t follow through on the acquisition.

“You can probably, in retrospect, call it a mistake,” says Raythatha. “[Constellation] had developed the company in a way to kind of hand over the reins. Unfortunately, lesson learned, the company didn’t have a plan B.” It took Constellation about a year to regroup and develop a new plan.
“It’s important to contingency plan and not necessarily to the same level of planning in each scenario, but thinking through what do you do if your key assumptions don’t pan out,” says Raythatha. “To have the ability to move into a new direction without having to completely reinvent the wheel, I think is quite important.”

Raythatha believes key stakeholders should be in alignment on major decision points. They should consider market shifts and discuss the company’s possible responses to those scenarios. Once that basis is established, the company should be adaptable to quickly flesh out a new plan of action, if needed.

Internal issues, such as toxicity, safety, or manufacturing problems, also can derail a plan. Millendo Therapeutics sustained two clinical setbacks that forced the company to adapt. (For details, listen to Pharm Exec podcast episode 46 at https://bit.ly/2SkHMfq.)

“When negative results emerged once again in a separate drug trial, Millendo was already in conversations with Alizé Pharma, and with the right team, money, and skills in place, Millendo was prepared to merge.

“We did two complex mergers and two financings in under 12 months,” says Owens. “That’s really hard to pull off. But we’ve always made sure we have plans B, C, and D in our back pocket in case we need them.”

Owens’ business development background has been helpful in navigating Millendo’s deals. For companies that lack such insight, hiring an alliance manager can add value. Lucinda Warren, vice president of business development, neuroscience, Janssen Business Development at Johnson & Johnson Innovation, spoke at the Association of Strategic Alliance Professionals’ European Alliance Summit this past November. She described an alliance manager as the “conductor of the orchestra.”

The position, whether in-house or outsourced, can provide big-picture oversight and targeted expertise in creating a plan, being proactive, and providing follow-through.

**Outside the box**

It’s important to include a mix of partnering pathways in a company’s master plan, not just traditional alliance routes. Sebastian Guth, president of pharmaceuticals in the Americas Region for Bayer, shares his long-term goals in an executive profile on page 32. Though partnering with academic institutions and collaborating with biotechs might sound typical, Guth’s overall vision is driven by innovation, evident in Leaps by Bayer, a division that invests in breakthrough ideas.

“We are at an inflection point where breakthrough science is transforming care almost daily,” says Guth. “Bayer had to make a clear choice between pushing the boundaries of science, investing in the big bets, or staying in the here and now. And we’ve made our choice and are convinced that science and innovation are the way to go. In many ways, the decisions that we have made are already being reflected in our portfolio and pipeline today.”

With an open-minded outlook such as this and keeping a pulse on the everchanging ecosystem in which biotech and pharma exist, companies can forge ahead with confidence to grow their business.
Is Oncology R&D Sustainable?

As spending and costs soar, breakthrough promise remains

By Lisa Henderson

While oncology drug pipeline activity and innovation have been consistently on the radar for a number of years, could the field be bordering on saturation? Let’s consider these numbers from the IQVIA Institute for Human Data Science’s Global Oncology Trends 2019 report (see https://bit.ly/2ttcicM).

» There are more than 700 life sciences companies with cancer drugs in late-stage clinical development and 463 of these are emerging biopharmaceutical organizations.

» Of the 33 large pharma companies with global pharmaceutical sales over $5 billion in 2018, 28 have large and active oncology pipelines.

» Biomarkers that stratify patients likely to respond to therapy are now included in 39% of oncology trials, up from 25% in 2010.

» The pipeline of drugs in late-stage development expanded 19% in 2018, mostly due to a large increase in the number of targeted biologics, which now represent just over 90% of the total oncology pipeline for the first time.

» There are 98 next-generation biotherapeutics—defined as cell, gene, and nucleotide therapies—in the midst of clinical investigation in cancer. These pipeline products leverage 18 different treatment approaches.

Success dip

On the clinical trial side of the oncology pipeline, the number of trials initiated in 2018 increased 27% over the prior year, to 1,170, and is up 68% over the past five years. But the composite success rate of oncology trials fell from 11.7% in 2017 to 8% in 2018. Clinical trial duration is also highest in cancer, but it has declined over the past five years in each phase.

For more on how industry is advancing clinical trial designs, such as basket trials and adaptive trials, watch this recent webcast from Applied Clinical Trials (https://bit.ly/2QOEy1c).

Once commercialized, as noted earlier, the majority of companies with over $5 billion in sales in 2018 have large and active oncology pipelines. And spending on all medicines used in treating cancer patients reached nearly $150 billion in 2018, up 12.9%, marking the fifth consecutive year of double-digit growth. New oncology brands in the US include some therapies with prices above $100,000 per year.

The median annual cost for new brand launches in 2018 was approximately $148,800, a drop from $162,150 in 2017. To date, however, payers continue to cover oncology therapies. Total spending on cancer-targeted treatments was up 17.5% in 2019 (12 months ending June 30, 2019), reaching $135 billion.

“It’s a perfect storm of surging innovation, [with] the rest of the healthcare systems struggling to keep up.”

Policy and pricing

While many policies are being floated to address high drug costs overall, (see Editor’s Note on page 4), Murray Aitken, executive director of the IQVIA Institute, stated at the recent Pharm Exec Editorial Advisory Board meeting, “We shouldn’t be single-mindedly focused on looking for policy changes to impact the pricing environment. We do have competitive market dynamics that will have at least as much impact, especially when so many companies are heavily invested in succeeding in oncology.”

Aitken elaborated that while the spending pie continues to increase, the pace likely won’t be fast enough for all companies’ products to provide an economic return on investment. “It’s a perfect storm of surging innovation, [with] the rest of the healthcare systems struggling to keep up,” he said.

“Every large pharma company over-invested [in oncology], hundreds of emerging biopharma with VC funding and so on, pursuing this area.”

Time will tell. As noted in this Bloomberg article (https://bloom.bg/2twnAwE), many large pharma have re-engineered their pipelines through acquisition to bolster their oncology offerings. Others, like Novo Nordisk, have made the choice not to invest because of the reasons stated earlier.

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Tuning into Talent in 2020
Recruiting and cultivating the new breed of pharma leader
By Julian Upton

As the pharma industry evolves and fractures into a new landscape of healthcare giants and specialist operators, the “war for talent” continues to exert pressure on hiring processes. To attract and retain a new breed of pharma leader, more flexible recruitment strategies and retention policies are now the order of the day. As posited by the “Transformation and Talent Strategies” session at the FT Global Pharmaceutical and Biotechnology Conference in London, in November, pharma companies’ success “will depend on their ability to attract, develop, and retain high-performance talent from across a wide range of industries, develop new operational and organizational models, and break down the silos inhibiting innovation.”

Among the challenges raised at the FT conference, the transition of leadership talent from pharma to biotech was one that resonated with the executive recruitment experts that spoke to Pharm Exec recently. Chris Smith, director at Hays Life Sciences, says that in the last few months he’s seen more specialist biotechs “entering a phase of scientific recruitment and building out beyond their core talent than in previous years,” and that this “proliferation of innovators is grabbing talent at a pace.”

Rebecca H. New, managing director and head of RSR Partners’ Human Capital and Healthcare & Life Sciences Practices, told Pharm Exec that within startup companies, “venture capitalists are acting more like private equity holders—investing in and helping owners keep the drugs longer.” As such, “they need commercial business leaders—people who don’t just know how to sell, but who also understand market dynamics, the supply chain, how to launch drugs, etc.,” she says.

With many companies building their own factories to avoid long lead times with third-party manufacturers, New adds, “there’s a need for people to run them—specifically, people with knowledge of how to drive and ensure quality, containment, engineering, and manufacturing production knowledge.”

Such skills “are in high demand and short supply,” New says. However, as startups and growing small and mid-size enterprises are more “nimble and agile” than large pharma companies, they can have the edge when it comes to securing these skills, according to Smith. “Smaller companies can be leaner in their processes and quicker in their actions, and their internal equity conversations can be a little bit easier,” he says. Not least, “they can offer the potential for quick grosses and share options and potentially lucrative payouts.”

Motivating millennials
Whether a small startup or a large multinational, pharma companies need to tailor their offerings to a new generation of employee, namely, the millennial. The FT talent session highlighted the importance of creating “a value proposition that will attract millennials.” New says that “in many ways, millennials are voicing what all of us have probably wanted, which is to feel engaged, to feel a part of something bigger.” She adds that they are more assertive about things like work-life balance than previous generations, and as a result, “companies are starting to think differently around their compensation models and labor pools. They’re offering more flexibility, for example, for individuals who may want to be part-time or part of a consulting team instead of a full-time employee.”

Millennial attitudes are also diminishing the need for relocation. Smith notes that while top-level executives have long been given scope to travel, there is now more of a demand for remote working at the mid-tier and senior management level. Companies are becoming more amenable to this “when trying to attract people with very specific skill sets.”

Moreover, today’s candidates want “more understanding of their ability to make an impact,” adds New. “What is their role in terms of leader-
ship decisions? What’s their accountability?” she says. “Whether they’re in business-unit leader or COO roles, one thing I see is more and more individuals wanting to have a greater involvement in the product side. Not in terms of the development of the products, but in being able to help shape insights around utilization and customer analytics to help define other applications.”

Dealing with diversity
While diversity and inclusion are key concerns across most modern industries, pharma still has some way to go to compete with those at the more progressive end of the scale. “I haven’t seen anything particularly shift over the last 10 to 13 years,” Smith told Pharm Exec. “Bear in mind, however, the types of people we’re placing. At the senior director or VP level, diversity isn’t normally part of the brief.” He adds, though, that, in his experience, the industry “has always been reasonably diverse. It’s not quite as dominated by middle-aged white men as, say, the tech industry.”

New sees biopharma companies under more pressure—from analysts and sometimes from consumers—because “their leadership should match their customer base.” But there remains a challenge, she says, “in that most companies are continuing to look for talent within their own industry, trying to find the ‘traditional’ CEO and CFO. This narrows the search pool, and, in some cases, makes it near impossible to find diversity, by any definition.”

The IT function is one area where companies are looking for talent outside of the industry, thus fostering more opportunity for diversity, agrees New. “There is a great demand for candidates in project leadership, programming, and coding,” she says. And in large-molecule companies, for some positions such as finance “there is more receptivity to looking at individuals who may have worked in other regulated industries.”

But if we extend the definition of diversity to “breadth of talent,” then companies “have to embrace that talent earlier if they really want diversity,” says New. She explains: “Potential leaders should be encouraged to rotate on a regular basis through functions such as M&A, Global, P&L, and Operations early in their careers. This will help if or when they return to their function, as they will be able to talk the language of the C-suite and make more informed business trade-off decisions.”

She adds, “It’s not about mentoring, it’s about enabling talent, so that when it’s time to fill a position, there is some choice.”

Al’s March Grows Louder
The potential of smart voice technology in pharma

By Miranda Schmalfuhs

According to projections cited in The Atlantic, by 2021, there will be nearly as many voice-activated smart speakers in the world as there are people. Additional reports find that this year, at least 50% of online searches will be voice searches and that smart speakers will overtake tablets in sales and use by next year.

But, in practical application, what do these trends—and the broader growth of AI-powered technology—mean in the realm of healthcare and patient engagement?

“Voice is one of those areas that’s going to have a huge impact,” says Bryan O’Malley, head of digital at Fingerpaint, a healthcare marketing agency. “We already see this with the prevalence of Alexa in people’s homes and the way they use Siri on their phones. I don’t think anyone has really set the trend yet for how [healthcare and pharmaceutical] marketing is going to be done through voice assistants, so there’s still a lot of blue sky to work with on how to best approach it.”

O’Malley does, however, see inroads being made in the pharma space that could point the path forward, as marketing strategies are attempted with the goal to “settle into where consumers are really comfortable.”

To that end, Amazon, for instance, has a smart voice tool that’s not just helpful from an informative standpoint, but is also e-commerce enabled, a feature that has extended into the medicine commercial and purchasing market. “You can, for example, say, ‘Hey Alexa, add something to my shopping cart.’ So, we’re
starting to see some advertisements for over-the-counter products that are including that capability,” explains O’Malley. “Domino’s [Pizza] already did something like that in the non-pharma space in a Super Bowl ad a few years ago. I think that the less-regulation parts of our industry like OTC are going to really dive into that because of the prevalence of these devices.”

As far as investment decisions around these technologies for treatment brand teams and consultants, Amazon and Apple are clearly dominating market share. “Those companies are also putting healthcare as a focal point for a lot of their initiatives,” says O’Malley, pointing to a recent partnership Amazon established with supermarket and pharmacy chain Giant Eagle, where customers with an active prescription can refill their medications right from Alexa and be reminded when to take their drugs.3 “If you have a prescription for a migraine medication, for example, you can just yell out, ‘Hey Alexa, refill my prescription,’ and it will contact the pharmacy, work out all the arrangements, make sure refills are available, etc.”

Simplifying this process further, O’Malley believes it’s not a far stretch in the future for patients to be reminded by their smart speaker to ask about refills every 30, 60, or 90 days—and fulfilling a prescription with a simple “Yes, Alexa.”

Beyond these platform advances on the high-tech side, there is the underlying question for healthcare marketers of what can they do to help advance the brand and, as O’Malley emphasizes, “meet the audience where they’re already at.” Several companies are already involved in short message service (SMS) efforts to enable patients, for example, to access their copay cards through digital devices. Smart speakers could potentially orchestrate and arrange that same access, to go along with providing product details and answering patient questions.

“Similar to the way that you might get your airline tickets in your own digital wallet, you might use a voice assistant to add a copay card to that wallet as well. It’s about tying existing initiatives with a brand into the voice ecosystem,” says O’Malley.

