

# the *Pulse*

The Magazine for the Wharton Health Care Business Conference | February 2016



Dr. Adam Koppel  
(EVP of Corporate Development  
& Strategy and the Chief Strategy  
Officer of Biogen) on the current  
state and future of biopharma  
**page 23**

Post-acute care in the post  
health care reform era with  
Ben Breier (CEO of Kindred  
Healthcare)  
**page 17**

Understanding technology's  
impact on health care business  
models with Dr. John Glaser  
(SVP, Cerner Corporation; Ex-CEO,  
Siemens Health Services)  
**page 38**

Charlene Frizzera (former Acting  
Administrator of CMS) discusses  
the mind of Medicare  
**page 46**





# Table of Contents

4 Letter from the Editors

## Provider Shifts

7 Medicare's CJR Bundled Payment Program: The Beginning of Wholesale Change in Providerland  
*An interview with Dr. David Friend*

12 Exploring Innovation in Primary Care  
*An interview with Tony Coletta*

17 Post-Acute Care in the Post Health Care Reform Era: Increasing Relevance, Responsibility and Risk  
*An interview with Benjamin Breier*

## Biopharma Trends and Financing

23 Drug Pricing: An Industry Perspective  
*An interview with Adam M. Koppel, M.D., Ph.D*

26 Investing in Biotech in 2016  
*An interview with Karl Zachar*

## Health Care Technology Innovations

32 Expanding Access to Mental Health Treatment Through Technology  
*An interview with Alejandro Fong and Richard Gengler*

38 Changing Business Models in Health Technology:  
*An interview with Dr. John Glaser*

42 Building a Community of Health Care Entrepreneurs  
*An interview with Blueprint Health*

## Spotlight: U.S. and China

46 Innovation and New Models for America's Largest Payor  
*An interview with Charlene Fizzera*

53 Future of Imaging Diagnostic Center in China  
*An interview with Lu Bei Hong*

## Wharton's Healthcare Management Program

59 Wharton Health Care Management Program Overview

69 Wharton Health Care Management Student Organizations



# Letter from the Editors

Year after year we find ourselves reflecting on how the health care landscape is constantly changing - indeed, change seems to be the only constant. The year 2015 was no exception, marked by fierce pharmaceutical pricing controversies (Sovaldi/Harvoni and Daraprim being the most publicized examples), an explosion in the adoption of digital health platforms and mobile apps to further engage patients, and a persistent trend toward consolidation among the major players across the industry. More than ever, hospitals, providers, entrepreneurs, and market leaders are innovating to bend the cost curve and universally improve health care delivery. Investors are taking note - this past year saw increased investment in innovation from experienced health care parties and neophytes, culminating in \$4.5 billion in venture funding in 2015. Increasingly, we see change enacted not only by the titans of industry, but also by small and ambitious new players. Naturally we find ourselves wondering: In 2016, who will win the innovation race, entrants or incumbents?

Regardless of the ultimate “winner,” competition fosters innovation, and we are all working toward a common goal. The Wharton health care community is thrilled and honored to take part in these exciting changes. This year, **Pulse** reached out to industry leaders to discuss the major challenges faced by entering and established firms alike. Across the spectrum of healthcare, from new care delivery models, to biotech/pharma, to digital health, this year’s **Pulse** discussion highlights the challenges and opportunities ahead for 2016 and beyond.

The 22nd annual Wharton Health Care Business Conference would not be possible without the contributions of the conference team, conference participants, and our generous sponsors. Thank you to each and every one of you for your contribution. We hope that you continue the discussion through the Health Care Club Twitter feed throughout the weekend and into the coming year.

There is still so much work to be done. Through contributing to the dialogue via the **Pulse** we hope to inspire and encourage you to think creatively on how to leave your own mark on healthcare. A year from now, in many ways the health care landscape will undoubtedly be radically different. What will your contribution be to those changes and innovations?

Sincerely,

***Christian Peña, Grace Bell, & Christina Wray***

Editors in Chief, Pulse 2016

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## Provider Shifts



# Medicare's CJR Bundled Payment Program: The Beginning of Wholesale Change in Providerland

*An interview with Dr. David Friend, Managing Director and Chief Transformation Officer of BDO's Center for Healthcare Excellence & Innovation*

**By Christian Peña**

Medicare's Comprehensive Care for Joint Replacement Model signifies a change in how a narrow set of healthcare services are paid for and delivered. Dr. Friend explains the details and ramifications of this program, which are especially acute for SNFs, as well as why he sees it as "the camel's nose in the tent": merely the beginning of wholesale change for acute and post-acute care providers.



**PULSE:** *Please provide a brief explanation of the changes that will come about as a result of the Comprehensive Care for Joint Replacement Payment Model for Acute Care Hospitals Furnishing Lower Extremity Joint Replacement Services—the CJR bundled payment program that goes into effect April 1st, 2016?*

**DR. DAVID FRIEND:** Medicare is rolling out this payment program in 67 metropolitan statistical areas (MSAs) nationally. Participating MSAs were selected by CMS because they recognized wide variation in the cost of total joint procedures. It is intended to apply only where people have traditional Medicare insurance. So if you're in Medicare Advantage, or if you're in some other kind of value-based system, it does not apply. And the purpose really is to begin the process by which hospitals will become accountable for providing care, not only while the patient is initially hospitalized, but also upon discharge to skilled nursing or home health.

The CJR program gathers together all of the services for a total joint procedure for the initial hospitalization and for 90 days of subsequent care. It is profound in the sense that it is episodic in nature, and it forces all of the people who are taking care of patients to think about the care of the patient in a more cooperative, holistic way.

One of the big provisions is that there is currently something called a three-day rule, or a three-night rule, which basically says that for a patient to leave a hospital and to go to a nursing home, for Medicare to provide reimbursement, the patient has to have been hospitalized for three days. Hospitals are allowed to waive the three day stay requirement if the patient is sent to a skilled facility with a three star or better rating. The impact of that is profound, first of all, on the skilled nursing facilities (SNFs), because by creating a safe harbor, it's going to dramatically incent hospitals to send patients to higher quality SNFs. Previously, there has been no direct incentive to do so, either legally or payment wise, but this creates a safe harbor that encourages hospitals to use three star or better SNFs. Secondly, it's towards the movement of expressly linking payment to healthcare quality, which has not been done previously. We tended to pay for things regardless of

their clinical quality, and this is the beginning of a dramatic change.

**PULSE:** *Can you provide a little more detail on the five-star ratings system and how it comes into play?*

**DR. FRIEND:** Sure. Well, there's been a five-star system in place for nursing homes for quite a while. It has been comprised of measures in terms of staffing, clinical quality, and how people did in surveys, and this produced an overall number. It has been a system that has not been used to differentiate payment amounts by Medicare or other payers.

For example, if you took a restaurant analogy, you might have a restaurant with terrible food and a restaurant with very good food. The payer would pay the same for a meal regardless of the quality of the food or service. We're now moving to a system where, in fact, the quality of the food is going to be a determinant in whether, A, you go to that restaurant, and B, how much the restaurant gets paid. And while this kind of concept applies virtually in every other part of the economy, where people have an understanding of what something is going to cost and what they're going to get in return, that has been missing in healthcare.

The system is going to start rewarding providers, including SNFs, to provide better care. This also reduces the variation that we see currently in care, particularly in SNFs where you can see the price of a hip replacement procedure ranging from \$10,000 to \$80,000 all in, with arguably no difference in quality. If there's really no difference in quality, why should there be such a dramatic price variance? So this is an attempt to reduce variance, to drive up the quality of the care, and to have a more consistent payment methodology.

All of the post-acute care providers are impacted by this move to payment based on quality. Nursing homes are particularly impacted. For the hospitals, at least in the first year or two, it's a relatively small amount of money. However, for SNFs, because they are so dependent on the Medicare beds, where they make most of their margin, even the slightest reduction in the Medicare census or in the amount of money they're



receiving per patient can dramatically impact their operating results. That's why this impact is going to be felt more acutely in skilled nursing than anywhere else.

**PULSE:** *So do you anticipate that reimbursement levels are going to go down due to the negotiating power of the bundle recipients?*

**DR. FRIEND:** It's already happening. It's going both up and down. If you are a quality SNF that offers the ability to prevent readmissions and provides good care, many of those facilities are in the position to negotiate rate increases. There are other facilities that are either going to see fewer patients or receive lower rates.

The payment systems in CJR are retrospective. The SNF can enter into a collaborative arrangement with the hospital convener and earn money from savings on the overall cost of care for the patient. Quality measures must be met to qualify for these gain sharing payments. I would not infer that we are entering a capitated payment state under CJE even though it certainly could look that way. Whether that's two days or 20 days, that will largely be up to the nursing home. We're going to pay much more according for outcome than by a nightly rate.

Some SNF operators could make significantly more money, particularly if they have quality, their electronic health record can tie into the hospital, and they are seen as a step-down unit of the hospital. They can command a tremendous premium and be very full, and they will actually be much more successful. This legislative change is a huge win for those kinds of providers. Again, there are other providers who will either lose patients because they can't compete or are going to be forced to cut price. There will be economic winners as well as significant economic losers.

**PULSE:** *From the perspective of investors interested in the post-acute care space and particularly in SNFs, how does this affect valuations and what implications does it have for consolidation in the post-acute care space?*

**DR. FRIEND:** I think it radically impacts valuations, both up and down. I can only conclude that there is a tremendous amount of mispriced assets right now in the market. So for smart investors who have an information advantage and can see the mispricing and arbitrage it there are opportunities to make a great deal of money. However, if you don't have the information advantage or you don't understand what's happening there will be significant risks to lose money. In general, we think this is becoming a far more sophisticated game.

To your point on consolidation, I would suggest that this is a very mom and pop industry that probably is ripe for tremendous consolidation. But against that is the fact that this is a local business. Healthcare is very local. It is really done one geography at a time. Given this, players in the space should focus on developing strength in certain geographies.

**PULSE:** *While this program could have far reaching implications it's important to remember that it only applies to comprehensive care for joint replacement for lower extremities. So it's not the total Medicare population, right?*

**DR. FRIEND:** Correct. There are only 794 hospitals and 67 MSAs, but I believe this is just the beginning. I believe what's going to happen is that this is going to be so successful that this process will be adopted very rapidly by commercial payers and by Medicaid. And I also believe this is going to rapidly expand from this one particular DRG—right now it only affects DRG 469 and 470—however we believe that this is the future of how healthcare is going to be driven. It is the camel's nose under the tent. Once the government sees how effective this is and how they started driving down variation and waste, the momentum to do this is going to be unstoppable. We are in very early stages here, but my belief, clearly -- and I'm on the record as saying this -- this is the beginning of the wholesale change, the way we're going to take care of people, because it makes so much sense to do it this way. And the current system makes so little sense.