The adherence advantage

Patient care companies are experimenting with AI and voice recognition tools to improve patient adherence and compliance. San Francisco-based Catalia Health, for example, has a system for individuals with chronic disease to help manage ongoing treatment. Using a voice-based interface, its AI-powered robot, Mabu, enables healthcare providers and pharma companies to better support patients. The cloud-based platform can hold unique conversations with patients and try to intelligently respond to queries. Mabu will ask things like, “How are you feeling today? Did you take your medication?”

“It’s about trying to engage the patient throughout the course of their treatment and sharing that information back with their physician, so they can track how they’re doing,” says O’Malley.

These technologies, he notes, could become increasingly popular with seniors, children, and other patients who might be looking for emotional support during treatment. “We see this in Japan where they’re very technologically adept, and really build technology into their culture,” says O’Malley. “They love things like robotics and animations and are continuing to push for robotics at home for that emotional support.”

Weaving technological advances in video and augmented reality with existing smart voice innovation begs the question of how far telemedicine can go. There’s increasing capability today where patients can video chat with a doctor to describe symptoms and have treatments prescribed without setting foot inside an office. With regulatory, compliance, and data collection issues still to figure out, the advent of intelligent voice technology in healthcare, nevertheless, looks poised to catapult this dynamic to new levels in the near future.

References
Cell & Gene Cascade Continues

Attention shifting to areas beyond pricing and reimbursement

By Lisa Henderson

Pharm Exec’s 2019 Industry Trends report included “Gene therapies change pricing and payment model dynamics” (see https://bit.ly/2MTBnnU), which outlined exactly what it says—the scope of pricing, value, and accompanying payment models for the changing therapeutic landscape. This year, the topic has evolved to everything that follows once that cell or gene therapy is priced and available—manufacturing scale-up, patient and hub services, physician education/awareness, and impacts to sales force changes.

We tackled the manufacturing problem a bit in a November article (see https://bit.ly/37AMh9Z), where Salim Syed, head of biotechnology research, senior biotechnology analyst, and managing director at Mizuho, noted that manufacturing in the small-molecule world was a different story. “Now it matters how good you are at manufacturing,” he said. “And as these therapies get more complex, it matters even more.”

As our sister publication Pharmaceutical Technology notes in this article (https://bit.ly/2ZNJ8Bc), large-scale viral vector manufacturing lacks automation in key steps of the process, has immature supply chains, a lack of standardization of raw materials, and is just a start for the current state of manufacturing in this area.

In the November Pharm Exec article, we noted that many pre-commercial and commercial companies are opting to create their own manufacturing sites. BioMarin, AskBio, Wave Life Sciences, and bluebird bio were among those doing so, the report noted. Since its publishing, more companies are signing on for manufacturing prowess in cell and gene therapies. Novartis set aside $500 million to scale up its gene therapy manufacturing efforts; and Astellas purchased Audentes for $3 billion, adding the latter’s pipeline of gene therapies, as well as its large-scale cGMP in-house manufacturing capabilities.

Meanwhile, contract development and manufacturing organizations (CDMOs) are also hoping to get a piece of the pie. One example is Thermo Fisher Scientific’s recent opening of a $90 million, 50,000-square-foot viral vector manufacturing facility in suburban Boston. Earlier last year, Thermo acquired viral vector CDMO Brammer Bio.

Murray Aitken, executive director, IQVIA Institute and member of the Pharm Exec Editorial Advisory Board (EAB), said at a recent meeting of the Board, “The whole infrastructure for handling these novel therapies is still a big barrier, and it’s going to take a few years before the infrastructure and platforms are established for these therapies to become commonplace.”

“The patient engagement model is completely changing right now,” added EAB member Nicole Hebbert, SVP, head of patient support services at UBC, during the meeting. “What hubs looked like 10 years ago, or even five years ago, is not the same pertaining to the set of services you have to wrap around the patient in regard to gene therapy.

“The whole infrastructure for handling these novel therapies is still a big barrier.”

Before, we were talking to a specialty pharmacy to make sure patients received their medication. But, now upstream, there is so much more to do to engage. You are literally side-by-side with manufacturing and production management to track and facilitate access across the supply chain.”

The links connecting the therapy, patient, caregivers, and often teams of physicians is another factor driving the gene and cell therapy cascade. Historically, field sales professionals were tasked with physician detailing and product education about approved therapies; now they have a lot more information to share. Says Hebbert: “Detailing that [physician] practice now takes more time to also
cover the complex delivery methods that have to happen to support a gene or cell therapy.”

A report published in the December issue of Pharm Exec, authored by Meghan Oates-Zalesky, senior vice president of marketing at InCrowd, found a significant gap in physicians’ understand-

ing of nucleic acid-based therapies, which includes RNAi, siRNA, ASO, mRNA, AAV, CRISPR, and TALENs. An InCrowd survey found that oncologists had the most familiarity with these therapies, but 20% of primary care physicians (PCPs) and 15% of pediatricians did not. Further, physicians

Deeper Dive: Gene Therapy Manufacturing

In the following Q&A, Hari Pujar, PhD, chief technology officer, Spark Therapeutics, discusses the unique manufacturing and scale-up challenges involved with cell and gene therapy production. Pujar leads Spark’s technology development, technical operations, and quality assurance organizations. Prior to Spark, Pujar was most recently vice president, technical development and manufacturing, at Moderna Therapeutics.

For those who may not be familiar with the gene therapy manufacturing process, could you please provide a brief explanation of the process?

Up until now, gene therapy companies have been focused on discovering and manufacturing therapies for ultra-rare diseases that affect very small patient populations. But today, as the science is evolving, developers are focused on therapies to treat larger patient populations with more complex diseases involving multiple genetic mutations. This will require advancements in manufacturing that enable companies to create new modes of administration, at a greater scale, and as efficiently as possible.

One of the most unique aspects of gene therapy manufacturing is the production of the viral vectors that are used to transport the new genes into a patient’s cells. To produce these vectors, the two commonly used methods are roller bottle cell culture (with adherent cell lines) and suspension cell culture (with suspension-adapted cell lines). Since the first days of biotechnology, we have manufactured medicines with roller bottles, or the adherent approach. In the adherent approach, cells need the surface area of a roller bottle to attach to. While effective, this can be a labor-intensive process and inefficient in producing viral vectors at a scale needed for large patient populations.

A newer approach that is more scalable and efficient is the suspension process. Within this process, bioreactors, or vessels, grow the cells in liquid—all without the additional surface area required in scaling up the adherent approach. Once cells grow to the right density, another unique part of the gene therapy manufacturing process can take place, which is called transient transfection. During this process, cells are treated with agents to make their membranes porous enough to allow for the introduction of plasmid DNA, which can then be delivered into cells. Plasmid DNA has to be manufactured or sourced independently. Further advances to this process include the use of stable transfection (in contrast to transient transfection).

While both of these upstream processes—whether by adherent or suspension cell culture—produce the virus, the virus needs to be purified to an appropriate quality by way of downstream purification. It is important for this process to purify the virus from both cellular impurities and process additives, while keeping the biological activity of the virus intact. Unit operations are analogous to those used for protein biologics such as chromatography and filtration. Finally, the virus needs to be formulated in an appropriate buffer that maintains the biological activity while enabling long-term storage in appropriate containers.

There has been much discussion about challenges associated with manufacturing gene therapy for scalable production. What do you see as some of the greatest challenges today?

The three biggest challenges and opportunities I see today are:

1. Making our processes more efficient to scale up quickly and meet growing demand, while not compromising quality. This includes the previously described shift to the suspension process to produce a larger yield of viral vectors. This shift to a more efficient process can be done in smaller facilities, which are more easily instituted and scaled-up by gene therapy companies. Higher yielding processes are critical for the industry to reach its full potential, as large quantities of virus will be needed as more complex diseases are interrogated.

2. Building talented manufacturing teams with the right experience. A common dilemma in gene therapy manufacturing is whether to outsource capabilities. Decisions like these are not made lightly and are often unique to the therapy and company. At Spark, we’ve chosen to grow our team internally, sourcing talent from various backgrounds and industries. It is essential to have a team that knows how to design and run a manufacturing process and facility for
in academic vs. non-academic practices reported familiarity with gene-based therapies, at 34% vs. 24%, respectively.

Oates-Zalesky noted: “The findings suggest biotechs and pharmaceutical firms face an opportunity for physician outreach and education on gene-based therapy fundamentals, as well as initiatives that build awareness of approved therapies and progress of others through the pipeline.”

*Pharm Exec* will continue to monitor this dynamic area for changes and updates for our readers.

product commercialization. Unlike small molecules, the manufacturing process for a gene therapy can be an important determinant for the pharmacology of the product, and thus process and biology are interlinked.

3. Standardizing the gene therapy manufacturing process. We can develop therapies for a wide range of different, complex diseases without recreating the wheel each time. This will require a platform process that can be applied from one product to the next. The process has many advantages, including continual technology improvement via repetition and iteration, speed of implementation, and efficient use of facility and staff. Platform technology not only applies to the manufacturing process but also all associated technology solutions.

**Higher yielding processes are critical for the industry to reach its full potential**

**What are the unique ways the gene therapy industry is working to evolve the manufacturing processes for improved efficiencies and speed of delivery?**

By leveraging the many advances made by the monoclonal antibody, or more broadly, the recombinant protein industry. These include the use of suspension cell culture, single-use technologies, and chromatography-based purification. In addition, other approaches such as the use of stable cell lines and protein engineering are also being used to improve manufacturing and product profiles. The use of DNA plasmids and helper viruses to manufacture viral vectors are unique aspects of gene therapy, and advances in these starting materials will also yield enhanced efficiencies.

**How does the manufacturing process engage the R&D team? And how early are you engaging with other teams to ensure the quality of the product?**

Every gene therapy is currently different, so to create the most efficient and effective manufacturing process, the R&D team must engage the manufacturing team very early. The two must communicate about a variety of issues, including the quality target product profile, the dose levels to be interrogated, and the anticipated patient demand. Since the clinical development window is so short, we must ensure there are enough supplies of clinical material available, and that the process can be rapidly scaled up, especially as we prepare for pivots into phases later in the product lifecycle.

With appropriate collaboration, the process development and manufacturing teams can work with the clinical team to design a better product, and they can collaborate to evaluate the investigational therapy for safety and efficacy as expeditiously as possible.

**If you could build your ideal gene therapy manufacturing facility, what would it look like? And how long do you think it’ll take to get there?**

To support the introduction of the first gene therapy for a genetic disease, approved by FDA in 2017, Spark built, from scratch, the only in-house FDA- and European Medicines Agency (EMA)-licensed gene therapy manufacturing facility in the US. We are proud of what we accomplished in a short period of time and the company learned a lot through this process. Some things on my “wish list” for future facilities include:

1. **A flexible, multi-product gene therapy manufacturing facility.** This allows us to seamlessly support various products—for small and large patient populations—from early-stage clinical manufacturing through commercial manufacturing. This would not only cut down on costs, but also speed up delivery by being able to manufacture multiple therapies simultaneously.

2. **Platform processes and assays with state-of-the-art unit operations.** This can be used across all clinical development programs. Traditionally, each gene therapy product is created with a different manufacturing system, especially as varying types of viral vectors are used to transport the correct genes. Settling on a platform approach can help proactively plan the supply needs, materials, and manufacturing capacity required for their clinical and commercial purposes, ultimately saving time, money, and resources.

3. **Use of robotics, automation, and digital technology.** Use of these technologies is an absolute imperative to enhance product quality, reduce cost with optimum cycle time, while enabling continuous improvement via data science.

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*— Staff Report*
The entrance of high-technology giants into the world of healthcare data collection—while offering promising advances for population health, disease prevention and management, and precision medicine—has further fanned the already volatile climate around data protection and quality, and, ultimately, patient trust.

Perhaps the most notable example was November’s public revelation that Google had launched “Project Nightingale,” a partnership with Catholic health system Ascension that gives Google’s cloud analytics access to millions of patient medical records in 21 US states, with the purpose of culling information to provide advice on improving care and enabling more targeted delivery. The announcement triggered a federal inquiry by the US Department of Health and Human Services Office for Civil Rights over whether the project complied with HIPAA privacy laws. Other big-tech stalwarts, including Amazon, Apple, and Microsoft, have jumped into the healthcare data fray as well, either through introducing AI and machine learning tools or launching their own dedicated healthcare ventures (i.e., the Amazon, Berkshire Hathaway, and JPMorgan deal). New startups, including digital biomarkers and digital therapeutics (software as a medicine) companies; retailers; payers; and even pharma are also vying for their own piece of the pie in the complex digital product market.

Competing forces

Nevertheless, despite these best intentions (and similar efforts by the NIH and others in collecting genetic and health data to accelerate medical breakthroughs), they are all, in essence, competing for patients’, or consumers’, loyalty and data. Most recognize that direct relationships in healthcare are no longer patient-physician dominated, but it’s in the collection and use, in some cases, of private medical data that continues to raise scrutiny from patients, lawmakers, and others. How robust are the algorithms employed to analyze the data? Is there evidence that shows alignment with data quality and integrity standards? And then there are operational considerations for the broader ecosystem. In the medical field, though new data privacy and sharing laws have been enacted by individual states in the US, for instance, and, globally, with recent legislation updates in the European Union, the lack of evolving compliance frameworks to keep pace with AI, big data, etc., remains a hinderance.

“We’ve clearly been reputationally challenged,” said Eddie Martucci, CEO, Akili Interactive, a digital therapeutics company, during the recent FT Global Pharmaceutical and Biotechnology Conference, citing the Facebook-Cambridge Analytica data scandal as an example. “It’s because we’ve used this data exhaust, this data by-product to try to monetize in different ways. When data is the central point—that changes the dynamic. The companies that will win are not those that have the very best product on day one. It’s who can most quickly respond to patient data [issues], respond to patient needs.”

Owning up

Valuing the patient experience, and building trust, experts say, can help add context to the not-always-easy question of who owns the data. The simple answer, most agree, is the patient, with many, even drugmakers themselves, arguing that, for instance with research, individual data from clinical trials should be returned to the participants, “because it’s about the autonomy, not just the ownership,” said Dr. Jessica Scott, head of R&D patient engagement, Takeda.

The data-driven relationship itself, however, should be owned by all stakeholders, experts contend, and be treated as a partnership, with the focus on providing immediate value to patients. That could involve, for example, patients potentially controlling their data and voicing their perspectives in clinical trials; or biomarker screenings and the chance for patients to see how their results may help improve diagnosis and drive innovation for diseases like Alzheimer’s; or payers considering patient satisfaction measures in reimbursement and formulary decisions.

“We can’t forget there is no such thing as the ‘average’ patient,” says Hanno Ronte, partner, Monitor Deloitte. “There will always be people who have different answers. Digital and data have the ability to be much more precise, to the unit of one, but scarcely predictive of the average. We as individual patients have an obligation to interact with our data and with our healthcare system in a way that actually makes our voices heard and makes the data useful.”
Although the BRIC countries (Brazil, Russia, India, China) or BRICS (if we add South Africa) tend to dominate discussions of “emerging” pharma markets, it is useful to cast an eye over “MIST,” another catchy acronym coined by economist Jim O’Neill that comprises Mexico, Indonesia, South Korea, and Turkey. In terms of their pharma markets, Attieh and Tannoury noted in 2017 that sales in both BRICS and MIST countries had doubled in five years, reaching a market share of approximately 20%,1 while McKinsey & Company, choosing to group Mexico and Turkey with BRIC, observed that these “BRIC-MT countries” would be instrumental in driving an expected USD$190 billion of pharma sales growth between 2015 and 2020.2

Given the volatile political and economic factors affecting some emerging market countries, however, the question of whether BRIC or MIST remain useful as pharma-market groupings is worth considering as we move into 2020 and beyond.

**Mexico**

For Rachel Howard, director at global healthcare market research and consulting agency Research Partnership, Mexico is “perhaps the most challenging of the four markets to predict what will be happening 12 months from now.” Much of this uncertainty is down to the “wild ride” of changes to the healthcare system that have characterized the first year of President Andrés Manuel López Obrador (commonly referred to as AMLO)’s six-year term, following his election in December 2018. AMLO’s plans to disband Seguro Popular, the health administration system set up in 2003 to provide groupings is access to healthcare for the uninsured population, and create a unified, nationalized health service “has not proven easy to achieve,” says Howard, not least because of strong resistance from the unions. Instead, AMLO founded INSABI (the Institute of Health for Welfare) to replace Seguro Popular and absorb state-run systems, covering over 60 million citizens. However, “the finances to run this system are severely lacking, meaning there is huge pressure to contain costs.”

Moreover, notes Howard, the AMLO government has empowered an office of the Ministry of Finance to get involved in the procurement of pharmaceuticals for all of the state institutions in an attempt to constrain expenditure. But “tender conditions are aggressive and unfavorable to manufacturers, leading to instances of suppliers withdrawing from the market,” she told *Pharm Exec*. The government has also recently circumvented the Mexican regulatory body, COFEPRIS, to purchase unregistered drugs from overseas, leaving COFEPRIS’s future uncertain and the pathway to market access in Mexico “increasingly less transparent.”

At the same time, says Howard, Mexico’s private sector has “enjoyed a healthier trajectory, benefiting from a significant rise in the number US medical tourists seeking treatment across the border.”

**Indonesia**

Indonesia’s Healthcare and Social Security Agency (BPJS), launched in 2014 to administer a universal healthcare program (JKN) across the country, continues to struggle, says Howard. The system now covers 30%–40% of the Indonesian population but is running at a deficit exceeding USD$1 billion. From January 2020, the government will double participants’ monthly premiums in an attempt to overcome the shortfall. However, fearing the scheme’s slow repayment process, many private hospitals have resisted joining the program, and “those providers that have joined have shifted their focus to cost control rather than quality—meaning that biopharma sales growth has stalled in recent years,” explains Howard.

She adds: “Although Indonesia has opened up to allow foreign private healthcare providers to establish themselves in the market, the country’s infrastructure is not yet sufficiently developed to accommodate medical tourists. Rich Indonesians instead tend to travel to other Asia-Pacific destinations in search of quality healthcare.”
of private hospitals is growing but they are still concentrated on the islands of Java and Sumatra, with areas outside of the main islands remaining underserved.

**South Korea**

South Korea’s place within the MIST grouping is contentious as it is “by far the most advanced of the markets” and, “arguably not ‘emerging’ at all,” says Howard. South Korea was the first country in Asia to consider pharmaco-economics data, have a well-established and transparent health technology assessment program for pharmaceuticals and medical devices, and the country already enjoys a thriving medical tourism market. “With South Korea pushing to position itself as one of the world’s leading medical hubs, we expect to see continued year-on-year growth through 2020,” observes Howard. “The government is actively investing in biopharma innovation and is making rapid progress with the consolidation of hospital medical data into a form that seamlessly supports digital health initiatives. We can expect state-of-the-art techniques to become increasingly commonplace as the country pioneers the latest technologies in healthcare.”

**Turkey**

“Turkey has long been considered a challenging market for innovative pharma due to its aggressive implementation of external price referencing, which means prices tend to be the lowest in Europe,” says Howard. In addition, she notes, the country’s volatile exchange rate has been a source of uncertainty for international players. Economic recovery could be faster than expected, however, and “Turkey has growth potential, with its universal healthcare system now well established through the Health Transformation Program.” The proportion of GDP allocated to healthcare remains low at 5% and the current pricing environment is restricting access to innovation, but there are “positive signs of progress,” adds Howard. “The Turkish government’s ambitious ‘Vision 2023,’ announced back in 2013, sets out improving healthcare as a priority area, with goals of increasing the number of physicians per 100,000 people, stimulating the domestic biopharma industry, and establishing the country as a medical tourism hotspot.”

**MIST or MINT?**

Given South Korea’s advancement compared with the rest of MIST, some analysts think Nigeria fits more comfortably in the group, hence another O’Neill acronym, “MINT.” While Nigeria is the smallest of the MINT economies, it was two years ago the fastest growing. But a long list of factors continues to make Nigeria problematic from a pharma perspective. It is dogged by the lack of standardization of many drugs of herbal origin; the government’s inability (or unwillingness) to deal with the illegal importation, manufacture, and sale of fake medicines; and poor research support from the government and private companies.3

The scale of Nigeria’s infrastructural, political, and fiscal challenges means that its potential will take longer to realize than in other MINT markets, says Howard.

**Emerging from ‘emerging’**

If South Korea is rising above MIST, China looks to be breaking out of BRIC. Howard has seen the China market “hugely opening up” in 2019, where Brazil has continued to be dogged by political questions, India still has challenges with patent protection, and Russia has “dropped off the radar a bit.” The 2019 agenda was “overwhelmingly dominated by biopharma wanting to keep up with China,” says Howard. “It is now the number-one must-win. And as global pharma still has a lot to learn about how to win in China, it will continue to be a big area of concern in 2020.”

China and South Korea underline the arguably increasing redundancy of the term “emerging markets.” But if the term fails to accurately reflect the diversity of the countries or their varying levels of advancement, it at least remains, says Howard, “good shorthand for the markets outside the US, Europe, and Japan.” As we enter a new decade, however, it will be interesting to see how the changing pharma fortunes of BRICS and MIST—as well as those of Colombia, Vietnam, Bangladesh, Egypt, Iran, Pakistan, and the Philippines—prompt a wholesale rethink of how we manage our expectations of these disparate countries.

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www.PharmExec.com features easy-to-use navigation with content available by targeted category, keyword search, or by issue. Fresh content supplied by Pharmaceutical Executive’s expert staff as well as external sources make PharmExec.com the source for comprehensive information and essential insight.
The Ins and Outs of Incorporating Patient Centricity in Drug Development

Participants in the roundtable discussion included:
- Lisa Henderson (Moderator), Editorial Director, Pharmaceutical Executive
- Mathieu Boudes, PhD, European Patients’ Forum, PARADIGM Coordinator
- Kristina Bowyer, Executive Director of Patient Advocacy, Ionis Pharmaceuticals
- Robyn T. Carson, MPH, Executive Director and Head, Patient-Centered Outcomes Research, Global Evidence & Value Development, Allergan
- Kenneth Getz, MBA, Director of Sponsored Research Programs and Associate Professor, Center for the Study of Drug Development, Tufts University School of Medicine
- Danya Kaye, Director of Business Development, R&D and Innovation, Inspire
- Michelle Marlborough, Chief Product Officer, AiCure
- Debra Michaels, Associate Director, Scientific Programs, DIA
- Bray Patrick-Lake, MFS, former Director of Stakeholder Engagement, Duke Clinical Research Institute
- Sy Pretorius, MD, Executive Vice President, Chief Medical & Scientific Officer, Parexel
- Steven L. Roberts, PhD, Chief Scientific Officer, Tuberculosis Sclerosis Alliance
- Rosamund Round, Director, Patient Innovation Center, Parexel

LISA HENDERSON (Pharmaceutical Executive): What are the latest developments at your companies around patient-centric drug development?

ROBYN T. CARSON, MPH (Allergan): Two years ago, we established a cross-functional task force to evaluate current practices with respect to patient-centricity in R&D and develop a strategic plan to institutionalize patient-centricity at Allergan. As a result, we identified areas of the business that were more mature than others and created a strategic plan focused on three key areas for patient-centricity: 1) Increasing awareness and engagement; 2) Improving the patient experience; 3) Embracing new legislations.
We identified and prioritized several patient-centric activities across these three key areas. For example, with respect to trials, we piloted protocol co-creation with patients and revamped a clinical trial website to be more patient friendly. To integrate the patient voice into our culture and keep it top of mind for employees, we have had several patients speak about their experience with their health condition and treatments at our town halls. This connection between patients and our team members is invaluable, particularly for those who do not normally have direct exposure to patients. We want to make the patient experience come alive for the entire company.

**KRISTINA BOWYER (Ionis Pharmaceuticals):** We’re a smaller biotech company, with just under 500 employees. We don’t have a commercial component. We partner all our programs with external commercial expertise and we are a platform technology and therefore, very target-specific in our disease focus.

We are patient-focused at various levels of the company but even at a small company, groups can get siloed. Over the past few years, we have implemented a continuum approach with a focus on the patients for each target.

We hold R2D (research through development) meetings that include the entire team, from bench research scientist all the way through to the development team and include every department that will play a role in the development of that drug (e.g., regulatory, manufacturing, etc.). Projects are required to include advocacy and the patient focus on the disease; even research programs incorporate the patient perspective. We also create a pathway for all of the relevant patient related data that we capture to be published.

Our programs have a higher success rate because of the combination of our technology and these initiatives.

**MATHIEU BOUDES, PhD (European Patients’ Forum [EPF]):** In the patient engagement community, there is a need for more data showing that the impact and the relevance—businesswise—of patient engagement in medicines R&D and access. No matter the current momentum around patient engagement, advocacy is still very much needed and therefore our evidence-based advocacy work will now take into account the results coming from the report. Up to now and until this report, few data were available to back the idea that patient engagement is a smart thing to do when developing medicines. Indeed, the only publication that supported the previous statement was about the expected net present value associated with investment in patient engagement activities in clinical trials.

So, now there is a growing body of evidence showing that all stakeholders must be more prepared to meaningfully take on the challenging of systematically engaging patients in the processes of developing new treatments and to bring them to the market.

At EPF, by leading the PARADIGM consortium—composed of 34 partners including 18 pharmaceutical companies, four patient advocacy groups and academics—we are working to develop a monitoring and evaluation framework aiming to support the collection of data when engaging with patients to demonstrate the wide impact that those activities have. It will be ready by mid-2020. Also, to support the movement of patient engagement, we do believe in empowering the patient community through training and, since 2012, the program EUPATI (standing for European Patient Training Academy on Therapeutic Innovation) to trigger a major rethink in the way patients and the public understand the medicines development process and their own involvement therein. Armed with a deeper understanding, patient experts and advocates will be empowered to work effectively with the relevant authorities, healthcare professionals and industry to influence the medicines development process for the benefit of patients. This has not only been a tremendous success so far and a breakthrough for the patient community, but also—and more interestingly—far beyond. The current trend is also to train the professional on how to best engage with the patients in the context of medicines development.

**PATIENTS AS KOLs**

**HENDERSON:** Can we drill down a bit and talk about the patients themselves?

**STEVEN ROBERDS, PhD (Tuberous Sclerosis Alliance):** I led at least one project that was pre-IND. It was a common disorder: renal failure in chronic kidney disease. One key lesson for me, moving from outside pharma and into patient advocacy, was...
“We actually started going to the executive steering committees with our sponsors saying, ‘Let’s have a core set of materials that will be patient-centric on every study, and this is just the way that we do business now.’”
—Rosamund Round, Parexel

not to waste the opportunity to learn about what patients really need. The patients are a different kind of KOL. At the start of project, when you talk to scientific or medical KOLs, add the patient group or individual patients to get that conversation started early. Doing it in parallel saves time.

BOWYER: I agree. Sometimes, KOLs are looking at what they can treat, which may be something entirely different from what the patients want relief of. The disconnect is that researchers are focused on academic collaborations and KOL relationships, and even clinical development is very focused on KOLs.

Another issue is that cultural differences make patient centricity challenging in some areas of the world. For example, we have almost no experience in China.

SY PRETORIUS, MD (Parexel): We had a patient-centricity workshop in China with representatives from the regulator, general industry and academia for that reason. The key takeaway was they are very keen to use China as a “living laboratory” because there is limited patient information available about trials. An interesting idea that came out of that discussion was to leverage social media platforms like WeChat, which is popular in China, for patient engagement. How do we create the patient-advocacy infrastructure?

HENDERSON: That’s an interesting point. What role does budget play in developing patient-centric protocols?