**PULSE:** *How are hospitals responding to these changes?*

**DR. FRIEND:** Hospitals are going to be forced to carefully evaluate partners that can help them manage patients in the CJR program “outside the hospital walls.” Hospitals have never been financially linked to the process of care once the patient is discharged. That is the driver, we believe, for the fundamental change to a focus on sending people to higher quality facilities. Many hospitals are looking at this and saying, “You know what? The average per case is a couple thousand dollars, so it’s not worth it to us to go through all of these machinations.” But in year two, three, four, — because of the way CMS has organized the payment for this program — I think it’s going to become worth it to them. Also, the hospitals are going to find that they are under pressure from the employers of this country who are going to demand of the hospitals that they reduce healthcare costs and improve efficiency.

From a patient care perspective, if I’m going to take my mother to a hospital for a hip replacement, my first question is going to be, do you control the entire supply chain, or are you one of those old-think hospitals that still think once you discharge the patient you have no responsibility? And I think more and more patients, as they become more educated, are going to ask the same kinds of questions, but like anything else, it takes time. Nothing happens overnight in our economy, but momentum does get built.

So while the hospitals in some cases will ignore this for a while or say they don’t want to do it or it’s too complicated, I think over time the hospitals that do this are going to be rewarded with more volume, and the hospitals that don’t do this are going to find their own volumes start to shrink. So, again, once you have a much more efficient way of doing things, it’s difficult to run a very inefficient system and still compete. There might be hospitals in this country who are, ultimately, going to be pushed out of the total joint business altogether.

**PULSE:** *So what are some implications of the CJR for other post-acute care providers, specifically home health?*

**DR. FRIEND:** Well, it's very significant, because now we're going to free up the hospitals. For example, rather than just having a linear progression where you stayed in the hospital for three nights and then you went to skilled nursing for ten days and then you went to home health, the hospitals can have a lot more flexibility. The hospital might decide not to keep your mother in for three nights but instead keep her in for five nights, get her strong enough and then leap frog the skilled nursing facility and go directly to home health. That's one possibility.

Home health is going to be seen as an alternative to skilled nursing as well as a complement. More and more, you're going to see what we call the four Rs: the right care, the right place, the right time, and the right cost. Managing those four Rs is going to be the function of the hospital.

Beyond that I think there's going to be an explosion of businesses and technologies that are going to make us rethink patient care. I think we will look back 10 or 20 years from

now and say our patient care was in the Stone Age compared to what it could be. We're going to unleash a tremendous entrepreneurial energy that has been stifled by these very rigid payment systems. The innovators eventually prevail. There are many, many examples where the incumbent did not want the new technology, but I think healthcare is just ripe for a revolution because we can do it so much better than it's being done today.

Ultimately, if you're in the right spaces here, you're going to do very well, and if you're an incumbent, like a Kodak equivalent, you're going to be extinguished. And we think this is going to come with a ferocity that people don't expect because the pace of change in the economy -- the rate of change in technology is astounding. Three billion people have smartphones on the planet, and fifteen years ago virtually no one did. Try to think about healthcare fifteen, or even ten years from now and what's possible. I think this is all great for consumers and quality, but it's going to make the industry undergo rapid change. The incumbents will resist, but the incumbent phone manufacturers resisted as well, and we know how that worked out.

## Profile



Dr. David Friend is Co-Founder, Managing Director and Chief Transformation Officer of BDO's Center for Healthcare Excellence & Innovation. The BDO Center focuses on creating shareholder return, delivering clinical excellence and financial results, and executing strategies that drive innovation and transformation.

Previously Dr. Friend served as Executive Vice President and Chief Clinical Officer of Golden Living, a leading \$3B post-acute care provider, he was responsible for the care of 20 million patients delivered by over 42,000 associates in 40 states.

Dr. Friend has also served as President and Chief Medical Officer of Aseracare, a leading hospice and home care company; Board Director of The University of Connecticut Academic Medical Center; Chairman and CEO of The Palladium Group; Managing Director in Health Care at Alvarez & Marsal, and a Senior Partner, Board Member and Global Leader of Willis Towers Watson. Dr. Friend is a sought after speaker and commentator and the author of Healthcare.com: Rx for Reform.

# Exploring Innovation in Primary Care

*An interview with Tony Coletta, CEO at Tandigm Health*

**By Viba Saligrama**

To address rising healthcare costs, new models of care are emerging that focus on value. We spoke with CEO of Tandigm Health, Dr. Anthony Coletta, to learn more about the innovative start-up that was launched to better manage costs in the Philadelphia market. He shared with us factors needed to enable the shift from volume to value, how to manage growth, and broader trends impacting primary care.

**PULSE:** *The theme for our conference is **The Innovation Game: The Race between Entrants and Incumbents**. Could you talk about the origins of Tandigm as a joint venture between Independence Blue Cross and DaVita HealthCare Partners? What makes Tandigm an innovative entrant? What are your views on existing incumbents?*

**DR. COLETTA:** From my viewpoint, I see some of the incumbents in the healthcare industry as the engines that have driven overutilization.

Regarding the origins of Tandigm; Independence Blue Cross a number of years ago formulated what they called their 2016 strategy. They had Milliman information that indicated the five-county Philadelphia market was one of the most highly utilized markets in the country. The opportunity to manage costs while improving quality in the market was really around decreasing utilization metrics in the market. Independence Blue Cross determined a physician-centric strategy would be

the most meaningful approach to try and appropriately cut out the waste and lower utilization resulting in improved quality and lower costs. In other words, driving down unit price lower and lower was not the solution, since that would actually fuel utilization.

That was really the origin of the strategy. Their managed care model is something that many payers across the country have seen and from that standpoint, there's an incumbency related to it. They were looking for a means to disrupt that, disrupt themselves in a way through managing health in a different fashion – by putting doctors at the center.

Once we knew that our strategy was putting primary care doctors in the center, engaging physicians through incentives, having real-time business intelligence, and providing additional care support for the sickest patients, we then went out and sought a national-scale partner. We looked for someone who could help support the strategy, not only from a

capital standpoint, but obviously, from a clinical, innovative, and coordinated care standpoint. That's how we came to DaVita Healthcare Partners.

Healthcare Partners has been executing a coordinated care model in Southern California and other markets for many years, for decades in some places. They were taking better care of patients, helping lower patients' costs, making patients healthier, and also building business models around health as opposed to disease. They had legacy market expertise in what the models look like, so they became a natural partner in the enterprise.

**PULSE:** *As you mentioned, Philadelphia was a natural starting point given the high utilization metrics and costs. Were there other regions that were contenders or is there a plan to expand beyond Philadelphia?*

**DR. COLETTA:** Yes, but we wanted to prove the concept first in Philadelphia. Every market is different. In Philadelphia, you have a number of factors that have led to an imbalance in the system. Things like high utilization and legacy pay-for-performance structures drive up costs but do little to increase quality.

All healthcare is local, but there are certain principles that we are testing in Philadelphia that if successful could be translated into other markets. It won't be identical and we can't just drop the Tandigm model into another region, but both owners felt that after several years of demonstrating the model, components could be replicated.

**PULSE:** *Could you talk more about the principles necessary for this model, whether it's for the Philadelphia region or other areas it might be replicated?*

**DR. COLETTA:** The first premise for us was having primary care physicians at the center, not to the exclusion of specialists over time, but we believe primary care doctors gain the most professional and personal satisfaction from keeping their patients healthy. They had the most to gain from a model that incented physicians to promote health and maintain health

in populations. To replicate, we would assess the primary care landscape. In Philadelphia, a couple years ago, there were about 2500 primary care Adult Family Practice and Internal Medicine Physicians and about half of them were independent, so there was a large enough independent group of primary care doctors to approach initially.

Another important principle is accurately attributing population to the business model. That's why we picked HMO products in the beginning. When a patient buys an HMO product in this region, they pick a doctor. That ability to clearly attribute financial and clinical data between the patient and their doctor is important.

If you step back and look at Philadelphia, we see a big empty space between the emergency room and the doctor's office, right? There's not a lot that's being developed in this community, to enhance the care of patients in their homes. Philadelphia is a very immature market in terms of development of those services in the community because the emergency room has become the default for a lot of patients, as opposed to the doctor's office. In markets where some of these community-based services are more highly developed, interventions become more effective faster than others.

**PULSE:** *Could you talk more about building out a community-based delivery system? Has Tandigm experimented with in-house healthcare and if so, what have been the results?*

**DR. COLETTA:** We're just starting that component now. With about 63,000 commercial and 22,000 Medicare Advantage patients, we had to pick some lanes to focus in the beginning. We started out with just telephonic intervention. But very quickly we realized the need to accelerate and build these additional interventions faster. They are in our business plan. I think of them as people, programs, and places in the community.



**People:** People refers to the new and differentiated workforce (doctors, nurse practitioners, physician assistants) who need to work beyond their office.

This mobile workforce can help move patients from one

setting to another in the most efficient and effective fashion. It includes community health workers, behavioral health professionals, social workers, pharmacists and others.



**Programs:** Programs include house call programs where you actually bring primary care into the homes of the very sickest patients. It also includes community-based health programs, where you find ways in various communities to address the socio-economic needs and behavioral health needs of patients through community-based programs. Sometimes these programs exist, but doctors are not aware of them and sometimes they need to be built.



**Places:** These are primarily sites with lower costs of care. Assuming that the patient's acuity level is appropriate, surgeries should be done in lower cost settings. In some situations, there are markets that have even developed chronic care clinics where the most complicated patients go for care. These alternate, lower-cost sites of care will build in communities over time and some of them, such as Urgicenters, are taking traction in the Philadelphia market. In many ways, their utilization in Philadelphia has been slower than other markets.

So having people, programs, and places in the community empowers primary care doctors. In order to be a disruptive innovator in healthcare, and in this market especially, we think you need to have the three key components. You need to have a facilitated networks of doctors, hospitals, SNFs, other facilities that are willing to integrate in terms of data and communication. You need technology that provides communication and interoperability around data. And then you have to have a business model that drives the behavior. Taking risk and responsibly, accepting the full cost and quality for a population of patients is critical. It is important to be rewarded for doing what needs to be done at the right place in the right time. This is in contrast to just perpetrating fee-for-service or being rewarded for doing more.

That's all part of innovation. None of that has happened in this marketplace at all, and that's where Tandigm has entered in as a disruptive innovator.

**PULSE:** *We often associate innovation with digital health. Is Tandigm experimenting with any digital health technologies, either for use with patients or physicians?*

**DR. COLETTA:** Everybody seems to have a different definition of what digital health really is. We think of it as everything from big data to biometrics. We're beginning to pilot some digital health strategies. First we are piloting a mobile application that allows doctors to connect with their patients through scheduled video encounters. What we're piloting is connecting our care team with patients and their caregivers. Envision a patient that has a lot of complicated illnesses and just left the hospital. The patient has a daughter who visits three times a week to help. Previously, our team would engage them on the telephone, and might find that the patient has social service needs as well as some pharmaceutical issues. There are many people who need to be involved. Telephonic conference calls are difficult in business and even harder to use in patient care. However, by using this mobile application on an iPad, you could have the team here at Tandigm talking to the patient and daughter; they're seeing one another and everyone's engaged.

We are also piloting this same application with primary care doctors where you can set up the app so that the patient can schedule a visit with the doctor via video conferencing. Theoretically, if the patient has a rash, he could turn on the app and show the rash to his primary care doctor. This differs from other telemedicine platforms because patients are connecting directly with their physician, not somebody they don't know.

Digital health has to be introduced thoughtfully; it has to be built into the business model, and it has to be something that's accepted by both the patients and the primary care doctors.

**PULSE:** *In just over a year, Tandigm has had impressive growth. Thinking long-term, how do you see Tandigm continuing to grow? Can this innovative model continue to scale? What are you most excited for and what risks do you see in the future?*



**DR. COLETTA:** I'll reference the book *Predictable Success* by Les McKeown. Our biggest challenge is going to be how to manage our growth while we execute on our strategies. Providing the finest care possible to patients is really, really complicated, although it's easy to say. As we grow faster and gain more traction, the balance between growth and execution is going to be critical. We have to manage both, but also demonstrate that the model really works.

The reason why I reference *Predictable Success* is they talk about startups, and Tandigm is a startup, right? We're not even two years old yet. So we're sort of anomaly when it comes to startups given the revenue and size. But that's healthcare. The startup phase is called the early struggle, where essentially companies are using capital from the outside and just trying to put the pieces of the model together. The next phase is actually fun because what happens is as you demonstrate success, everybody wants to know what you did and how you did it. Primary care doctors theoretically would want to be a

part of this as they see greater rewards. Health systems that are looking for ways to find value will be interested.

But you have to be careful that you don't grow so fast that you're unable to execute as effectively as you need to or can around patient care. And to me, I think that's going to be the greatest challenge. In *Predictable Success*, they talk about the next phase being white water, where suddenly you've gotten on this ride and you've become so successful that you're trying to figure out how to get to predictable success. Predictable success is a blend between discipline and innovation. An entrepreneurial startup needs to be willing to pivot when it needs to, so that it doesn't get stuck in organizational process. We've already struggled with that a little bit in the beginning because our large-scale partners have existing organizational approach to things. We have to adapt to their styles, and there are times we had to consciously step back to make sure that our talented people have the opportunity to bring ideas to the forefront, move, and be facile.

That's a good problem to have if you're that successful. We believe that we're going to be able to talk about some early victories in the next quarter. We haven't moved the mountain yet, but we think we're tilting it in the right direction.

We're seeing 20% lower emergency room visits for our commercial patients and 16% lower emergency room visits for our Medicare patients. As we gain maturity in our programs, the model could become in greater demand and we just have to make sure we execute on evolving as a really smart population health company. Overall, it's a complicated business, but managing growth with execution will be probably our greatest challenge over the next three years.

**PULSE:** *More broadly, what other trends do you see disrupting primary care?*

**DR. COLETTA:** I think of disruption as a good thing. First, successful primary care doctors are going to increase both their professional and personal satisfaction in what they do. They're going to move up their license for capabilities,

as a lot of what they do on a routine basis gets supported by technologies and professionals (nurse practitioners, physician's assistants) who can do it well at a lower price point. The successful primary doctors will embrace that model and be paid competitively. I think that'll happen in Philadelphia. I think it will happen all over the country. By allowing that to happen, they're disrupting the typical office-based, "I-have-to-see-30-patients-a-day" model.

From a market-based perspective, there will be strategic partnerships amongst stakeholders who may have previously been seen as competitors.

At the end of the day, there needs to be fundamental behavioral change in the way care is being delivered. It is changing the behavior of doctors, changing the behavior of patients, and changing the behavior of hospital executives and administrators. This takes time and is extremely complex. But at the end of the day, when you're creating the finest care possible, the value will follow over time.

## Profile

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Anthony V. Coletta, M.D., M.B.A, is the President and Chief Executive Officer of Tandigm Health, a groundbreaking joint venture by Independence Blue Cross (Independence) and Health Care Partners, LLC that will work in tandem with primary care physicians to create a new paradigm of high-quality, affordable health care in the Philadelphia region. A board-certified general surgeon and an experienced health care business leader, Dr. Coletta brings an exceptional depth of executive and clinical expertise to Tandigm Health.

Dr. Coletta was previously a Senior Vice President of Independence where he served as one of the principal architects of the Tandigm Health business plan. Prior to this, Dr. Coletta was Executive Vice President and Chief Medical Officer of Holy Redeemer Health System in Huntingdon Valley, PA. In addition to his executive roles, Dr. Coletta was an attending general surgeon for more than two decades at Bryn Mawr Hospital, as well as an associate clinical professor of surgery at Drexel University in Philadelphia. During his distinguished clinical career, he was recognized by Philadelphia Magazine as a pioneer in minimally invasive surgical techniques and as one of the Top Doctors in the Philadelphia region.



# Post-Acute Care in the Post Health Care Reform Era: Increasing Relevance, Responsibility and Risk

*An interview with Benjamin Breier, President and Chief Executive Officer at Kindred Healthcare*

**By Christian Peña**

Sea changes are occurring in every aspect of health care. The post-acute sector is certainly no exception. We spoke with Kindred Healthcare CEO Mr. Benjamin Breier to get his take on how Kindred and post-acute care at large are navigating and even leading these changes.

**PULSE:** *The theme for our conference is **The Innovation Game: The Race between Entrants and Incumbents**. As one of the larger, more seasoned organizations in the space, what are your thoughts about how incumbents are innovating the post-acute care sector?*

**MR. BEN BREIER:** One of the things that we really see happening is that many incumbents are starting to expand and diversify their service lines. They are doing this in order to become strong partners to payers, to health systems and to physician groups, to all of our referral sources. A lot of post-acute companies are getting into multiple lines of business.

Incumbents are also testing what I would call new value-based purchasing models. In order to do that kind of testing they have to invest in technology, a lot of technology that both

helps with the analytics but also helps to improve patient care. This helps to move information from one setting to another, or across multiple settings, and at the end operate more efficiently.

**PULSE:** *In what ways is Kindred an entrant, or in what ways would you like Kindred to be an entrant?*

**BREIER:** Looking at the evolution of our company over the last couple of years, we actually have become an entrant in multiple different lines of business. For example, we did not have much capacity in the home health and hospice space inside of healthcare delivery. So, last year we went out and acquired the largest home health and hospice provider in the country, Gentiva, in order to become an entrant into that market.

We now have the base of businesses that we want to be in. What we are now trying to do is take this diverse set of businesses and figure out how to operate them more collaboratively, not just up and down the verticals that they are reimbursed and regulated, but on more of a horizontal way, in an integrated and “Continue the Care” fashion.

By delivering integrated post-acute care, not just in a nursing center, but from an LTACH to an IRF, to home health, to hospice, to all of the things that we are involved in, we are acting as an entrant. We are trying to be an entrant into the coordinated care population health management universe. And that’s not specifically in going out to acquire a business, but it’s in taking all of our businesses that we’ve been incumbents in for so many years and really reworking them into a new value proposition.

**PULSE:** *What entrants are you seeing that are making the biggest impact in the post-acute care sector?*

**BREIER:** There are a lot of companies that call themselves “care coordinators” or “navigators.” These third-party information-driven companies are trying to leverage themselves into the post-acute space as a new entrant who can talk to insurance companies and referral sources and say that if you use our information or our algorithms, we can help you manage costs more efficiently by putting your patients or your residents into the lowest cost setting. We’re seeing a lot of that in the post-acute space.

I would point out that they don’t actually own any of the provider networks. They don’t actually provide any of the care. And if you look back over the last 20 years of healthcare, there’s been a lot of these navigator type companies that have come, that have flashed, and then gone. We’ll see if any of these survive in the long haul.

**PULSE:** *What are the major influences or pressures that you*

*are experiencing from other stakeholders in healthcare that are driving you to innovate?*

**BREIER:** There’s a lot of discussion and new policy and new reimbursement around reducing readmissions back to hospitals and certainly within a 90-day episode. Our Kindred care settings are really proving to be a strong partner to hospitals and health systems because of the work we’ve done around our low re-hospitalization rates. One of the great values that we drive is in our ability to keep pushing patients into lower acuity settings, drive readmission rates lower and get people returned home faster. One of the ways that we’re doing this is by implementing lots of technology in new ways across our continuum to reduce average lengths of stay, to reduce some of the friction costs in and around healthcare, and to get people home faster and keep them home.

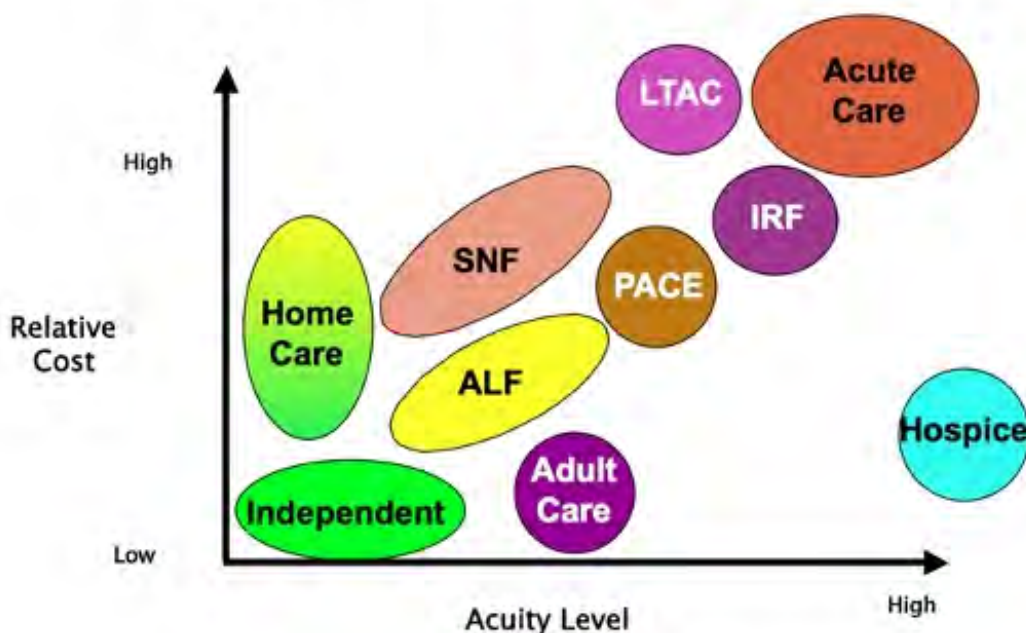
In addition to that we’ve developed what I would call a comprehensive patient care centered model that really allows us to consistently improve our quality and our clinical outcomes in order to be the strong solution.