DANYA KAYE (Inspire): Budget can be a big challenge, along with time. Many times, a sponsor organization says, “I don’t have the time to do research with patients,” even though Inspire can turn around a program in a week or two. They note that even if Inspire did do patient research, they wouldn’t have time to make any changes on the protocol design based on patient feedback. We had one situation where the sponsor was measuring the reduction of tremors as an endpoint, but through research, we uncovered that the outcome the patient really cared about was forgetfulness. So, their research was not focused on the endpoint that mattered most to patients.

Another challenge comes from the fact that patient engagement groups are usually not fully integrated within organizations and often don’t own any budget for these sorts of patient-centric activities. Often, the budget for these initiatives comes from the study teams that perceive these efforts to be additional work, time and money. And sometimes, nobody knows who owns the budget for developing patient-centric protocols and patient centricity efforts in general. Although a handful of organizations are making real progress in developing patient-centric protocols, it’s also a lot of talk about this being very important, with not enough adoption and implementation because nobody’s accountable for making it happen.

ROSAMUND ROUND (Parexel): I also see that disparity among many of our pharma and sponsors that were saying yes, developing patient-centric protocols is really important at the senior level. On an individual, study-by-study basis, however, there may be no budget for such work. So, we actually started going to the executive steering committees with our sponsors saying, “Let’s have a core set of materials that will be patient-centric on every study, and this is just the way that we do business now.”

They know that every time they work with us, we’ll do a protocol review. We need to get that patient input as soon as possible and we have a quick and cost-effective process that we can use to accomplish that goal from the draft protocol synopsis to the protocol finalization.

BOWYER: I’ve been fighting for a budget under this department for eight years, and it has been a painful process because we don’t have the right metrics.

BRAY PATRICK-LAKE, MFS (Duke Clinical Research Institute): Patient-centric development is viewed as an add-on, or it gets pulled out as a per-head recruitment fee in some way that never works because the dollars don’t flow. It’s not an actual integrated part of most programs.

BOWYER: I have to do some creative maneuvering with budgets. But the recognition of the benefits of patient centricity is happening now, starting at the top with our CEO all the way down through the organization. It’s as though all of a sudden, the spotlight is on patient centricity. The budget process will always be painful, but I think the value is more tangible now and the metrics are a little bit more available to show management.

THE ROLE OF CROs IN PATIENT-CENTRIC TRIALS

HENDERSON: What is the role of the CRO?

BOWYER: We’re bombarded by CROs who say that they do patient-centric research, but that’s not their specialty. For example, a CRO may say they have a new capability for rare diseases, but they really have no experience in this area, they have no patient relationships and they have no knowledge of rare disease. It can be difficult to determine what’s a marketing gimmick and what’s the honest truth.

KENNETH GETZ, MBA, (Tufts University School of Medicine): I think rare disease is a unique environment. If you’re looking at traditional diseases, with large patient populations, we view the CROs as better positioned to support a truly integrated patient-centric or patient-engagement model. Some organizations have found ways of integrating the analytics. That’s been a big eye opener for us. They’re positioned to guide a lot of companies, integrating so many fragmented and siloed functions within their organizations. And, I think that collaboration is key between the sponsor and the CRO to make that happen.

A lot of what’s being done by major sponsors and smaller companies has been insular to some extent. It’s very pilot-oriented, but it rarely reaches a point where you’re truly able to collaborate with other parties that are supporting your research activity. I think that helps explain why so many CROs are also trying to innovate in this area. We’re all trying to do what we can within our organizations to change the
culture, but we’re not interacting with other organizations to move in the same direction. That’s been a real challenge for us and one reason why we’re not seeing more adoption.

**PATRICK-LAKE:** We recently had one product where the sponsor was using a CRO. The process was not even close to the standard that we would say is legitimate engagement. We use bi-directional relationships, which means patients actually have some input, some influence, and they get something back. It’s got to create some kind of value for the patient group that helps us co-design.

**Kaye:** I believe things are changing. The FDA has been helping encourage and advance the thinking around patient-focused drug development. Inspire has had ongoing contact with the FDA for the last two years to discuss patient-focused drug development and the patient voice, and understand what sort of research methodologies they’re comfortable with, and applying these in our current work with them to incorporate patient and caregiver insights, such as by leveraging social media as a data source to better understand the patient experience. I think we’ve come a long way.

### Challenges and Opportunities

**Henderson:** What challenges do you face in becoming more patient-centric?

**Michelle Marlborough (AiCure):** At AiCure, our role, through our technology platform, is to establish the link between patients, disease and treatment. We do this by quite literally engaging patients through a smartphone application to confirm medication ingestion. The challenge is that access to patients through the sponsor or CRO (ahead of our deployment) can be extremely limited, as is the availability of any patient information. While we hope to achieve access to patient information in advance, we are, at a minimum, typically one step removed. At times, the sponsor or CRO will take technology to a patient board, but rarely will we be invited to engage with patients direct in the room to discuss about the technology.

**Patrick-Lake:** At Duke, we have a team working on the patient-centric model, including pricing models. We’ve had pushback from some sponsors that either don’t want to pay for it or think we should just do it. They have the attitude that if this is so important, then Duke should just do it for free.

**Round:** We have been in discussions at various executive committee meetings, to talk about the value of patient centricity and the related budget. It’s so important. We need agreement at the top level that this is how we do business together; this is how we work.

**Getz:** Is the ultimate burden on pharma and biotech? We mostly talk about waiting for research sponsors to drive this process. Is that how patient-centric activity will ultimately be adopted?

**Bowler:** I think so. For all the money that pharma spends on patient involvement, they really believe they have better ways to spend it. In the recent study we did on amyloidosis, we were able to work with the Amyloidosis Research Consortium and fund aspects of our patient centricity work.

**Getz:** With Duchene’s, cystic fibrosis and Parkinson’s disease, advocacy groups co-fund the development. Those are interesting models where I think the level of patient engagement is much higher than is typical.

**Bowler:** What’s missing is that industry doesn’t understand the value of empowering the patient group. You have to empower patient advocacy groups so that they have the tools they need to support their patient community. And most of the funding we provide has been focused on empowering patient groups to conduct projects focused on the support that they need to develop their community so they can interact and support their community with industry. It’s the beginning of a long transparent relationship.

**Carson:** One of the challenges we face in industry is that we need to think about multiple stakeholders, and we’re in an environment with constrained resources. I was really excited to hear that there are some established metrics now because when we are making decisions about allocating resources, we need to balance what is important to patients with the needs of other stakeholder groups. Another barrier for internal adoption is the need for pure education—not everyone understands patient centricity and how to implement this within R&D medical product development.

Also, you don’t get meaningful engagement with patients if you haven’t directly engaged with them. We’ve been doing a lot of exit interviews with patients, asking about their experience in the trial and their experience with a new, innovative technology platform. These insights inform future trials. The earlier you can do that work and engagement, whether it’s Phase I or Phase II, the more chance you have to align solutions with those insights and meet requirements of the varied stakeholders.

**Getz:** The challenge we’ve seen with pilots is they’re never compared with a representative program that will convince the rest of the teams that it’s worthwhile. The pilot becomes compartmentalized or siloed itself. That’s a huge issue.

**Debra Michaels (Dia):** We’ve talked about surveying the internal landscape and understanding what is going on within the organization that might need improvement. Then, you have to make sure you’ve got your leadership—or a champion—behind you, because it really takes that support to integrate it into the wider organization. There are so many places where touch points with patients can be meaningful and make a difference.

**What are patient-centric trials?**

Patient centricity has no universal definition. For the purposes of this discussion, **patient-centric trials** are trials designed (or co-designed with patients) around patient needs and patient-relevant outcomes. The goal is to make it easier and more relevant for patients to be involved in trials. Patient-centric trials incorporate participants’ needs, reviews and experiences into the trial design. On average, recruitment times can be reduced by half or more, and more participants are being recruited when the patient-centric approach is incorporated.
We try hard to work together because we feel that that’s working. We did research across 10,000 of our members and found that patients will proactively bring a clinical trial option to their doctor more often than their doctor will bring it to the patient (21% of the time vs. 19%, respectively). Patients are becoming a lot more knowledgeable. I think patients are looking for clinical trial options.

BOUDES: At EPF, we are a co-founder of Patient-Focused Medicine Development (PFMD), that was established in October 2015 as an open, independent global coalition of health stakeholders. PFMD aims to transform the way in which we understand, engage, and partner with patients globally in the design and conducting of research and development of medicines by focusing on unmet patient needs. It brings together relevant experts and synergizing disparate but complementary efforts that integrate the voice of the patient across the lifecycle of medicine. PFMD is driving the culture change and co-producing tools needed to make systematic patient engagement happen.

We try hard to work together because we feel that that’s been missing. As it is clear that the patient engagement is fragmented and there is a call from all stakeholders to reduce this fragmentation, the three initiatives PARADIGM that I mentioned earlier, PFMD and EUPATI will co-power in the coming months, an Patient Engagement Open Forum, a two-day event where we will explore patient engagement beyond aspirations and work in a multi-stakeholder context to make it happen. The Forum aims to provide a holistic perspective of patient engagement, the landscape and actors, and foster collaboration and co-creation while breaking down fragmentation and silos that are often present in-patient engagement work. The agenda offers a deep dive into some ongoing patient engagement work done by many collaborative initiatives. Topics range from tools and recommendations for effective patient engagement, methods for monitoring and evaluation of impact and outcomes in patient engagement activities, and fair market compensation for patient input to interactive sessions on assessing good practices in patient engagement and more.

Patrick-Lake (DIA): It would be powerful if the current leaders in this landscape could develop a standard for patient engagement. The industry, including the DIA, has initiatives in place to create such standards.

Marlborough: What Robyn mentioned is very important. The only way this becomes the future of the industry is if it becomes normal practice. You can’t achieve this as a standard by only having one individual in an organization and having that person address every inquiry. This needs to be deeply embedded into every part of an organization. To ensure that these techniques are consistently communicated and adopted as a core component, we need to establish a set of metrics or performance indicators to achieve efficiency, quality output, and uniformity of performance.

Developing informational snippets, addressing these teachable moments, or drafting basic talking points can be among the gold standard of things to think about. If your demographic looks like this, then you should consider what may be going on in their lives. We should agree to an acceptable set of standards and move to get these data and recommendations published—this could be a recipe for success in the making.

HENDERSON: How has patient involvement changed?

Kaye: We did research across 10,000 of our members and found that patients will proactively bring a clinical trial option to their doctor more often than their doctor will bring it to the patient (21% of the time vs. 19%, respectively). Patients are becoming a lot more knowledgeable. I think patients are looking for clinical trial options.

Getz: Many trials on rare diseases are being pushed out to physicians who have never conducted a clinical trial. They’re so inexperienced, and the patient turnover rate is much higher with this community as well, so they never achieve a good level of experience.

Marlborough: What Robyn mentioned is very important. The only way this becomes the future of the industry is if it becomes normal practice. You can’t achieve this as a standard by only having one individual in an organization and having that person address every inquiry. This needs to be deeply embedded into every part of an organization. To ensure that these techniques are consistently communicated and adopted as a core component, we need to establish a set of metrics or performance indicators to achieve efficiency, quality output, and uniformity of performance.

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HENDERSON: What are you doing to support patients’ involvement in clinical trials?

Bowyer: Virtual assessments are becoming more important, but I need a tool so that I’m not burdening the patient family with monthly visits to a web site, which may not be easy for them. Creating apps with clear, simple directions is important so patients can do a short assessment at home and capture it on video is one of the things that we’re looking at.

Kaye: It’s important to help patients feel connected during a study. When I was in a clinical trial, I asked my oncologist if I could talk to another patient that had gone through the trial or was going through the trial. I was unable to be connected to anyone. Patients want to connect with other patients, and the industry doesn’t really facilitate that. There’s a fear of legal ramifications. If the industry can do a better job of facilitating that need and really helping patients connect with each other during the clinical trial and afterwards, that would be doing a big service to improving the patient experience during and after a clinical trial.
PATRICK-LAKE: You can use technology to take data or you can use technology to create value and enhance that high-touch participant experience. We need to think about opportunities to give to patients, rather than just taking. Some will really enjoy the experience of high touch that technology can give them.

You also have to provide the social aspect. I would consider a monthly retention event, where people get together with the site PI or whoever. You can still do that intervention if it’s cheaper. These are all value tradeoffs.

COLLABORATION AND THE PATHWAY FORWARD

HENDERSON: How have collaborations helped your organization achieve your goals?

CARSON: We have a great collaboration with a group called SonarMD, where we developed a patient engagement platform for irritable bowel syndrome with diarrhea (IBS-D). We leveraged patient-reported outcome measures and put it in the hands of the patients on any platform they wanted. They logged in once a day, provided answers to a set of questions, and were provided with a disease severity score that was immediately accessible to the patients as well as their clinician and nurse manager. It created a connectivity between patient and provider between office visits, whereby, the provider can monitor them in real time and intervene if necessary.

BOWYER: I think the continuous glucose monitor, Dexcom, is the perfect example of that. Your doctor sees the patient’s readings firsthand.

HENDERSON: On the other hand, one problem with collaborations is when they’re not formalized, monetary relationships. That’s where they can break down.

Shall we recap some of the actionable steps that we’ve discussed today?

CARSON: I think it’s about continuing to educate internally about what truly must happen to do meaningful patient-centered work. New innovations and process always take time to diffuse through an organization, but the changes we are making are both exciting and important.

MICHAELS: It’s just not easy. It’s as much a management exercise as it is about the actual patient engagement and what we’re doing.

CARSON: With respect to trial design, we need to put a step in the planning process where we review whether it’s convenient for the patient to participate in our research studies. Can we leverage new technologies to take a customized approach to trial participation that meets participants’ needs?