**PULSE:** *As value networks develop, whether in response to ACOs, bundled payments, integrated delivery networks or other factors, how is Kindred seeking to position itself in a way that allows them to stay competitive?*

**BREIER:** Over the last number of years Kindred has developed lots of relationships and partnerships with some of the nation’s premiere hospital and health systems and other healthcare organizations to establish a comprehensive and coordinated care network. Kindred has been at the forefront really in testing new payment and new delivery models. We’re currently participating in some of CMS’s innovation center supported models, including things like our bundled payment demonstration. In 2014 we became an owner and a strategic partner in the Silver State Medicare Shared Savings Program

*[Post-acute care providers] are starting to expand and diversify their service lines [...] to become strong partners to payers, to health systems, physician groups, to all of our referral sources.*

## LTPAC Silo Spectrum of Care



ACO, which covers the lives of almost 20,000 Medicare patients in Southern Nevada.

We're also implementing innovative care models that seem to be having a positive impact in preventing hospital readmissions, improving clinical outcomes and getting people home faster.

**PULSE:** *What are the biggest threats or challenges for post-acute care providers, and which component or components of the post-acute care spectrum face the most risk?*

**MR. BEN BREIER:** There's a lot of opportunity, but there are certainly a lot of risks in what we do. First, just from a policy perspective, we spend a lot of time in Washington talking to policymakers about the kind of care that we provide, and we find ourselves caught up in the wash of things like budget discussions and policy debates, some of which have nothing to do with healthcare delivery at all.

But sometimes policymakers, in an effort to come up with short-term financial solutions, use the Medicare program to

help pay for punting the football down the road. Having said that, this last budget that was just passed raised some of the domestic spending caps and essentially gives us some clarity through 2017. When we think about the regulatory and the reimbursement side of the world, there are certainly lots and lots of risks involved there.

On the other hand, just from a payment perspective, we certainly keep our eye out on what's happening in and around private enterprise. The consolidation that's occurring on the managed care side of the world is continuing to drive payer power. We certainly worry in the post-acute world about whether or not we will get commoditized and be forced to take prices well below what we think it costs to deliver quality of care.

That's why at Kindred we have continued to focus on scaling our own company. We think size and scale and innovation help us meet some of the changes and some of the challenges that we see, both in the public and the private sector.

## Profile

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**Benjamin A. Breier**

*President and Chief Executive Officer of Kindred Healthcare, Inc.*

Benjamin A. Breier is the President and Chief Executive Officer of Kindred Healthcare, Inc., one of the largest providers of healthcare services in the United States. Mr. Breier has served as President of Kindred since 2012 and was named Chief Operating Officer in August 2010. Mr. Breier previously served as Executive Vice President and President of Kindred Healthcare's Hospital Division from March 2008 to August 2010 and as President of Kindred's Rehabilitation Division from August 2005 to March 2008.

Prior to joining Kindred, Mr. Breier served as Concentra, Inc.'s Senior Vice President of Operations and Vice President of Operations. Before joining Concentra, Mr. Breier served as Director of Operations at Premier Practice Management, Inc. He joined Premier as Chief Operating Officer in January 1997 and became Chief Executive Officer in June 1998. Premier Practice Management was a subsidiary of Premier, Inc., the largest hospital group purchasing alliance in the United States.

Mr. Breier received his Bachelor's in Economics from the Wharton School of Business at The University of Pennsylvania and holds an MBA and MHA from the University of Miami, (Fla.)

Mr. Breier currently serves on the Board of Directors of Kindred Healthcare, and the Federation of American Hospitals. Mr. Breier is a member of the Business Roundtable and the Wall Street Journal CEO Council.

In August 2015, Modern Healthcare magazine named Mr. Breier one of the 100 Most Influential People in Healthcare and in September 2010, Mr. Breier was also named by Modern Healthcare magazine to the 2010 "Up & Comers" list, which recognizes rising young leaders aged 40 and under who are making a difference in healthcare. In March 2015, Louisville Business First named Mr. Breier the Health Care Leader of the Year.

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## Biopharma Trends and Financing



# Drug Pricing: An Industry Perspective

*An interview with Biogen's Chief Strategy Officer,  
Adam M. Koppel, M.D., Ph.D.*

**By Jordan Percherer**

Since the advent of biosynthetic insulin in the 1980s, tremendous advances in science have given rise to biologic medicines that have dramatically improved both options and outcomes for patients. Yet, as the focus of the healthcare industry has shifted to cost containment and comparative value, the pricing of these novel medicines has come under widespread scrutiny. Today, Pulse catches up with the Chief Strategy Officer of Biogen, Dr. Adam Koppel, to gather the perspective of an industry veteran.

**PULSE:** *I'd like to dive right into the topic of the interview, drug pricing. Why do you think pricing has become such a hot topic in the news today?*

**DR. KOPPEL:** It's been in the news a lot, unfortunately, because there have been some high profile, inappropriate examples of price increases. What is often overlooked is that in recent years there have been truly innovative and even curative new drugs developed that have impacted millions of patients across numerous indications – hepatitis C, multiple sclerosis, cancer, diabetes, among many others.

**PULSE:** *Many drugs and drug companies have come under fire for how they have priced these innovations. Do you think this debate is warranted?*

**DR. KOPPEL:** Debate is always warranted, but there should be a balanced set of arguments on both sides. There are certainly

examples where there may be price increases that seem a bit extraordinary. But on the whole, drugs and therapeutics have grown in line with overall healthcare spend. In 2014 and 2015 there was a spike but that was due to a record number of approvals for new therapies – mostly due to new drugs in hepatitis C and in oncology that brought huge value to providers, patients, and families. It's not out of nowhere that prices went up, it's that significant, innovative products came to market that had a large impact on patients. So in many respects, the discussion is good. It brings positive attention to the impact that innovation is having on patients – and it is important to remember that one day these new innovations will lose their patent protection, and if the market is working correctly, their prices will decline significantly. So the high prices have a limited window.

**PULSE:** *Often times drug prices that are quoted in news publications are not the prices that are actually paid by*



*insurers, which brings to light some of the complexities of the drug supply chain. How does this factor into the broader discussion around drug pricing?*

**DR. KOPPEL:** So the concept that's used is called list price which advances at a certain clip, and that rate is different for different drugs ranging anywhere from 3% a year in some categories to 10% or more in others. Companies do not realize 100% of those price increases due to rebates, discounts, and other concessions. So in reality, the price increases are much less than what you might see reported. The interesting thing to discuss here is the implication this has on other channel partners involved in the process and what may impact a physician deciding that a patient needs a drug and that patient actually getting the drug. This is the ecosystem of pharmacy benefit managers, payers, specialty pharmacies, and other stakeholders. One thing to realize is that when you see the difference between a net and a gross price increase, some of that goes to supporting those channel partners.

**PULSE:** *Do you think physicians are aware of the prices of the drugs they prescribe?*

**DR. KOPPEL:** It's very dependent on the therapeutic area. In oncology, yes, they are becoming more aware. In primary care areas, probably less so. My experience has been that most physicians, even if they think they're aware, don't understand the full rationale behind drug pricing. Probably, although they may speak to it, I also don't believe that most physicians use drug pricing as a driver for their decision making of what drug to use. The most important thing for pharmaceutical companies is to ensure patients have access to therapies, and we are committed to patient assistance programs that help do that. Last year, we provided over \$1 billion to assist patients.

**PULSE:** *What about impact on patients – do you think they are feeling higher therapy costs?*



**DR. KOPPEL:** There are certainly some important examples, especially for uninsured or under-insured families. The increase in copays and the changes in the way insurance covers drugs is certainly a part of what's driving increased attention to drug pricing. Patients are feeling the costs more.

**PULSE:** *How do you think comparative effectiveness and value-based medicine will affect drug developers in the near future?*

**DR. KOPPEL:** I think that it will change the behavior of the drug companies developing the drugs. If there's drug X that already exists for a particular indication and they are developing a drug for that indication, they'll say "Well this is what we need to show if we want to charge a particular price, because there's other options already on the market - we better ensure that we show value for the price we want to charge." So drug companies will have to prospectively think about and design clinical trials such that they'll be able to show that value. They may be able to do it during their label-enabling clinical studies, or they may be able to get that data via "real world data" or the data that's collected while their drug is approved and on the market and is being used by a larger subset of the community.

**PULSE:** *What are your thoughts on biosimilars in reference to the topics we've been discussing and how is Biogen thinking about this topic?*

**DR. KOPPEL:** I'm glad you asked that question. At Biogen, we have a joint venture with Samsung called Samsung Bioepis where we are leveraging our expertise in manufacturing and technical drug development. We will also commercialize these biosimilars in Europe. There are several biologics we are now developing in the anti-TNF space, and recently our first etanercept biosimilar referencing Enbrel, named Benepali, was approved in the EU. Biogen is an innovation company like most biotech companies, and innovation companies ought to be protected through the patent system for their innovations, because they've spent a lot of money to identify insights and turn them into practical and safe and efficacious drugs for society. That being said, after a certain period of time, there should be an opportunity for lowering the price of these drugs through biosimilar pathway.

**PULSE:** *We've touched on a lot of topics during this discussion. For our last question, what thoughts do you have for the industry going forward?*

**DR. KOPPEL:** The debate needs to shift from the price of these therapeutics, to the value that they are bringing to patients, prescribing physicians, families, and to society. We didn't talk about dementia, which is an area Biogen is moving into, but when we think about developing drugs for dementia and particularly dementia of the Alzheimer's type, the impact of this disease not just on the patient but on society on a whole is tremendous. So for us, we think about if we are able to find solutions to reverse or slow the progression of these terrible dementias, the impact on society of doing that is great and it needs to be considered that way.