PATRICK-LAKE: Workforce development is an issue. We spend a lot of time all coming from different perspectives—patients, academics and sponsors. We all sat around the table and asked, “How do we work together?” We cut CROs out of that process because we were afraid they were going to commercialize themselves. Now, I think we should have kept them in the room because it’s important for them to understand what we are doing and how we are doing it.

I also am seeing, in companies, situations where people are moved from one area to another but never actually see things through the patient lens. If you’ve come from regulatory or medical affairs, you’re not thinking from the patient’s viewpoint. I’m seeing that too often really.

BOWYER: You have to meet and know the patients to be driven.

PATRICK-LAKE: Yes, you need somebody who has a lens that puts that first. Some CROs do engagement really well, but I don’t know that we’ve all been in the same room a lot, sharing that thinking as the field grows.

ROUND: Some sponsors are still early in their patient centricity journey. Together in this room, we are obviously all huge advocates for the approach, but ideas adoption in the industry is still not yet widespread.

SUMMARY

The importance of incorporating patient centricity into the drug development process is widely acknowledged, even though the concept is relatively new. The clear message that came out of this Pharmaceutical Executive roundtable is that making the drug development process more patient centric can pay dividends in many areas such as higher likelihood of FDA approval, much higher likelihood of product launch and more favorable decisions from payers. These benefits are particularly important in an era where the cost of drug development is skyrocketing, in the billions of dollars.

While building patient centricity into drug development and clinical trials is an industry-wide goal, it can be a challenge to infuse new ideas and practices into an old process. Such a shift will take time as industry determines how to best use patient-centric approaches and explores ways to make patient centricity a collaborative endeavor among CROs, sponsors, those that carry out clinical trials and other stakeholders.

Such a collaborative approach among parties might include:

1. Creating a standardized model for patient engagement and a plan for generating adoption for this model,
2. Continuing to develop metrics that demonstrate the very real advantages of patient centricity and
3. Sharing the metrics and the models with everyone involved in the drug development process, including top management and those who determine budgets.

Another critical component of this plan is ensuring that patients feel they are a part of the study design planning and follow-up. Engaging with patients early on in this process may even be a matter of forging partnerships with patient groups, many of which are very interested in being part of the drug development process. Hand-in-hand with these efforts is the need to develop new, convenient tools that support patient involvement, including novel ways for those in a trial to report their experience with a drug and, if needed, receive outreach from physicians.

When all groups in the drug development process embrace a patient-centric model and become stakeholders in it, industry can expect increased success in getting new drugs to market.

REFERENCES

1. The Innovation Imperative https://druginnovation.eiu.com/
Led in part by its new head of the Americas business, Sebastian Guth, Bayer went all in in 2019 on expanding pursuits in science and discovery, striking deals with 11 digital health startups and upping investment in disease-detection programs and patient engagement and education.

By Lisa Henderson

Last year, Bayer made several announcements supporting its larger and long-term strategic vision for the pharmaceutical giant. “We are at an inflection point where breakthrough science is transforming care almost daily,” Sebastian Guth, Bayer’s president of pharmaceuticals, Americas region, told Pharm Exec in a recent interview marking his first year in the position. “Bayer had to make a clear choice between pushing the boundaries of science, investing in the big bets, or staying in the here and now. And we’ve made our choice and are convinced that science and innovation are the way to go. In many ways, the decisions that we have made are already being reflected in our portfolio and pipeline today.”

In the fall of 2019, Bayer secured collaboration agreements with 11 digital health startups aimed at longer-term development of specific digital solutions to improve patients’ health in the fields of cardiovascular diseases, oncology, ophthalmology, pulmonology, and radiology, as well as digital therapeutics. The startups were selected from 750 applications from 65 countries.

Another funding source for treatment innovation has come from Leaps by Bayer, established in 2015. This initiative is the vehicle with which Bayer invests in breakthrough ideas across all businesses. In August, Bayer announced that it would acquire the remaining 59.2% stake in BlueRock Therapeutics, the biotech in which its Leaps by Bayer division had originally invested in 2016. BlueRock, which specializes in engineered cell therapies in neurology, cardiology, and immunology, was purchased for about $240 million up front, with an additional $360 million payment based on certain development achievements.

Additionally, in mid-October, Bayer launched LifeHub UK to accelerate and optimize disease detection and data-driven drug discovery by developing artificial intelligence (AI)-enabled imaging
solutions. The new hub is the seventh pillar of Bayer’s global network of LifeHubs and will build on radiology and the company’s knowledge and expertise in the medical imaging field.

For pharmaceutical therapies, Guth says one of his objectives is to support transformational ideas that are focused on cures. This is illustrated with recent investments made in the Leaps division with BlueRock, as well as Bayer’s investment in cell therapy company Century Therapeutics, which Guth says complements the activities of BlueRock in the oncology space. Others include Pyxis Oncology’s tumor microenvironment-based technology to identify immuno-oncology targets and Khloris Biosciences, which is using induced pluripotent stem cells (iPSCs) to trigger a robust immune-response involving innate and adaptive immune cells toward anti-cancer vaccines. “These are examples of big dreams and big ideas that really push the boundaries of science,” says Guth. “Leaps makes significant investments, and, frankly, it’s just amazing science and bold moves that we’re supporting.”

With so many biotechs and early stage discoveries out there, Guth says the decisions around which to invest in ultimately connect back to the people driving these efforts. “It’s fundamentally a human pursuit and it’s the people that we look at very carefully when deciding where to invest and where not to invest,” he says. “It’s their expertise and their capabilities. It’s the experience they’ve gained in a particular space over the years, and it’s also the composition of the teams and it’s the culture that we see at work at those companies.”

Whether large or small, the partnering capability of those companies—the sense of how Bayer will be able to work with the respective teams to bring ideas forward—is part of the due diligence conducted prior to investing, according to Garth. “Culture is critical… it’s part of the due diligence we do before we decide whether we can build one of these strong partnerships.”

**Passion for patients**

The concept of patient centricity and being what Guth refers to as “customer obsessed” is something the executive has been passionate about for a while. But he says it was his experience with his father’s passing from lung cancer more than two years ago that “struck a greater chord” with him. “Going through that experience of loss—not as a pharmaceutical executive, but as a son, as a family—reinforced the necessity to put emphasis on [patient centricity],” he says.

Guth believes the language that the pharma industry uses is difficult “for patients to really understand what it is that we talk about and to translate that into words that make sense.” He adds: “It’s an area that matters to me and something that I believe is important in our corporate strategy.”

“Culture is critical…it’s part of the due diligence we do before we decide whether we can build one of these strong partnerships.”

Bayer’s Patient Insights and Engagement (PIE) network helps Guth channel his patient-centric vision; he is one of the executive sponsors of the work that comes out of the network. PIE is a group of people embedded across the different functional areas of Bayer, including but not limited to research and development, medical affairs, market access, and commercial. “In many ways, [PIE] is the voice of patients in what we do in those functional areas,” says Guth.

PIE is built on four pillars: listening, understanding, acting, and responding. The network has established a patient advocacy and advisory council, which integrates patients into Bayer’s development process. They physically sit down with researchers to ensure that their point of views and relevant endpoints are incorporated into Bayer clinical trials.

**FAST FOCUS**

» Prior to being named president of Bayer’s pharmaceutical business in the Americas in December 2018, Sebastian Guth was vice president and chief marketing officer for the company’s global pharmaceuticals business. Previously, he served as president and CEO of Bayer Yakuhin Ltd., Osaka, leading Bayer’s healthcare business in Japan.

» Guth started his career in the pharma industry with Schering AG, where he held senior roles in Asia and the Middle East. He was later appointed head of strategy and business development for Schering’s European business.

» Guth completed his studies at the WHU Otto Beisheim Graduate School of Management in Germany. He earned his doctorate in Management Sciences from Berlin University of Technology in Germany.
“Overall, we’re seeing a significantly greater focus and the importance of patient-reported outcomes in the clinical trial work that we do,” says Guth.

In a similar effort, Bayer recently established a national joint partnership with the National Kidney Foundation to build the first patient network in chronic kidney disease. The objective is to collect patient data to better design patient educational resources and more targeted patient-centered trials.

Another example is Bayer’s significant investment in precision oncology, particularly around patient education and activation. Guth says Bayer invested $70 million alone in 2019 in activities that focus on driving the uptake of genomic testing in cancer. Bayer’s Test Your Cancer campaign (www.testyourcancer.com), launched in May, features patient stories and educational materials, including a brochure, patient-doctor discussion guide, and fact sheet describing what occurs during a genomic cancer test.

Bayer also holds sessions each quarter where teams engage one-on-one with patients. “It’s amazing how much I learn every time I sit down with patients,” says Guth.

He recounts one particular example: a patient named Keith, who had late-stage salivary gland cancer, and was basically told by his physician that he had three weeks to live. Keith was then initiated on Bayer’s Vitrakvi therapy, which is indicated for the treatment of adult and pediatric patients with solid tumors that have a neurotrophic receptor tyrosine kinase (NTRK) gene fusion. “This was three years ago, and he described how the tumors melted away and how he knew when he went for his first scan after the therapy had been initiated that it would look so much better because he could feel the tumor mass shrinking,” says Guth. “It’s those conversations that ground us in what it is that we do.”

AI and technology

Guth believes that it’s not only the scientific breakthroughs that will improve patient health and outcomes, but also technological innovations. “I honestly believe that AI has tremendous value in patient...
conversations, particularly in identifying the right medicine at the right time and, frankly, much faster to the appropriate patient,” says Guth. “In the US, postmortem research is suggesting that about 10% of all patient deaths are attributable to a late or wrong diagnosis. That’s a massive problem.”

Guth contends that the purpose of deep learning technologies and AI at large is to help physicians diagnose significantly earlier and, at times, more appropriately, with initiation of the right treatment. He noted the work Bayer is doing in chronic thromboembolic pulmonary hypertension (CTEPH) and building an algorithm deploying deep learning technologies to help physicians identify this disease earlier. In late 2018, FDA granted breakthrough device designation to the AI software for CTEPH pattern recognition, which Bayer is currently developing jointly with MSD (the trade name for Merck & Co. outside of the US and Canada). CTEPH affects an estimated eight to 40 people per million globally, and is difficult to diagnose because it’s rare. Its symptoms are similar to those of other lung diseases and physicians may not always recognize it. As such, radiologists usually have the first opportunity to identify CTEPH in patients; therefore, it is vital that they recognize CTEPH indicators on images.

“In our mind, we are well-positioned to do that successfully because we understand the biology and are also growth market leaders in diagnostic imaging in radiology, in contrast agents specifically, and in fluid delivery systems and technology in the radiology space,” says Guth. “We have access to aid with expertise in imaging and access to a vast amount of images. So we’re able to construct training data sets.”

**Looking back and ahead**

Having accomplished a great deal in his first year leading Bayer’s pharmaceutical business in the Americas region, Guth has additional goals for the future. They include:

» Continue to identify the best academic institutions, and partner with them for the longer term, not just on a transactional basis.

» Continue to identify the hot biotechs in relatively early stages, and collaborate with them in the right way and form.

» Identify later-stage opportunities that complement Bayer’s existing areas of focus, including oncology, women’s healthcare, radiology, hemophilia, and multiple sclerosis; and building out an increasing presence in the cardiovascular space, in pulmonary arterial hypertension and chronic thromboembolic pulmonary hypertension, and in the cardio-renal arena.

Guth joined Bayer through its acquisition of Schering AG in 2006, where, at the time, he was head of strategy in business development and pricing for Schering in Europe. After the acquisition, Guth was appointed CEO of Bayer Turk, Istanbul.

“We may wonder why we’re not creating different results, but it may be because we need to create new experiences that allow for new beliefs.”

“At that time, I was fortunate to not only spearhead the pharmaceutical business, but was also given the opportunity to lead Bayer’s business at large and across both the health and nutrition space, as the most senior Bayer representative in Turkey,” he says. “That was a tremendous opportunity. It helped me understand relatively quickly the breadth of Bayer and the incredible work we were doing, both in pharmaceuticals but also outside of pharmaceuticals.”

Guth believes these growth opportunities reinforced two core approaches that remain critically important to him as a leader today—the willingness to listen and learn and to not fall into the trap of judging too quickly. “As I go back to that period, it was when we laid the foundation for what the company is today,” says Guth. “If you look at simply, for example, the sheer size of our company today and the size at that time, it’s vastly different. We’ve grown considerably, both culturally and in terms of our portfolio.”

Another leadership model that Guth follows is that experiences shape a person’s beliefs, which drive behaviors and helps people achieve results. “We may wonder why we’re not creating different results, but it may be because we need to create new experiences that allow for new beliefs,” he notes.

To that end, in the area of culture, Guth says he tries to create different experiences within his team that support a change in beliefs and behavior toward results. “I put a lot of my emphasis over the last 12 months on building a culture that supports the drive and the results we want to see,” he says. 
Is the Tail Wagging the Dog in Drug Market Entry?
Three product launch trends driven by emerging biopharma

The commercial pharmaceutical market of the 1990s has all but disappeared: Low-priced drugs designed to treat large-market diseases like depression and high cholesterol are making way for higher-priced specialty drugs designed to treat small, targeted patient populations. With this shift, emerging biopharmaceutical companies are not only developing an increasing number of novel drugs, but increasingly launching those assets.

As 2020 and the start of a new decade begins, we see three major trends taking shape as more of these companies prepare to launch: an increase in the number of originator products and US approval filings, an uptick in expedited approvals and self-commercialization, and greater presence in markets outside the US.

Here’s our look ahead at these market-shaping launch trends.

**Trend No. 1**
A growing number of emerging biopharma originator products and filings for US approval

As growth in the total number of new FDA approvals per year has slowed to a 4% year-over-year average, small and emerging biopharma companies are increasingly leading both in product origination as well as filings for approval (see Figure 1 on facing page for growth rates through 2018; note that in 2019, FDA approved 49 new molecular entities, several of them developed by emerging biopharma organizations).