## Profile



Adam Koppel, M.D., Ph.D., is an Executive Vice President of Corporate Development & Strategy and the Chief Strategy Officer of Biogen, responsible for leading corporate strategy and portfolio management, and has served in this position since November 2015. Dr. Koppel joined Biogen in May 2014 as Senior Vice President and Chief Strategy Officer. Previously, Dr. Koppel was a Managing Director of Brookside Capital, the public-equity affiliate of Bain Capital. Prior to Brookside Capital, he served as Associate Principal with McKinsey & Company, where he consulted to companies in the pharmaceutical and biotechnology industries. Dr. Koppel has served as a member of PTC's Board of Directors since March 2013 and also serves on the Board of Directors of Trevena, Inc. Dr. Koppel received an M.D. and Ph.D. from the University of Pennsylvania School of Medicine, an M.B.A. from the Wharton School of the University of Pennsylvania and a B.A. from Harvard University.

# Investing in Biotech 2016

*An interview with Karl Zachar, Managing Director  
at Pillar Partners, a \$300M crossover  
healthcare investment fund*

**By Christopher Skayne**

For the past six years, biotech has been the top performing sector of the S&P500. We sat down with Karl Zachar to get a pulse on the trends, challenges and outlook for this massive investment space with implications for the health and well-being of billions of people.

**PULSE:** *At a high level, I would love to get your take on some of the major trends in biotech right now. Is there any one area – genomics, immuno-oncology, etc. – that has the attention of you and the fund in particular?*

**KARL ZACHAR:** It is a very exciting time in healthcare and biotech. Pillar Partners has two main investment theses: a) the scientific community's increased understanding of genomics, DNA, and innate immunity (how the human body's immune system fights disease); and (b) the dramatic improvements in the cost and throughput time of DNA sequencing. For the first time, we now have cost-effective DNA data, which is changing the way we diagnose diseases and is transforming the drug discovery paradigm.

Five years ago the cost to sequence a patient's genome was approximately \$100 million. Today, a comprehensive DNA sequencing can be done for under \$1,000. As a result, we are seeing most leading US cancer centers perform DNA tests on all their cancer patients. The availability of this data allows researchers to understand the mechanism of action behind the cancer cells and develop strategies to destroy them.

Currently, most advancements in genomics are cancer related, but, hopefully, we can get to a point where we are sequencing every patient with life threatening diseases.

**PULSE:** *What most excites you about these advances in genomics?*

**ZACHAR:** Think about how powerful this is. For the first time, researchers have the ability to collect precise molecular data and pinpoint the cause of a patient's disease. It's crazy that we were diagnosing cancer patients by tumor type (breast cancer, lung cancer, brain cancer, etc). We did not know any better. Now with data, we can diagnose and treat the root cause of the disease - the patient's specific genetic mutations. Very exciting times.

**PULSE:** *What types of opportunities do you think this trend is creating for both biotech entrepreneurs and biotech investors? I would love to get your thoughts on what it takes to be a biotech entrepreneur in 2016.*



**ZACHAR:** I'm going to answer your question by describing where we see the most opportunity for entrepreneurs from our vantage point at Pillar. A few themes that we are working include:

DNA diagnostic technology combined with the right business model can motivate doctors to incorporate this new technology into their workflow – this has tremendous potential. Cost, insurance reimbursement, and throughput time are just a few considerations that still need to be ironed out in order for wide adoption of this technology by physicians and researchers.

Data aggregation and analysis of all this vast molecular data is equally important. We need informatics experts from other industries who can figure out how best to analyze this dense amount of data and synthesize the results so that it can be useful to clinicians at the point of care.

On the biotech side, Pillar Partners is focused on advancements in gene therapy. Specifically, we are focused on innate immunity, gene editing, and how the process of drug discovery is changing from “discovery” to “engineering.” While oncology dominates the headlines, there is quite a bit of promise using gene therapy to treat serious and rare diseases in CNS (central nervous system), cardiovascular, obesity, and autoimmune disorders - to name a few.

Given the huge opportunity, there is a significant need for MBA entrepreneurs to jump into the biotech industry to help build sustainable business models around great science. The majority of recent breakthrough therapeutic innovations have come from small biotech companies. Large pharma companies have become too big and now recognize they do not have a culture that fosters innovation. As a consequence, pharma has not been able to innovate as rapidly as they would like. Smaller, focused biotech companies are the ones that

have been the innovators in the field. This is where smart, ambitious MBA entrepreneurs can team with scientists and researchers to create real value.

**PULSE:** *And what does this all mean for early-stage biotech investors?*

**ZACHAR:** For the past six years, biotech has been the top performing sector of the S&P500. Despite the recent market downturn, I remain optimistic about the future of biotech investing. It is one of the few exciting growth areas in the US economy. However, as in any rapidly changing technology market, there will be volatility, big winners and (by definition) many losers. The current biotech revolution is no different than the early years of the internet. The key to picking winners is to identify great science combined with a strong management team going after a very specific, unmet medical need.

**PULSE:** *A follow-up to the previous question: there's one trend in particular – the increase in orphan drugs – that I wanted to ask you about. Do you think what we're seeing here – with 45 drugs approved by the FDA in 2015 and 41 in 2014 (the average is usually around 15) is the new normal? Are orphan drugs – drugs that target therapies for specific populations that suffer from rare diseases – the place where we will continue to see the most growth?*

**ZACHAR:** In 2013 the FDA initiated an expedited drug development program called “Breakthrough Therapy Designation” which launched a fast track approval process for drugs targeting orphan diseases with unmet medical needs. The increased number of drug approvals in the last two years was driven by these breakthrough orphan drug approvals which address smaller populations of very sick patients. Smaller biotech companies typically focus on breakthrough orphan indications because the FDA approval process is much less onerous – in terms of time to approval and clinical trial expense. Breakthrough drugs are getting approved with very targeted trials involving 20-30 patients over 12-18 months. This is much different from the traditional clinical trial process for mega-indications which frequently require thousands of patients over a 7-10 year time horizon.

**PULSE:** *Got it. So is this the new normal?*

**ZACHAR:** Yes. In fact, there is a thoughtful argument that pretty soon all diseases will become orphan diseases. All medicine will become truly personalized medicine. The medical community is starting to understand that a diagnosis like lung cancer is really a catch-all for numerous diseases caused by a number of different genetic mutations. The same is true for autoimmune disease such as rheumatoid arthritis, dementia, and pneumonia. Each of these disease classifications will ultimately prove to be 10-15 different diseases that need to be treated very uniquely.

**PULSE:** *Does that affect trends in reimbursement at all?*

**ZACHAR:** Reimbursement is a huge challenge with these new technologies. Medicare and private payers are playing catch-up on the science. Currently, very few DNA tests are covered by insurance policies – even for seriously ill patients. Additionally, most immunotherapies are being approved to be used in combination with the current standard of care (SOC) drugs. SOC drugs for rare diseases can be priced at around \$100,000 per year. By combining a SOC treatment with an immunotherapy drug, you could easily double the cost of a patient's treatment. Insurance companies are aggressively pushing back on this doubling of cost. Finally, managed care and ACOs were trying to standardize reimbursement across big disease classifications (breast cancer, cardiovascular disease, etc.). In many cases payers were negotiating capitated reimbursement models for these larger diagnoses. However, under this new, personalized medicine paradigm which is starting to tell us that every disease is in fact an orphan disease, the accountable care reimbursement models need to be adjusted – standardized payments need to be closely tailored to specific diseases.

**PULSE:** *Lets shift back to thinking about investment opportunities now. Investors – especially early stage investors - need to exit their investments at some point. 2015 was a huge year for Biotech IPO's. Is the IPO the goal for most investors in early-stage biotech? Is the sale to a strategic investor something you think about?*

**ZACHAR:** We are in a tough market for biotech. The biotech public market is off 30% from its highs last summer, and the IPO window is effectively closed. Investors are in a “show me” mode and do not want to take long-term development risks right now.

The good news is that many biotech CEOs were savvy enough to raise cash in 2015 when the market valuations were exceptional. (The well-known adage in the biotech industry is “raise money when you can, not when you need it”). Those companies that need to raise money in the next six months will have to rely on strategic alliances with Pharma companies or a private funding at much lower valuations.

As for possible liquidity or an exit, I think we will see another wave of IPOs and M&A activity in the next 12 months. However, investors will be much more price sensitive than we saw in 2014-2015.

**PULSE:** *Specifically, what are a few of the key characteristics you look for before investing in a company?*

**ZACHAR:** Pillar invests in a wide range of science-based innovation across healthcare. We look for companies and

ideas founded by smart, passionate entrepreneurs who are tackling unique problems in healthcare and medicine using disruptive technology. Pillar is attracted to original ideas to problems that were previously thought unsolvable. We partner with and fund people we trust and with whom we see ourselves developing a multi-year relationship.

**PULSE:** *Great. Finally, I'd love to hear about your personal outlook on investing, or even working, in health care: Is biotech the place to be?*

**ZACHAR:** In my opinion, healthcare is one of the best sectors to get good returns for US investors and entrepreneurs. Healthcare represents 19% of US GDP and continues to grow faster than most other industries. Additionally, healthcare is a \$3 trillion market that has not yet been disrupted. There are so many opportunities to make a difference while improving our healthcare system.

As far as different subsectors within healthcare, I would encourage MBA students to get exposure to a wide range of business models and companies across healthcare. I have always been drawn to disruptive data and technology models in healthcare which have the potential to cure disease and dramatically improve care delivery.

## Profile



Karl Zachar is currently a founding partner at Pillar Life Sciences, an investment partnership focused on investing in science driven healthcare. Prior to Pillar, Mr. Zachar served as VP of Product Strategy and Business Development for athenahealth (ATHN) where he led athena's business development, M&A, and ecosystem strategy. Previously, Karl was President of IntrinsicQ, an oncology data company. Karl also worked as a VP at Goldman Sachs. Mr. Zachar graduated from Amherst College magna cum laude and received an MBA degree from the Harvard Business School.

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## Health Care Technology Innovations

# Expanding Access to Mental Health Treatment Through Technology

*An interview with Alejandro Fong, Co-Founder and CEO of Lantern, and Richard Gengler, CEO and Founder of Prevail Health Solutions*

**By Brandon Holler**

According to the National Alliance on Mental Illness 60% of adults with mental illness do not receive treatment. For individuals with depression, anxiety, or PTSD, seeking treatment is often inconvenient and embarrassing. We spoke with Alejandro Fong, Co-Founder and CEO of Lantern, and Richard Gengler, CEO and Founder of Prevail Health Solutions, to understand how Lantern and Prevail Health are tackling these problems by extending the reach of Cognitive Behavioral Therapy (CBT) with technology.

**PULSE:** *Please describe your product offering and how you're innovating in the behavioral health space.*

**ALEJANDRO FONG:** Lantern is a mobile app. And what we deliver are personalized CBT programs. They focus on stress, mood, body image, anxiety, et cetera. We determine fit and then get users on a personalized program that pairs them with a one-to-one coach, who supports them via asynchronous text or in-app.

The day-to-day experience is you open your Lantern app on your phone, and each day there's a check-in. Typically, it's just a note of where's your stress level, where's your anxiety level, which gets sent to your coach. Then there will be a podcast

or some informational content about the technique that you'll be learning that day. All of this is within ten minutes. The technique might be learning about and measuring automatic thoughts and tracking them. Or it could be audio, such as a breathing exercise.

The idea generally is to be really accessible, personalized, with real professional care, positioning Lantern as another rung on the ladder within the mental health ecosystem, which has just typically been face-to-face therapy and pill-based psychopharmacology.

**RICHARD GENGLER:** Our story is that Prevail was built to solve a pressing need in the military since I was a Navy pilot. I also



saw enormous need for disruption in the broader behavioral health marketplace, and so came up with a plan to work with some of the leading clinicians throughout the country, from Northwestern, University of Chicago, and the Beck Institute to translate a lot of the proven methods of in-person therapy online into something that can be delivered over the computer in a scalable way. The key is personalization- when you see a doctor face-to-face, he or she learns about you and then tailors their treatment to fit your personal situation. Computer programs didn't do that before- it's not been traditionally scalable to do anything other than have a one size fits all computer-based program. We set out to change that, and in partnership with the National Science Foundation through their [Small Business Innovation Research] program, we built a novel technology that delivers highly personalized treatment experiences, yet in a very scalable way.

Since there's a challenge with the lack of doctors and clinicians in behavioral health, we have a trained peer specialist model. We want a really easy way to kind of bring them in, allow them to feel comfortable, something that they can engage in. From the beginning we realized that we had to validate our programs and build a strong evidence base. To do that, we went through multiple clinical trials. One was a randomized clinical trial supported by Bristol Myers Squibb Foundation and done in partnership with the VA and Rush University Medical Center in Chicago, which showed that our programs are as clinically effective as face to face care for users with PTSD and Depression. And we delivered those results at less than 1/30th the cost of traditional face to face care. In addition to that, the Agency for Healthcare Research and Quality also independently reviewed and accessed our technology. They gave it the highest evidence rating of "strong".

So thanks to our robust clinical data, and showing that it's effective, and the huge need in the veteran population, the Veterans Health Administration has recognized the power of the model and decided to make it available to all veterans nationwide, and have been delivering on that under contract for two years now.

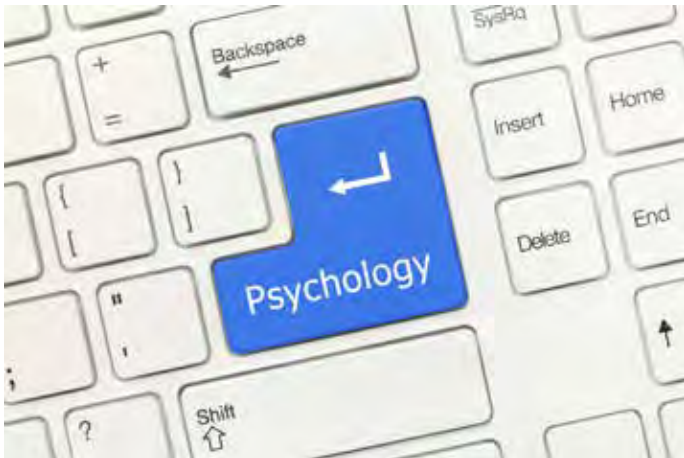
**PULSE:** *How has the clinical community including providers responded to this type of offering?*

**GENGLER:** It's always tough to bring a disruptive new technology into the marketplace, and probably nowhere is that more so than in health field. Many clinicians seemed hesitant or skeptical at first, but that is changing quickly. There are seemingly more and more innovative leaders that see this as the future, like Dr. Thomas Insel, who was the national director at NIMH, who has left for Google, and others along with him who see this as the future, and it's all happening right now. With the evidence base we've put together and the results we've shown delivering the program at scale to tens of thousands of users, we are starting to see a big change in attitude and many want to do what they can to support it or be involved. It also helped us tremendously to make the case with clinicians that the results of our last RCT was accepted for publication in the Journal of Consulting and Clinical Psychology this last August, and so there are more and more clinicians who see this as the future that they want to be part of.

**FOUNG:** There's been clinical support. We licensed our first product out of Stanford. We also have a clinical advisory board of researchers that work at Stanford, Wash U, and Penn State. We're in the third year of a four-year longitudinal \$4 million National Institute of Mental Health grant, of which we've actually deployed a Lantern program to 40 colleges and campuses across the country. So we have a clinical background, and we use the gold standard of a randomized control trials to know whether what we're doing is effective or not.

So to answer your question, it's been very favorable because I think we're using very realistic measuring tools and methods to prove effectiveness. And then on top of that clinical psychology very much believes in cognitive behavioral therapy. The question isn't, "Does it work?". The question is, "Will people use it?"

**PULSE:** *Do you feel online or computerized CBT will eventually be reimbursed by insurance?*



**GENGLER:** There are definitely some different trends that lead us to believe that it could be the case. Senator Schatz from Hawaii is heavily involved in telehealth legislation and has expressed interest in our model, as well as Congressman Murphy from Pennsylvania with the Mental Health Act. It's all about reducing cost at this point, and the trend in health right now has to do with value based re-imburement and controlling costs. Our model is perfect for this environment- it actually allows increased access to evidence based mental health care for a population while at the same time reducing overall cost. Because Mental Health issues are so prevalent, and because there has not been much improvement in this area in the last three decades, there is tremendous opportunity for savings through our model. In fact, the USPSTF recently released new guidance that advised all adults get screened for depression in the primary care setting and be offered CBT based treatment options where applicable. That's a great idea, but the only way it is going to happen given the already short supply of mental health professionals is through programs like ours. And so there is a lot of change going on in this field right, and all trends look like it will be reimbursed very soon.

**FOUNG:** Without a doubt, it will happen. Insurance companies already reimburse for face-to-face CBT. So it's just a matter of time until they reimburse for online CBT. It's not that there's not enough evidence about online CBT to get reimbursement. It's just that no one's practically shown that they can get enough people to utilize it over time that the insurance company should pay for it.

**PULSE:** *How are you approaching barriers to access like stigma and lack of clinicians?*

**FOUNG:** We really think about the three primary barriers to mental health, are access challenges, cost, and there's also stigma on top of all of that.

So I think solving the access issue is -- people don't necessarily have time to drive or sit down for 45 minutes each week. So by having it be mobile delivered is -- it improves the access, obviously. The cost is improved comparative to a pill or therapy.

So how are we solving those issues? I think it's making it more accessible. I think it's making it be more self-guided. And then ultimately, it's delivering a product that feels, to a degree, easy to use and has a point. People can see the payoff and see why it's relevant to them. And so that's a little bit the magic of the product and the content that we provided.

**GENGLER:** That is where the real difficulty is- getting people to follow through and engage with mental health treatment. We call them "reluctant care seekers" and nowhere is that more true than in the veterans population. Most of us know a veteran- they tend to be on the stoic end, and are not lining up to do online mental health programs. If you can get them to do it, you can get anyone to do it, and we've been forced through trial by fire to figure out how to acquire and engage users in our programs. We've become really good at it at this point. There are a variety of things we do to make that happen- people are different and so the strategies you need to use need to be different. One strategy is we use a peer specialist model. People who have gone through our program, once they've graduated some of them want to help other users behind them, and then there's a training program for them to become peers themselves to do just that. There's a lot of research showing that if you go back, you help others that have had similar issues as you, that that also helps you recover and helps you become healthier. You can think of it almost the next generation of AA Online. And so because of that, and since we reward them, that as the coaches go through it helps to engage them.

On the peer front, we've been recently speaking with a few different colleges and schools who are very interested to have this as part of their service learning, which is also a big trend in universities and colleges now. And so as part of their academic curriculum, this could potentially down the road help them with practicum hours or service learning.

It's really exciting. It's a way to get past this challenge of not having enough clinicians and then having it in a scalable manner that people can do it whenever and wherever they need to.

**PULSE:** *How are you using technology to improve monitoring and measurement of patient experience and clinical effectiveness?*

**GENGLER:** Our model is data-driven completely. We use, the PHQ9, the CSD, and other clinical measures as part of our assessment at the very beginning. So that provides a baseline measure of what the person is at that time. And then as they go throughout the program, we measure them again to continue to show their clinical progress.

With the Veterans Health Administration, we provide them with a monthly report with clinical progress and usage and engagement throughout the program. The average usage time for our users is about eight to ten weeks. And over that time, they progress quite a bit clinically. We do have some users who have used it for a year and a half and continue to see value in it. That's one side of it.



Also with AHRQ, when they reviewed us, they had 96 percent of the people who went through it would recommend the program to their friends. And so it's something that not only are they clinically getting better, they are also enjoying it and want to share it with their friends.

Also we have a provider or an administrator dashboard. So from a population health perspective, you can look across your population, whether it's a thousand, fifty thousand, however many people it is, and see what the clinical status is of them and then help to dedicate resources where you need them to be.

**FOUNG:** What Lantern is able to do because it's modular in nature and it's over the app is we're actually able to collect measures. One way is that every check-in you do, it's a self-reported 1 through 10 score of how I'm doing against an item that I'm working on, anxiety, stress, et cetera. We take measurements of where you were, how you were feeling before and after individual techniques. We have an understanding of which techniques are effective for you and for a greater population of people like you.

We're also using evidence-based measures, whether it's a G87 or PHQ9, measurements for mood and anxiety. We'll do standard measures before people start their program, and then after they complete it so that we can have a benchmark against academic literature and what you'd expect for face-to-face CBT and online CBT.

So we do all of those things because ultimately you have to know. We believe you have to know if you're being effective in a quantitative way, if ultimately you're going to have success.

**PULSE:** *What are the greatest challenges you see ahead for your company?*

**FOUNG:** The state of healthcare in the United States is actually rapidly changing. Well, it is changing -- I'll say this. It's changing faster than it has in a long time. And so ultimately the question is, from a company that offers digital tools to fit within what is not a digital ecosystem, is the pace of change

fast enough such that you can meet a need when the entire system is ready for it?