ZS analysis and data published by FDA and the contract research organization IQVIA shows a 35% decrease in the share of assets originated by large-cap pharma companies and a 42% increase of share of assets filed by emerging biopharma companies.

This trend signals a fundamental shift in the industry’s innovation model away from large R&D organizations toward focused teams that are often using lean and virtual or outsourced models for development.

To be sure, emerging biopharma companies are more likely than big pharma to focus on orphan indications and specialty markets with lower commercialization costs.

This trend also suggests that big pharma may need to reevaluate its portfolio allocation to business development and M&A efforts versus R&D.

A recent announcement by Eli Lilly that the former executive team from recently acquired Loxo Oncology will be assuming oncology R&D leadership overall for Lilly provides another example of innovative emerging biopharma contributing not just novel assets that may be acquired by big pharma, but also a source of potential talent for large pharma organizations seeking to reenergize their own innovation engines.

**Trend No. 2**
Increase in expedited approvals and self-commercialization

Emerging biopharma companies are increasingly commercializing products themselves, either solo or via a co-promotion, particularly in the US market. According to ZS analysis of the US drug approval market, expedited drug approvals are at an all-time high and the number of annual first launches of novel products increased from previous years to a high of 14 in 2018 and was followed by the second highest with 10 in 2019, after a five-year trend in the mid-single digits (see Figure 2 on page 54).

With a healthy pipeline of late-stage products in key therapeutic areas, such as oncology, combined with a robust ecosystem supporting investment and financing of commercialization, we expect this trend to continue.

A recent string of multibillion-dollar post-launch deals (including GlaxoSmithKline’s $5 billion acquisition of Tesaro, Lilly’s $8 billion purchase of Loxo Oncology, and Pfizer’s $10.6 billion acquisition of Array BioPharma in the last year) may further incentivize emerging biopharma company investors and executive teams to consider co-promotion or solo launches in the US, as well as raise the bar for pre-launch transactions.

Our analysis of publicly held novel first launches in the US oncology segment provides some useful insights into the costs of launching. We found that for these companies, selling, general and administrative (SG&A) expenses range from $19 million to $60 million for the year ending 12 months prior to launch and growing to $50 million to $176 million for the...
Trend No. 3
Expanded ‘first-launch’ options beyond the US

More emerging biopharma companies are considering commercializing themselves or co-promoting in markets outside the US, particularly in Europe, Japan, and China, often as a parallel-path commercialization option to out-licensing. The general feelings of not wanting to leave anything on the table and to maximize and retain value are pervasive.

With an increasing number of rare disease launches, even smaller organizations are often able to effectively commercialize across a broader set of markets. In Europe, for example, the majority of first launches have been in rare disease, and many of these have been by privately held companies. Of the 56 novel first launches that occurred in the US between 2011 and 2019, 86% were “go-it-alone” launches and 14% encompassed co-promotion launches, based on ZS analysis of a variety of sources, including company filings, EvaluatePharma data, and FDA approvals.

About half of those products (24) subsequently launched in Europe, and of those, 42% launched solo, 8% via co-promotion, and 50% were out-licensed to partners for commercialization in Europe.

When it comes to market opportunities in Asia, organizations large and small are increasingly focused on assessing their assets’ commercial potential and value, particularly in China. In Asia, nearly all emerging biopharma companies choose to partner, although we anticipate more companies will consider a parallel path that includes launching or co-promoting in these geographies. Launching in China or Japan requires deep knowledge of the market along with relationships with key reg-
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2019 was a landmark year for the Chinese healthcare industry. Since the publication of the ‘Healthy China 2030’ blueprint in 2016 by the Chinese government, the entire sector has been virtually turned upside down. Against the warm backdrop of regulatory support, a series of policy changes were unveiled in the intervening years with the intention of ameliorating the discovery, development and distribution of innovative and/or affordable medicines to patients in China. Be it accelerated drug approvals or quality evaluations of generics, contract manufacturing operations or telemedicine guidelines, there has been a flurry of regulatory activity over the past few years.

Given the turbulence within the market, however, it was not until 2019 when various policy initiatives were converted from pilot into national practice that industry stakeholders were reassured that the new state of affairs was here to stay. On 26 August 2019, the Chinese government passed amendments to the Drug Administration Law (DAL) to formalize a new regulatory framework reflecting the significant advances that have been made.

A new habitat for healthcare innovation has been established in China. In this complex and fast-moving environment, intense market pressures and fierce competition will ultimately drive all species of stakeholders to evolve – or face extinction. Already, different evolutionary strategies have emerged, whether they be forming strategic partnerships with local players, carving out a niche leveraging medical education, or developing a comprehensive arsenal of assets.
VARIATIONS ON THE THEME OF SUCCESS

With China overtaking Japan to become the second-largest healthcare market globally in 2016, most, if not all companies, now see China as highly strategic. The relevance of the market is a double-edge sword, however. Deloitte China Partner Mike Braun, who has been observing the industry for nearly two decades, outlines, “The Chinese market is now so big as a proportion of the global market — and indeed, in revenues and certainly growth share — for MNCs that it is affecting stock and share prices. CEOs and general managers have to manage their operations in China knowing that their results usually affect the global businesses in significant and visible ways. China is becoming a very important market for these companies to build another equity story.”

Despite popular misconceptions, he states, “in all its complexity, the China market is actually much better understood than other Asia-Pacific markets (like Japan, for instance). Our clients’ knowledge is absolutely first-class.” However, he cautions, “this does mean that the challenges that do exist are far more sophisticated and complex than they were before. We advise our clients that you need to have people on the ground that know the market well. If you rotate key executives or leaders every couple of years, you [lose] that market and institutional knowledge.”

Baxter Greater China Region Head Shirley Xu, who has been with the affiliate since she joined as a sales manager an extraordinary 26 years ago, clearly fits that profile. In her sixth year at the helm, she reflects, “Baxter is an extremely diversified healthcare company, offering not only pharmaceutical products but medical devices and services … delivering products and therapies from the ER to the OR, and from the pharmacy to the ICU, as well as advancing patients’ care in their homes. I have seen how the organization has been built from scratch … to become one of the most strategic clusters globally for Baxter.” A core tenet, she asserts, is that “Baxter has been one of the pioneering companies focused on localization. We have five manufacturing plants and the majority of our products sold locally are manufactured locally.”

Just as Rome was not built in a day, Xu underscores, “across the past three decades, we have built an extremely solid foundation that positions Baxter as a trusted partner within China’s healthcare ecosystem. Trust is developed not from what you say but what you do.” From her vantage point, she is gratified to have witnessed not only the development of Baxter China but also the overall industry. She exhales, “being able to grow with an organization over a long period is a beautiful opportunity. But behind these commercial numbers are the patients that have benefited from our products and services. The healthcare infrastructure and
treatment options nearly three decades ago were truly at a nascent stage, but today, advanced treatment options and therapies are available to Chinese patients.”

Success in China can come in many forms. Amongst the freshest additions to the Chinese pharma industry is Takayuki Yamada, who joined Santen China in April 2019 after stints in Europe and Japan, and officially took up the mantle of GM in September that year. However, this is no disadvantage. He muses, “I see opportunities to leverage my understanding of European markets in China. The overall regulatory regime in China is completely different from Europe [but in terms of] healthcare budget management, China is actually very similar. The European Medicines Authority (EMA) oversees drug approvals [but] pricing and reimbursement differ based on the national processes and regulations of the EU member countries. Similarly, in China, different provinces have their own pricing and reimbursement systems, which companies have to navigate.” Furthermore, while reforms are ongoing, he pinpoints, “in certain aspects like Health Technology Assessment (HTA), health expenditure management [as well as] industry functions like medical affairs, China is still catching up to Europe.”

Having been present within the ophthalmology market in China for 13 years, jostling for first place against Swiss pharma giant Novartis, Santen’s Chinese affiliate already ranks second for the global group in terms of revenues. However, Yamada has his sights set on an even greater achievement: “our ambition is to position Santen China as the largest affiliate, surpassing even the Japanese market.”

Yamada explains, “to achieve this, we need to expand our presence here while evolving [our] organizational capabilities,” which is why Santen established a joint venture (JV) with local player Chongqing Kerui in 2016, one of only a handful of MNCs to do so. “Santen’s presence in China is mainly focused on top-tier hospitals in larger cities. However, the hospital network extends to community hospitals and
clinics serving the grassroots population, especially in more rural areas, where affordability is a critical part of the equation. Through this JV, we are building a new manufacturing facility, which will maintain our quality standards while producing products catering to the specific needs of this market segment. It is important to find a good balance between quality and price.”

Regardless of their tenure, successful GMs are those that quickly appreciate – and relish – the need for speed in China. White Wang, Allergan China’s GM, was by no means new to the industry when he joined the affiliate in September 2018, having previously worked at AstraZeneca and Novartis. However, with its focus on medical aesthetics, Allergan is a different kettle of fish compared to traditional pharmacos. Wang reiterates, “Allergan is truly a very unique company: at once a pharma company, a medical device company, a cosmetics/aesthetics company and a digital company – there is no other company in the industry sitting at the convergence of all these areas, leveraging so many business models and talents. As a result, Allergan is a fast-moving, bold and innovative company that dares to make hard decisions.”

In just his first year with the company, Wang laughs, “so much has been achieved, from new product launches and reimbursement negotiations to the launches of our Allergan Innovation Center and Customer Experience Center in Chengdu, Sichuan Province to the establishment of our digital team [that] we have actually come up with a phrase ‘the Allergan year’, which equates to four or five years in other companies!” There is no doubt he speaks for most players within the industry when he rationalizes, “China is such a dynamic market and there are so many opportunities here – we do not want to miss anything.”

THE IMPORTANCE OF MEDICAL EDUCATION

With 1.4 billion people spread across 31 province-level entities, and a complicated healthcare system with different layers of administration between national, provincial and hospital levels, it is not always easy to see the method in the madness. This explains why, for a long time, China’s healthcare market was aggressively sales-driven, with complex supply chains directing the flow of drugs from manufacturer to patient. Tellingly, sales and marketing costs occupy around 30 to 40 percent of overall industry sales in China, compared to only 10 percent in the US. Even the large distributors find it difficult to navigate, with the combined market share of mainland China’s three largest drug distributors only reaching a paltry 34 percent in 2018 compared to 90 percent in the US and 70 percent in Japan. As part of the drive to trim the fat within the system, however, the government has launched the ‘two-invoice’ system to eliminate all but one of the layers between drug manufacturers and hospitals.

Based on his extensive experience in China helming both Big Pharma affiliates like AstraZeneca and start-ups (his first start-up, NovaMed Pharmaceuticals, was acquired by SciClone Pharmaceuticals in 2011), Nuance Biotech CEO Mark Lotter summarizes, “the biggest challenge for pharma companies in China is to achieve the right commercial footprint across China. Even top MNCs like AstraZeneca, with 16,000 employees, do not manage to cover the entire market of 1.4 billion people. Local companies have traditionally
used sales agents and distributors to commercialise and distribute their products [but] the challenge the traditional agent model faces is compliance – which, as you can imagine, is a significant concern for MNCs. There is nothing available on the China market which ensures both the education- and compliance-based approaches as required by MNC companies.”

Therefore, despite having retired in 2012, he could not resist jumping back into the fray to establish Nuance Biotech in 2015. Conceptualized as a “platform for innovation”, one of the key pillars of the company is their commercial infrastructure. In the short term, he explains, “we look to capture revenue that already exists in China – i.e. products already approved and on the market. Nuance has built a leading commercial and market access team designed to cover the leading cities and hospitals across China.” More remarkably, “we have launched a novel and first-in-class Open Commercial Platform to provide companies with the ability to select, educate and most importantly, perform quality control on third-party promotion. This required significant technology advances, building in the relevant compliance controls whilst ensuring MNC-like commercialisation of brands, the core focus being that of academic promotion, both at the disease and brand levels.”

The need for – and value of – medical education increases markedly when it comes to innovative products. As China welcomes more novel medicines, the focus on compliant and effective academic promotion will only intensify. This plays to the strengths of Swiss cancer supportive care leader Helsinn Pharmaceuticals, whose first product, palonosetron IV, for Chemotherapy-Induced Nausea and Vomiting (CINV), was approved in November 2018. Given the competitiveness of the China market – and in particular, the cancer market in China – GM Enrico Magnani rhetorizes, “The question is how a company like Helsinn can play in such a hot market where the top global players as well as strong local companies are both present,” answering, “[within the] chemotherapy, we can differentiate ourselves through both the innovation and quality of our products and through the services we can offer around our products, including medical education, which is a core competence of Helsinn.”

For instance, he illustrates, “one of the first positions we filled in China was the Head of Medical Affairs so we could start transferring the global product knowledge to our local operations and our partner. We have [also] started to work with CJ Wang, CEO, Frontier Biotech

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With the spate of multinationals unveiling mega-investments in China, in 2018, Allergan made headlines when it launched two innovative and global ‘first’ initiatives in China: the Allergan Innovation Center and the Consumer Experience Center, both in Chengdu. VP and Head of International Medical Aesthetics Gerry Muhle contextualizes, “[In China] the medical aesthetics consumer segment has been growing significantly over the past few years and will continue to grow. Consumers are not only interested in medical aesthetics but increasingly also have the purchasing power. However, they are not really clear about what medical aesthetics really is, and they might not even know how to find the information they need. As a leader within the field of medical aesthetics, we think it is our responsibility to educate these consumers. This is why we have launched initiatives like our Allergan Beauty Lab in China as well as our digital partnership with Ali Health.

China GM White Wang underscores, “we have invested in these initiatives to address genuine and significant pain points within the Chinese industry. They are not just some publicity stunt.” For instance, he explains, “there is a serious shortage of medical aesthetics doctors in China, which is why we built our innovation center. The goal is to train 3,000 new doctors each year. We [even] worked to receive a hospital license for this center so that we could provide truly best-in-class doctor training.”

SVP Asia Pacific, Middle East and Africa (APACMEA) Jason Smith supplements, “the [Allergan Beauty Lab] is not a commercial initiative. [It] is meant to provide information and educate consumers. One of the tools is an app which consumers can use to scan the QR codes on their products to check if they are genuine. This is something we worked on in collaboration with government agencies in China because of the prevalence of counterfeit beauty products.” Ultimately, he asserts, “if we can increase consumer awareness and grow the overall market, we will ultimately benefit from it – as the leading player in medical aesthetics. We have confidence in ourselves and our products.”

Smith reminisces on his initial discussions with the China leadership team. “When I heard first [the term] ‘medical aesthetics hospitals’, I said, you must mean clinics, but when I came to China, I realized that they were actually fully-fledged hospitals!” He enthuses, “looking at the speed, innovation and experimentation occurring within the medical aesthetics market, as well as the ambitions of some of the medical aesthetics hospitals here, there is so much to take away for other markets.”

With recent healthcare reforms focusing on critical areas like oncology and rare diseases, Wang argues, “from an urgency perspective, areas like oncology need to be fast-tracked. However, we need to acknowledge the strong unmet medical needs in medical aesthetics. Consumers want access to these products. If they are not available, many consumers resort to accessing unapproved products from other countries. This poses a huge risk to them.”

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the Chinese Society of Clinical Oncology (CSCO) to provide support and training for young and talented oncologists.”

Chairman Hans Schmid supplements, “Another important collaboration is our work with the CEO Roundtable on Cancer, a global organization [progressing] towards the elimination of cancer through various initiatives, including the promotion of a healthy work environment within companies. The workplace wellness it promotes is very much in line with the Healthy China 2030 plan.” In 2014, Helsinn became one of three global founding companies to support this initiative and adopt a tobacco-free workplace in China. He adds, “most recently, we supported an event in Shanghai to celebrate ‘70 Years of Cancer Care in China’. It gathered representatives from government, medical, industry and public sectors to review the progress in cancer treatment over the last 70 years in China and looked at what the future might hold for oncology prevention and control.”

Medical education is not only the domain of established pharma players, it can also be the secret weapon that helps biotechs outsmart Big Pharma goliaths. Nanjing-based Frontier Biotechnologies is one of the few Chinese biotechs to have successfully advanced from molecule to market, with their flagship drug, Aikening®, being the first innovative HIV drug developed by a Chinese company.

Despite significant public awareness efforts globally, HIV/AIDs remain a highly stigmatized disease, particularly in China, while disease prevalence has been rising in recent years. CEO Dr CJ Wang laments, “the official numbers are around 1.25 million but the true figure could be higher. Each year, around 100,000 new HIV cases are discovered in China, and in 2018, the figure was actually closer to 150,000. What is even more alarming is that nearly half of newly discovered infections are late-stage patients with comorbidities that need to be hospitalized.”

Wang proclaims, “Aikening® is the first long-acting HIV fusion inhibitor, effective against most-HIV-1 strains, including drug-resistant strains, with a good safety profile and no predictable drug-drug interactions.” Testament to the drug’s value, “within two months of product launch, Aikening® was..."
added into the Chinese HIV Treatment Guidelines. Since it is the first long-acting injectable HIV drug on the China market, we are working within a virgin market. We need to explain the benefits of our novel drug very well. Therefore, we have built a professional marketing and sales team to provide medical education and training to physicians.”

This is especially important, Wang explains, because “patients with serious conditions such as comorbidities, drug resistance, surgery, impaired kidney and liver functions need fast-acting, efficacious and very safe injectables. In addition, our drug is believed to be quite suitable for post-exposure prophylaxis (PEP). In terms of mechanism of action and speed of onset, Aikening® would be beneficial for at-risk populations.”

A PORTFOLIO STRATEGY

The head of the Greater China Healthcare practice and coleader of the Asia Healthcare practice at McKinsey, Franck Le Deu, has termed the biotech boom ‘Chinese Biopharma’s Cambrian Explosion’. One of its most distinctive characteristics is Chinese biotechs’ marked preference for strength in numbers when it comes to portfolio composition, compared to their US counterparts’ aversion to owning multiple assets.

Sinovant Sciences is one notable case study. Established in 2018, it is backed by US biotech investment outfit Roivant Sciences as well as CITICPE, a large China private equity (PE) fund. CEO Dr Rae Yuan, a 20+-year industry veteran that formerly oversaw the Chinese R&D arms of Roche and Novartis, introduces, “Sinovant Sciences was established to be a bridge between global innovative research and patients’ needs in China. We are a “transformer” organization: we pick the right molecule to develop in the right way so that it can become a drug for the right patients at the right dose.”

However, she cautions that “R&D is unpredictable. For a company to be successful, it needs to have a portfolio strategy… otherwise a single molecule carries the entire burden of the company’s success!”

She considers, “this is also important from a competition point of view. When Sinovant started in 2018, it was clear that the oncology space was already very crowded. We deliberately made the choice to develop a portfolio to balance the risks, opportunities, and the chances of success.” With 13 assets in development across eight therapeutic areas, including oncology but also infectious diseases, urology and dermatology, Sinovant undoubtedly has one of the most diversified biotech portfolios in the country.

Another Chinese biotech that has opted to build a polymathic portfolio, albeit more painstakingly through inhouse development is CGeneTech, which CEO and cofounder Dr John Yu established in 2006. Their portfolio currently includes their flagship DPP-4 inhibitor diabetes drug, CGT-8012; a pre-clinical drug candidate for cataracts, CGT-1507; a generic version of the multiple sclerosis (MS) drug, teriflunomide; as well as a lyophilization technology for immediate release (Lyrir) tablet ODT platform. He exhorts, “I always tell my team, the first priority is survival. If we die, there is no story! Today, the average cost of taking an innovative drug to market is USD 2.6 billion. Raising money can be very difficult. This is why even as we are developing our DPP-4 drug, we are also working on other projects to generate revenues.”

What unites these diverse projects is the ultimate purpose. Yu stresses, “we are focused on unmet medical needs. This is why we started to develop our MS drug. At the moment, there is only one MS drug available on the market and it is priced at USD 1,900 a month, which is very expensive. Fortunately, in May 2018, the Chinese government announced that this drug could be listed as an orphan drug, which means an accelerated
regulatory approval pathway. We would just need to conduct a bio-equivalence (BE) study. We anticipate launching this MS drug in 2020, and it will be our first drug on the market!”

Turning the concept of ‘portfolio strategy’ on its head is Viva Biotech. A fascinating hybrid company, it was initially founded in 2008 by Chairman and CEO Dr Cheney Mao as a highly specialized CRO with a core focus on structure-based drug discovery (SBDD). In 2016, the company decided to embark on a new business model: incubating biotech start-ups from Day 1. Mao outlines, “this launched our ‘equity-for-service’ model to complement our existing ‘fee-for-service’ CRO model. From our CRO success, we have built a strong financial buffer and robust cashflow to fund our ‘equity-for-service’ and cash investment model. We are mentoring and supporting these companies from the very beginning of their journey, when they are in desperate need of investment and resources. We try to be a one-stop resource center for these types of projects and add value as an investor.”

ANTI-PD-1/PD-L1 ... OR ANTI-ANTI-PD-1/PD-L1?

Meanwhile, other biotechs choose to diverge from the pack and focus on carving out their niche within one of the most crowded innovation spaces in China today: the anti-PD-1/PD-L1 checkpoint inhibitors. With already five PD-1/PD-L1 drugs available on the Chinese market (including global blockbusters Opdivo and Keytruda), and many more queuing impatiently in the development and regulatory pathways, many industry insiders are starting to question the commercial case for developing yet another PD-1/PD-L1 checkpoint inhibitor. Even looking at oncology more generally, the bandwagon seems full.

While the logical conclusion might be to avoid the PD-1/PD-L1 space altogether, Maxinovel CEO Dr Yuguang Wang takes an audacious view: “this is the Olympics in drug discovery. We need to participate – and win. Our R&D strategy is to focus on disruptive innovation in the most important field – oncology – with a research theory that is different from the crowd.” While acknowledging that “the industry has crowded around antibody discovery”, he insists, “To me, being disruptive means we cannot follow the herd in doing anti-PD-1/PD-L1 antibodies. We must find the problem and then look at the problem through a different angle.”

As an example, he hints, “for PD-1/PD-L1 antibody drugs, the major problem is the low monotherapy treatment response rate. The current reasoning is that PD-L1 expression is low [but] we think that there must be more reasons for the observed low response rate.” Based on that, they have developed...
a next-generation PD-1/L1 inhibitor that is effective on both PD-L1-high and PD-L1-low tumors. He exults “in 2019 AACR, we reported that our clinical candidate, MAX-1, has similar efficacy in PD-L1-high humanized model as Imfinzi. In the 2020 AACR in San Diego, we will present our finding [that] we have successfully discovered a clinical candidate with superior efficacy over Keytruda in a PD-L1-low humanized model.”

Another biotech focused on oncology, Ascentage, has eschewed the fashion of checkpoint inhibitors to stay true to its selected area of protein-protein interactions (PPIs), specifically apoptosis pathways, for the past decade. CEO Dr Dajun Yang admits, “over the past ten years, many new technologies like cell therapies and checkpoint inhibitors like PD-1/PD-L1s have emerged. But we continue to believe that apoptosis is a very key area. Biologically, apoptosis is a very important regulatory pathway for cancer [though] it is very difficult to develop molecules targeting this pathway. [M] any companies have tried and failed.” The silver lining, he suggests, is that “the playing field is not as crowded, which means it is easier to differentiate and position ourselves” – and indeed they have, with six molecules already in clinical trials in the US, and all new targets and new molecular entities. Yang posits, “in terms of the productivity and novelty of our pipeline, I dare-say we are comparable to much larger-sized biotech companies and probably even the oncology divisions of some Big Pharma MNCs.” With their recent well-received USD 53 million IPO on the Hong Kong Stock Exchange (HKEX), Ascentage’s development strategy has clearly been validated.

Also not shying away from the oncology challenge is Laekna Therapeutics, which draws its unique name from the Old Norse word meaning ‘to cure, to heal’. CEO Chris Lu laughs, “we chose to focus on oncology because it is quite a mature area, particularly in terms of clinical development and regulatory processes.” While this might mean contending with hundreds of other biotechs, the pros outweigh the cons: he highlights, “for instance, the US FDA offers many incentives for oncology drug development, such as fast track, priority review and Breakthrough Therapy Designation. Therefore, it is relatively easier to design the clinical path for oncology assets.”

They have already in-licensed three assets – an oral androgen inhibitor and two pan-Akt kinase inhibitors – from Novartis initially for prostate cancer (one of the deals also saw Novartis take a strategic equity stake in Laekna). However, they are not simply taking the easy route and relying on Novartis’ clinical data. Lu emphasizes, “we demonstrate innovation more through our clinical development strategy. For instance, we have initiated three trials, and only one was built on Novartis’ old POC trial. The other two are new designs with new indications derived from our internal exploratory studies.” The cherry on top, he continues, is that “new data has emerged that Akt kinase inhibitors could partner with androgen inhibitors in combination therapy. Therefore, we plan to combine both assets to treat late-stage prostate cancer when patients become resistant to androgen-inhibitor therapies.”

TECH’TONIC SHIFTS IN HEALTHCARE

The influence of the Chinese tech giants of Baidu (China’s Google equivalent), Alibaba (Chinese Amazon) and Tencent (Chinese Facebook), or BAT, has utterly pervaded Chinese
society. It is estimated that taken together, BAT controls or backs over 50 percent of the 124 ‘unicorns’ – privately held startup companies valued at over USD one billion – that exist in China. Now they, along with many other large conglomerates, are looking to stake their claim on the healthcare sector in the hopes of reaping rich rewards. With many strategic collaborations having been established between tech giants and pharmcos in China, and the incursion of many tech and finance executives into the thriving healthcare industry in China, there are certainly exciting times ahead and chances are high that the global market will soon be able to harvest the fruits of such partnerships.

McKinsey China Partner Jin Wang has been following the Chinese healthcare industry for over a decade. She explains, “in many other countries, the players are much more focused and specialized, whereas in China, the healthcare ecosystem is vast and dynamic. The work I do with McKinsey China revolves around this concept of ‘大健康’ (which loosely translates to ‘broad healthcare’), referring to the entire healthcare ecosystem and the players present within, from payers to providers, pharmcos, device and technology companies, digital and financial conglomerates, and so on.” When it comes to the role of tech companies, she marvels, “what is exciting is that they are entering many parts of the value chain, from primary care, Internet health, hospitals, health technology, pharmaceutical innovation, and so on, bringing with them capital, technology and expertise. Many are pushing the idea of trying to reinvent healthcare, and they have a very different conception and skillset (especially in managing large-scale businesses and organizations) compared to traditional healthcare companies.”

Ping An is an extremely indicative example. Having started 31 years ago, it has since grown into the largest Chinese insurance company in terms of market capitalization as well as one of the top five financial institutions globally. In recent years, it has looked to muscle in on the healthcare sector with a series of prescient investments including, most famously, Ping An Good Doctor, which listed on HKEX in 2018 and is today the world’s largest online healthcare platform, conducting over 656,000 online consultations daily. Part of their healthcare ecosystem includes Ping An Smart Healthcare, which falls under the Ping An Smart City subsidiary, and GM Geoff Kau summarizes, “Ping An Smart Healthcare is
our way to deliver technology solutions across the entire value chain – prevention, diagnosis, treatment and management – to increase care quality and efficiency,” adding, “on the most macro level, the healthcare problem in China, as in most developing countries, is the gap between supply and demand. Our ambition is to use technology to expand the capacity of the healthcare system to serve patient needs. The aim is to enable [healthcare practitioners].”