How well can you fit your new idea or new product or new technology into what ultimately is a pretty slow-moving, complex system? The challenge is not necessarily getting the evidence or building a product that people like to use -- the real challenge is, can you make it fit with the byzantine, crazy ecosystem that is United States healthcare? And if you cannot, you will not be a successful company. If you can, you potentially could be a very, very successful company.

**GENGLER:** There's definitely a lot of reluctance to change and to do something new. And so you need a great track record of getting users to do it in the real world and driving outcomes. You also need a very strong evidence base, which we have. There is a lot of money at stake, and so all the decision makers are part of big bureaucratic organizations, who you have to convince to try something new and potentially risky. These are large systems and plans that we're speaking with, and they have a lot going on and there is a lot of noise out there. So to have new programs implemented, it's an enormous challenge because there are so many apps starting now and so many health technology companies starting, and many of them don't have as robust clinical base, so it's really watered down the entire marketplace and made it tough for decision makers to sort through and determine what is valuable and useful and what is not.

**PULSE:** *So what have been the key success factors that have supported entry into this space?*

**GENGLER:** All these factors are coming together, yet the industry is reluctant to change, but with 18 percent of our GDP now on healthcare, and premiums going up 30, 40 percent year over year, something has to change. We are extremely confident that technology that is proven in clinical trials to provide clinically equivalent care for one thirtieth the cost -- that this has enormous opportunity. It's just a matter of patience while all these factors come together -- it's really a right place at a right time situation.

**FOUNG:** It's staying true to what you're telling people you do so that you're not saying something but then doing another. I think that's important. I think ultimately you can put things on a continuum as far as all the digital solutions. There's software- only solutions, and then there's people-only solutions. And ultimately, there's going to be a lot of different methods that are successful because there are lots of different types of people out there, meaning you could have an individual who gets a diagnosis of clinical anxiety, and they're not going to perform against any digital tool, not Lantern's, not anything. But they respond really well in person. You could have a person who would take the PHQ9 and get the same exact score. And they could perform really poorly with face-to-face therapy, but they'd respond very well to a digital or a remote coach supported tool comparative to Lantern.

So I think ultimately the companies that will have the most success will be very clear about what their product is. And it works well with the existing ecosystem.

## Profile

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Richard Gengler grew up in Madison, WI and graduated with honors from the University of Minnesota, Carlson School of Management, with a degree in Accounting. Following college, he joined the US Navy flight program and was designated a Naval Aviator and selected to fly the F/A 18 Hornet. Over his nine and a half years of service, Mr. Gengler participated extensively in various assignments in support of the Global War on Terror, many in leadership positions. During his two tours aboard the aircraft carrier USS Constellation, he flew numerous combat missions as part of Operation Iraqi Freedom and earned an Air Medal for his distinguished service.

Mr. Gengler left the Navy as a Lieutenant Commander and enrolled in the MBA program at the University of Chicago, Booth School of Business. While earning his degree with a concentration in Entrepreneurship, he founded Prevail Health Solutions with the goal of helping address the surge in military mental health issues that have accompanied the Global War on Terror.

Prevail Health Solutions' core technology was built in partnership with the National Science Foundation, and Prevail worked under a series of grants to build, test and deliver the Vets Prevail program, a scalable online program that uses technology to deliver evidence-based mental health in a cost effective way.

Today, Vets Prevail is delivered nationally in partnership with the VA, and touches 10,000-15,000 veterans each and every month. The flexible model also has direct and practical application in the civilian mental health space through Prevail's iPrevail program, where the issues of reluctance to seek care and low accessibility generate enormous social costs.

Richard lives in Chicago with his wife Carrie, daughter Autumn and son Ethan, and is a lifetime member of the Martin Baker Ejection Tie Club.



Alejandro Foug is co-founder and CEO of Lantern, an online and personalized service that allows anyone to strengthen their emotional well-being with the care and support of a professional health coach. Lantern focuses on helping individuals and employees manage stress, reduce anxiety, and improve mood which is now currently being used by thousands of users in over 80 countries.

Lantern is on a mission to expand access to high-quality, evidence-based care that helps you strengthen your emotional well-being at an affordable price. Prior to founding Lantern, Mr. Foug was an early employee at consumer technology companies like eBay, NexTag, Trulia, and Huddler. Alejandro has a B.A. in Psychology from Stanford University.

# Changing Business Models in Health Technology:

*An interview with Dr. John Glaser SVP,  
Cerner Corporation; Ex-CEO, Siemens Health Services*

**By Animesh Agarwal**

New healthcare technology companies are sprouting every day. Few of them might eventually succeed. We spoke to Senior Vice President at Cerner Corporation, Dr. John Glaser, to get his take on how new entrants are differentiating themselves to gather attention in the already overcrowded healthcare technology arena and how incumbents are reacting to them.

**PULSE:** *What are the big technologies in the digital health space that you are excited about?*

**DR. JOHN GLASER:** We are in the early stages of a very profound change in healthcare business models. Changes that result from going from reactive sick care to proactive management of health and wellness; from care that focuses on a particular area of care like pediatric care or cancer care to care across the continuum; and from reimbursement that rewards volume to reimbursement that rewards efficiency and quality. These are significant business model changes.

Anytime you have business model changes that are that significant, you see IT innovations contribute across the board. There are many areas where digital technologies will prove quite useful and contribute to improving outcomes. I can give you several examples.

One is in the area of electronic health records (EHR). After implementing EHR systems, it becomes the goal to use them to optimize care. A second area, which goes with the first, centers on improving interoperability. There is lot of emphasis on improving the exchange of data, not only between providers but between providers and patients and providers and public health services. A third area is composed of technologies that are designed to help us manage the health of a population, examples include disease registries and care coordination technologies. A fourth area that is getting a lot of attention is consumers using technologies to manage their own health. These uses range from Fitbits to technologies to measure blood sugar levels to applications that perform gait analysis. A final area, which is about to take off in a very big way, is telehealth. Telehealth has many different use cases within it, including remote monitoring, semi-urgent care guidance and clinician to clinician consultation.

**PULSE:** *It is interesting you mentioned technologies which allow consumers to manage their own health. What really is driving this space - is it innovation in new sensor technology or is it new algorithms and analytics tools or is it a new emerging trend in how physicians and providers are integrating this data in their care delivery methods?*

**DR. GLASER:** There are some complex dynamics at play. If you look at what percentage of the US population uses Fitbit-like technologies, it is small. When we look at the evidence of the impact of these technologies on improving chronic disease management the results are mixed. So there is still a fair amount to learn about how best to optimize the contribution of these technologies for an individual's health.

Clearly there have been advances in sensor technology, both in terms of what can be measured and the accuracy of measurements. But I believe that the main advances have been in the analytics. And not just in analyzing the data from a particular sensor but combining the data from a multitude of sensors with data from the EHR and the inclusion of environmental parameters.

The combination of these diverse types of data can be used to come to a "context-aware" conclusion. As an example, let's say you have sensors attached to an elderly male which indicate that his heart rate is up, his blood pressure is up, and based on the chemical composition of his sweat, he is dehydrated. You combine this data with the information from his EHR and you see that he also has a history of cardiovascular disease and is quite frail. You also combine this with data from sensors in the environment which report it is a hot and humid day. So you immediately know that this person is at risk. You know the risk because of that combination of sensor data, patient history and environmental parameters. If, on the other hand, instead of

being an 84 year old man this was a 24 year old man you may not be as worried.

While there is enormous potential with technological advances we often have not yet figured out how to combine the technology with other things that we do to improve health and wellness. Sometimes, the right way to help a diabetic, if they are poor, is to get them a ride to their doctor's office or help them with their copay for their medications. Or if they are not a native English speaker, to help them with language or to tailor interventions to more appropriately fit their culture. It won't be just technology that will help manage health, but technology combined with other things to provide a comprehensive package.

**PULSE:** *How do you see physicians responding to these developments in technology? What can be done get physicians to more readily embrace new technologies?*

**DR. GLASER:** Physicians sometimes find that their experience with health information technology is not all that pleasant. Take the example of EHRs - sometimes physicians feel that it is taking too much of their time and sometimes they look at all this data coming from the sensors and health information exchanges and they feel overwhelmed. Sometimes they have decision support systems which are way too sensitive. And these are all legitimate concerns.

There is work to be done in building analytics that can look at all the data that can come to them and filter it down to the two or three pieces that the physicians really need to pay attention to.

Physicians are no different than anyone else. They will embrace technology that helps them do a better job and saves them time.

*"The Physicians sometimes find that their experience health information technology is not all that pleasant. Take the example of EHRs. Sometimes they feel that it is taking too much of their time... These are legitimate concerns. Physicians are no different than anyone else. They will embrace technology that helps them do a better job and saves them time"*

*“I expect to see a fair amount of acquisitions in this space by all players. Sometimes acquisitions are directed to broadening a portfolio... For example, a large EHR vendor may see that their customers are beginning to take on features a health plan so they might want to acquire a mature company that does health plan technology.”*

**PULSE:** *How do you see incumbents reacting to new entrants?*

**DR. GLASER:** There are different kinds of incumbents. There are the EHR players whose customers are trying to become Accountable Care Organizations. These players are strong at providing certain products and services - like EHRs across the continuum, the revenue cycle across the continuum, analytics that help providers look at cost and quality and set pricing for various capitated and bundled contracts, and population health management technologies.

Another set of players are the health plans trying to improve member engagement and manage care costs and quality. These players are looking to be more consumer oriented and

more focused on partnership with providers in new risk-sharing models. There are also the life sciences companies, particularly the big pharma companies, trying to ensure that their medications are used more appropriately and effectively.

All of these big players are trying to reach out to the consumers and engage the patients. And all of these players are trying to improve the appropriateness of care.

I expect to see a fair amount of acquisitions in this space by all players. Larger organizations can't always innovate. Sometime smaller companies are more nimble. We will see acquisitions devoted to innovation - bringing in innovative ideas that are occurring at the edge in to areas that the major players are not currently investing or dominating. Sometimes acquisitions are related to increasing scale or footprint (like increasing the customer base). Sometimes acquisitions are directed to broadening a portfolio. For example, a large EHR vendor may see that their customers are beginning to take on features a health plan so they might want to acquire a mature company that does health plan technology.

Regardless, the significant changes in healthcare business models presents many opportunities for incumbents and entrants.



## Profile

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John Glaser, PhD, Senior Vice President, client population health and global strategies, is responsible for driving Cerner's population health technology and product strategies, interoperability, and government policy development. Glaser has devoted his career to advancing health care through innovation, and is committed to helping clients maximize their investment in health care information technology.

Previously, Glaser was CEO of Siemens Health Services, a company acquired by Cerner in February 2015. Prior to that, Glaser was Vice President and Chief Information Officer at Partners HealthCare. He also previously served as Vice President of information systems at Brigham and Women's Hospital.