Ping An Smart Healthcare’s solutions have already been deployed across more than 70 cities in China.” Kau shares just one exciting initiative: “using various AI technologies to ‘digest’ over 28 million medical journals, over 20,000 clinical guidelines, over 270,000 clinical trial results and so on, we have developed a virtual medical expert [program] called ‘AskBob’. We have also incorporated this capability into tools that integrate into the electronic medical record (EMR) system to bring together all relevant data from point-of-care to lab results to doctor prescriptions. This enables us not only to recommend tests and treatments but also to retroactively evaluate the actual diagnosis and treatment process [in line with] clinical guidelines.” Given that around 40 percent of China’s population still live in rural areas, he stresses, “this is particularly useful. Quality of care and available resources might be lower in lower-tier hospitals,” adding that less than 20 percent of doctors in lower-tier hospitals have undergraduate degrees.

Even conservative Big Pharma cannot resist the glittering promise of technology. Sanofi is perhaps one of the biggest proponents of technology within the industry globally, and Country Chair Pius Hornstein is keen to bring this mentality to China. He contextualizes, “In 2019, Sanofi nominated a Chief Digital Officer [with] a medical background. When I was in Brazil, I created a digital structure for the affiliate separate from Europe – as the first affiliate to do so – and since arriving in China, I did the same. We will have our own dedicated digital structure focusing on topics like innovation, data analytics, go-to-market models, multichannel models and so on. China is the place to do it because you have scale, speed and expertise, adding, “we want to make China the third big pole for digital innovation within Sanofi. I hope that in 24 or 36 months, Sanofi China will be recognized as the number one pharma company in the digital space in healthcare in China [with] tangible indicators of success, including patient outcomes, revenue and profit models.”

INVESTING IN PRECISION MEDICINE

Stunning advancements have been made in medical technology over the past decades and many in the industry have pinned their hopes on precision medicine as the next wave to revolutionize healthcare as we know it. Ever since the 2016 launch of the 15-year, USD nine billion-China Precision Medicine Initiative, the country has aspired to become a global leader in this field, notably by capitalizing on its growing Big Data and AI capabilities. As a result, China has become fertile ground for cell and gene therapies as well as the technology behind this new wave of therapeutics.
Addressing Genuine Unmet Needs in Cancer

While oncology is an extremely hot research area, not all cancers receive the same amount of attention and investment. This is why Asieris, a biotech founded in 2010, decided to focus on genitourinary (GU) tumors and related diseases rather than prostate, lung or breast cancers. While they stumbled on their first product – for non-muscle-invasive bladder cancer (NMIBC) – by accident, the expertise they gained from developing it made them realize that urology and women’s health are overlooked areas with significant unmet needs. In particular, CEO Kevin Pan notes, “while many biotechs focus on cancer, they tend to focus on late-stage metastatic cancers. In the GU area, cancers are typically diagnosed at earlier stages, so patients need safer and friendlier drugs compared to the potent but highly toxic drugs used to treat late-stage cancers.”

Beijing-based start-up EdiGene was established in 2015 to exploit the versatility of gene-editing to the fullest, or as CEO Dong Wei introduces, “[build] a strong foundation for the application and development of genome editing technologies as both therapeutics and tools. There are many directions you can pursue with such a revolutionary technology” but in 2017, the company decided they needed to concentrate on a few promising projects. Therefore, Wei came on board in 2018 to help take them into the clinic.

With regard to NMIBC, he laments, “this area has not seen new drug approvals globally for 20 years. The current standard of care is intravesically-instilled chemotherapy or Bacillus Calmette-Guerin (BCG), which is an invasive, painful and inconvenient procedure, carrying risks of bleeding, pain and infection. Efficacy is also poor,” continuing excitedly, “APL-1202, currently in Phase III trial in China and Phase Ib in the US, would be the first oral drug for this indication and it also has a novel mechanism of action.” Ultimately, he concludes, “biotech research needs diversity. There is no single ‘correct’ biotech model. We have a strategy focused on developing highly-innovative and proprietary novel compounds in GU diseases.”

Laekna Therapeutics is a clinical-stage biotech company dedicated to innovative drug development and discovery. With our focus on science, Laekna strives to discover breakthrough medicines to fight diseases and improve quality of life.

Targeting high unmet medical needs globally, we are currently developing 3 oncology clinical assets with our lead candidate at the Phase II stage.

Laekna welcomes experienced partners who are interested in investing in or collaborating with us.

LEADING CHINESE TECH GIANTS HAVE ALL SET HIGH ASPIRATIONS IN HEALTHCARE

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¹For example, on academic forum
²For example, clinical-decision support systems

Source: National Medical Products Administration; press search; McKinsey analysis.
EdiGene’s first program is an autologous hematopoietic stem cell transplant (HSCT) therapy developed for patients with beta thalassemia, an inherited blood disorder. Wei explains, “the standard of care in the US and EU consists of regular blood transfusions every couple of weeks. These infusion treatments may lead to an iron overload in patients, so patients require very close monitoring via regular MRI assessments, and iron chelation therapy to avoid organ failure. However, access to healthcare facilities is a big issue. This is why it is key to develop a one-time cure.”

Beyond therapeutics, EdiGene also wants to leverage their various proprietary technology platforms to “help MNCs solve their complex programs and optimize target therapies,” and ultimately, Wei envisions, “in the longer-term, we aspire to become one of the top companies for genome editing with the capabilities to save the lives of patients globally.”

Leaders in next-generation sequencing (NGS) Illumina also prefers to see the technology as a platform for collaboration and ‘to unlock the power of the genome to improve human health’, according to their slogan. GM Qing Li shares, “of all the healthcare technology companies I have worked for [including GE Healthcare], only Illumina truly has an open-source platform mindset. We work extensively with partners to share our technology so that our partners can develop new applications and products.” Illumina currently works with around 20 partners in China in areas like non-invasive pre-natal testing (NIPT) and clinical research.

Li opines, “Even as NGS technology is becoming more prevalent, I believe the industry is still working within a very small part of the entire accessible market. There are a host of potential applications and services and I think we are only scratching the surface of what could be achieved with NGS. We believe having more players and a vibrant playing field will drive a high-tide market.” The strategy that Illumina follows, based on what they term ‘competitive partnerships’, he emphasizes, “is a very smart and inclusive strategy. It allows our technology to permeate the entire market and supports our growth while simultaneously building the capabilities of the overall industry. [This] build a productive ecosystem in China [which] allows us to capitalize on the fullest potential of the market.”

With the rapid pace of technological change, constant reinvention is important, and even established players cannot rest on their laurels. Having joined the medical imaging industry in China in 1984, Canon Medical Systems China President Shin Matsuoka agrees, “I have personally undertaken all the key functions, including sales, marketing, after-sales service and maintenance, obtaining an intimate and firsthand knowledge of this industry. We must [always] pay close attention to the trends and developments within the global medical imaging industry as well as the strategic and policy direction of Chinese healthcare regulatory reforms,” underlining, “healthcare practitioners in China now demand more when it comes to precision medicine and personalized medicine.”

However, he warns, “to achieve personalized diagnosis during the running of high-throughput tests is rather challenging.” AI is now considered the key to solving this challenge, and for this reason, he adds, “Canon has always invested significantly into AI. According to independent data, Canon actually ranks in the top ten globally when it comes to the number of AI patents, and specifically within the area of large-scale medical equipment, we rank number one.”

He cites the example of their recently launched CT machine, the Genesis Trailblazer Ai640, which has the industry’s first complete AI assistant to cover scanning, reconstruction, pre-processing and post-processing diagnostics. He elaborates, “the “Pioneer Ai640” solution not only
makes the imaging equipment ‘smarter’, but also makes the operation simpler and safer. It implements a series of precise inspection solutions such as AI-aware scanning, AI flexible registration, and AI flexible subtraction. These will provide more accurate and more quantitative data, helping imaging specialists to perform early screening, early qualitative and quantitative assessments to help achieve accurate diagnosis and treatment.” Not only that, other newly launched CT and MRI machines will all incorporate their AI technology. Matsuoka proclaims, “we will bring a new generation of AI medical equipment to the China market.”

A NEW DECADE

With the rationalization of the Chinese healthcare market in recent years, innovative players have an historically unrivalled latitude to operate within the vast and underdeveloped landscape. While opportunities are plentiful and there is ample room for a multitude of different business and partnership models to co-exist, competition is fierce. But as Illumina’s Li opines, “competition is positive for our consumers, healthcare providers and ultimately patients. It pushes all of us to improve, both on the technology and the commercial sides.”

2019 made it clear that the Chinese government is serious about the importance of the healthcare industry. Through its reforms, the Chinese government is not only seeking to rationalize the country’s healthcare system in line with international standards and norms, it is also using the country’s massive market potential as leverage to ensure players fall in line behind its ultimate objective: delivering affordable, accessible and better healthcare to its people.

“At the same time, most players within the global industry are sitting up and taking notice of these positive developments. Both foreign and local companies are stepping up their game, be it doubling down on investments in clinical and manufacturing facilities, driving forward new projects in innovative drug discovery and development or even entering the market for the first time. Regardless, there is no one-size-fits-all playbook: companies have to decide for themselves how best to navigate this new playing field.”

All eyes are on what the new decade in China might bring – and who the winners might be.
With few exceptions, emerging biopharma firms haven’t begun launching on their own in Asia, but they’re increasingly bringing their assets to these key global markets by partnering with regional or global manufacturers earlier in development. The partnership between Five Prime Therapeutics and Shanghai-based Zai Lab is one example of two companies teaming up early to support both the development and launch of a product in China. The alliance focuses on Five Prime treatment candidate bemarituzumab (FPA144), a targeted immunotherapy for tumors over-expressing FGFR2b, including in gastric cancer, where there is a high incidence rate in Asia. This alliance, in which Zai will manage Phase III trials for bemarituzumab in China and eventually commercialize there, increases Five Prime’s chances of global success.

**The new normal**
Emerging biopharma companies account for an increasing share of innovation in the industry and have shown that they are willing to launch independently or in co-promotion. While established pharma companies may have infrastructure in place to leverage for the launch of a new product, emerging biopharmas preparing for a first launch must build their program from the ground up. Launch go-to-market strategy and planning work often begins in earnest 21 to 27 months pre-launch (often six to 12 months prior to confirmatory trial results) and involves many inter-related work streams, from strategy and planning to organization build for headquarters and field teams, including sales and marketing and operations, insights and analytics, market access and medical, and data and technology, among others. Strong leadership and launch experience, particularly in the emerging biopharma context, are critical to building a strong capability and ensuring longevity in this segment of the industry.
A
fter three and a half years of volatile discussions and debates around Brexit, the UK is finally set to leave the European Union, 10 months after the originally mooted date of March 29, 2019. Prime Minister Boris Johnson’s decisive win at the polls in December (on the back of a simplified “Get Brexit Done” manifesto) put paid to the long-standing efforts of political rivals and pressure groups to further delay the Brexit process (or indeed to cancel it altogether). Johnson’s Conservative Party now sits in Parliament with an 80-seat majority, clearing the way for the new leave date of Jan. 31.

While UK pharma has been generally resistant to Brexit, the Conservatives’ pro-industry election pledges were broadly welcomed. The Tories have promised to increase public research spending to 2.4% of GDP; continue to collaborate with the EU on scientific research; invest £3 billion into a National Skills Fund; and make the UK “the leading global hub for life sciences.” They have also pledged to revamp the Cancer Drugs Fund as the Innovative Medicines Fund—setting aside £500 million of the medicines budget to give patients quicker access to cutting-edge medicines for cancer, rare diseases, and autoimmune diseases—and establish a “Dementia Moonshot,” doubling the existing levels of dementia research funding and increasing the number of researchers in innovative techniques, such as advanced therapeutics and neuro-technologies.

Mike Thompson, chief executive of the Association of the British Pharmaceutical Industry (ABPI), praised the manifesto for putting forward “an ambitious agenda to strengthen our position and make sure NHS patients can get breakthrough medicines faster.”

What did not feature in the Tory manifesto, however, was drug pricing, and this subject caused a mini-storm in the run-up to the election when Labour Party leader Jeremy Corbyn sensationally announced to the press that he’d received 451 pages of leaked, unredacted minutes relating to official UK-US trade talks, which showed that the NHS would be “up for sale” in any post-Brexit trade deal between the two countries.

Closer examination of the documents revealed that most of the issues covered in the trade talks (which took place over a two-year period between July 2017 and July 2019) did not relate to healthcare, but they did point to US negotiators “pushing hard” for longer patent periods for US-produced drugs and angling for “full market access” for their drugs at “market-derived” or “competitive” prices.

The Guardian pulled no punches in reporting that “US pharmaceutical interests want the British government to dismantle the safeguards that protect the NHS from paying high prices for drugs.” It added that full market access for US drugs would “greatly limit” the ability of the National Institute for Health and Care Excellence (NICE) to decide “which medicines patients can receive” and lead to the organization “being marginalized.” Johnson and his team responded by strenuously denying that the NHS would ever be “on the table.” Even President Trump tried to assuage concerns by saying, in his incomparable way, that the US wouldn’t be interested in buying the NHS if “it was handed to us on a silver platter.”

Johnson and his team responded by strenuously denying that the NHS would ever be “on the table”

The trade-deal controversy seemed to blow over, in the mainstream media at least, in a couple of days. This might be quite remarkable at any other time, but such was the unpredictable and unprecedented nature of British politics in 2019. Since the election, however, Johnson seems to be sticking to his healthcare and pharma promises. The government has proposed enshrining in law a commitment to boost spending on NHS, which has gone some way to soothing concerns about opening it up to the US market. The government has also announced plans to fast-track new drugs, adopting a “streamlined, internationally competitive” process for drug approval.

These are early days, of course. Upon leaving the EU at the end of January, the UK enters a “transition period” that sees its existing relationship with the bloc continue until Dec. 31, 2020. This promises to be another intense period of negotiation, with healthcare never far from the top of the agenda.
LET’S GO BEYOND THE PAGES

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