Glaser was the Founding Chair of the College of Healthcare Information Management Executives (CHIME) and the former President of the Healthcare Information and Management Systems Society (HIMSS). He's served on numerous boards including the eHealth Initiative, the American Telemedicine Association (ATA) and the American Medical Informatics Association (AMIA).

Additionally, Glaser is a fellow of CHIME, HIMSS and the American College of Medical Informatics. He also is a former Senior Advisor to the Office of the National Coordinator for Health Information Technology (ONC).

Glaser has published more than 200 articles and three books on the strategic application of IT in health care, including the most widely used textbook on the topic, *Healthcare Information Systems: A Practical Approach for Health Care Management*.

Glaser is on the faculty of the Wharton School at the University of Pennsylvania, the Medical University of South Carolina, the School of Biomedical Informatics at the Texas Health Science Center and the Harvard School of Public Health. He received his Ph.D. in health care information systems from the University of Minnesota.

# Building A Community of Entrepreneurs

*A Conversation with Blueprint Health*

**By Dr. Shubhra Jain**

Last few years have seen a lot of start-up activity in Healthcare and numerous incubators/ accelerators and co-working spaces have cropped up to foster these entrepreneurial initiatives. We spoke with David Friedman, Director of Community at Blueprint Health, one of the most popular healthcare start-up accelerators in New York.

**PULSE:** *What steps do you take to sustain collaboration between past classes of start-ups?*

**DAVID FRIEDMAN:** As a community, we continuously strive to cultivate an awareness and appreciation for one another - the varied ventures, personalities and interests that are a part of Blueprint Health family. But what is termed “collaboration” is rarely ever just one thing. The needs and priorities are ever-evolving for a startup, and it is only by having a very hands-on approach that you can better facilitate the growth of these ventures. You will find the cohorts from prior classes involved intimately with our newest class members, providing them with guidance and the insights. And all our members, past and present, of our workspace form very close personal bonds that continue professionally and personally.

The nature of startups, and more specifically entrepreneurs is to wake each morning facing what others perceive as insurmountable challenges, and not go to bed until those have been conquered. The camaraderie that evolves is unsurpassed, and the reliance we place on one another to succeed grows organically.

**PULSE:** *What strategies have been successful in attracting investors for early stage concepts?*

**FRIEDMAN:** Ultimately, for any startup it boils down to two goals, and these are not mutually exclusive - customers and capital. Any startup that has customers, and let’s be clear that is paying customers, is more likely to attract investment. In healthcare, those customers can be formidable. These are large complex organizations that can be difficult, if not impossible for a startup to navigate on their very own. If a venture can attract customers, it certainly shows there is a market for their product and provides investors with a certain validation of the business. At the same time, it can obviously be quite difficult to get that first customer without the early-stage capital in a market where the sales cycle can be prolonged. There are enough articles that talk to best practices in attracting investors for early-stage startups. Investors are looking to mitigate risks, and the backing of Blueprint Health lends credibility and value to help a startup attract customers and capital that build a long-term viable business.

**PULSE:** *What are some of the most common mistakes that lead start-ups to fail in this space?*

**FRIEDMAN:** After 20+ years working with innovators and startups, I have come to realize there is no recipe for success. There are plenty of articles and advice on what mistakes to avoid, but still even if you avoid them all, there are so many variables that come to play in what we call “success” and even that is not easily defined. I don’t like to call anything a success or failure, these are people that are putting their sweat blood and tears into their ventures and the fact that they come in to tackle each day with the vigor and passion we see on their faces is itself the greatest testimony to their amazing character. That is what I personally respect above all.

**PULSE:** *What do you believe are the white space opportunities for entrepreneurial initiatives in Health IT?*

**FRIEDMAN:** There is one area, one market I see almost completely neglected and that is the aged. While much of that may simply be due to my advanced age, having to face the inevitability of joining this group shortly and not wanting to feel disadvantaged, I do believe that the entrepreneurs of today are missing out on enormous reward with this particular demographic. Being the fastest growing market,

the most affluent and increasingly more technologically adept than they are often credited with makes them very, very attractive. And remember, the “health” issues that emerge as we age become increasingly more profound and costly. The problem is that when you are a 28-year-old entrepreneurs, you don’t think of Grandma and Grandpa as a relatable customer. I would love to see us running hackathons led by 50+-year-olds exclusively this coming year.

**PULSE:** *The theme for our conference is The Innovation Game: The Race between Entrants and Incumbents. As one of the earliest startup incubators in New York, what are your thoughts about how new entrants are innovating this space?*

**FRIEDMAN:** I would say that as time passes and more and more startups are entering the healthcare market, it becomes increasingly more difficult to gain the ear of the entrenched incumbents. There is a lot of noise, and time will show those ventures that are formidable enough to survive and thrive.

## Profile



David Friedman is currently Director of Community at Blueprint Health and Founder of The Farm, where he is involved with accelerating the growth of digital health startups in New York City. With over 25 years’ experience delivering innovations with startups and large multi-national organizations alike, he joined Blueprint Health where he turned his focus on creating a more engaged community throughout the healthcare arena.



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{GROUNDBREAKING MEDICINES}



**COLLABORATE**  
{AT EVERY LEVEL}



**TRANSFORM**  
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Spotlight:  
U.S. and China

# Innovation and New Models for America's Largest Payor

*An interview with Charlene Frizzera, President of CF Health Advisors and former Acting Administrator and COO for the centers for Medicare & Medical Services (CMS).*

**By Karen Au Yeung**

All stakeholders in the US healthcare system are keeping a close eye on the wave of changes that CMS, the largest payor in America, is rolling out to the Medicare and Medicaid programs. We spoke with Charlene Frizzera, President of CF Health Advisors and former Acting Administrator and Chief Operating Officer for CMS to get her take on where these two programs might be heading and how innovation will play a role.

**PULSE:** *The title for our conference this year is “The Innovation Game”. How do you think the Medicare and Medicaid programs are evolving and where are you seeing innovation?*

**CHARLENE FRIZZERA:** If you look at the healthcare delivery system – the fee-for-service system, historically, it has always been a volume-based payment system where the more services you provide, the more money you get paid. CMS has been fairly clear that they want to move away from that system but it's also not possible to entirely get rid of it. While the system is not necessarily completely going away, it is significantly changing and the number of providers that would want to use that system will decrease.

What CMS is already doing is making the fee-for-service model less attractive by putting a lot of risk into the fee-for-service model. For example, hospital reimbursements are now tied to

hospital readmissions, hospital-acquired infections, quality measures and value-based payments. All of these make the fee-for-service system less attractive. Many providers are taking a look at that and realizing that it's not the cash-cow that it used to be and that there are a lot of behaviors that have to change in order for them to continue to make money and provide healthcare in the future. This is a constant message that CMS continues to put out in their regulations, directly and indirectly, and the way they are changing their reimbursements.

Managed care is not a mandatory program – at any point in time, providers and beneficiaries can opt out and the program won't exist, unlike fee-for-service which is not voluntary. So while there is a Managed Care model, which is used by 30-40% of the Medicare beneficiaries, CMS now allows providers to come up with alternative payment models, such as the Accountable Care Organization (ACO). There are also

other models, such as health home models, independent home care. This results in a variety of alternatives that are all voluntary and give the industry a lot of opportunity to figure out how to deliver health care that is based on risk and value. Most providers in the past haven't paid much attention to these alternative models but as fee-for-service is becoming less attractive and CMS is putting more pressure on managed care plans, providers are now considering the alternative payments systems.

**PULSE:** *Are we seeing a significant shift to and adoption of these alternative payment models and do you anticipate that the majority of beneficiaries and providers will still stay in either the fee-for-service or managed care models at least in the near-term?*

**FRIZZERA:** If you look at numbers of beneficiaries and providers in the fee-for-service space versus the number in the managed care space, you are definitely seeing a movement towards managed care. A lot of that has to do with beneficiary-choice. We're finding that baby-boomers are more comfortable with the managed care plans so when they age into the Medicare program, they tend to pick those over fee-for-service. Secondly, as more providers who have stature join plans, the more comfortable people are with joining them. Maryland is a great example. When John Hopkins joined a managed care plan, suddenly people were interested in that plan.

Now let's take a look at alternative payment systems – let's take ACO, for example. When we look at ACOs, I don't think we're seeing a lot of providers rushing to be part of ACOs, but there are many discussions going on and many potential partnerships happening that will make ACOs grow.

What's important about the ACOs is that we need to look at the Pioneer ACOs models and the next-generation ACOs –

they're very different models. For example, the latest ACO model allows post-acute care providers to be part of an ACO. Post-acute care providers were not allowed to participate in the Pioneer ACO model or any models in between. That is a big message. ACOs are now responsible for the hospital care and for 30-days post-discharge care. Skilled nursing facilities are trying to figure out how to be a part of this new delivery system. They don't want their competitors to be part of an ACO and be left behind.

While we're not seeing a giant movement yet, there are a lot of discussions around what the alternative payment models might look like and how providers and beneficiaries can find them more attractive especially as the fee-for-service model will continue to build in more risk and quality measures. The ACO model encourages providers and beneficiaries to come together to improve health outcomes.

**PULSE:** *Uncertainty around the sustainability of Medicare and Medicaid has been a topic of debate for a long time. With the proposed Medicare value-based reimbursement model, do you think we are finally on the cusp of a substantial and meaningful change to the way healthcare will be paid for?*

**FRIZZERA:** CMS has already regulated value-based purchasing across providers. The question is how aggressive CMS will

continue to be to implement a patient-centered healthcare delivery system. While there has been a lot of value-based purchasing requirements, the term "value" hasn't been specifically defined. Ultimate value will be better health outcomes for patients but that's harder to quantify than measures that are more process-driven. As the data collected continues to move toward outcome data, the measures will also move toward health outcomes across providers.

We have conversations with hospitals and health systems all

*CMS is making the fee-for-service model less attractive by putting a lot of risk into the fee-for-service model. This is a constant message that CMS continues to put out in their regulations."*

the time about the data they need to start collecting given that they know that the value-based purchasing requirements will increase significantly over time to be health outcome measures and more patient-centered.

That encourages providers to figure out how they need to work better together over the continuum of care for a patient. That's what you see CMS moving towards in a lot of the CMMI demos or in actual regulations. They want stakeholders to voluntarily figure out what will work. As the CMMI models mature and the evaluations show the models improve health care, CMS has the authority to make significant changes through regulation

For example, the readmission penalty in hospitals requires hospitals to work with post-acute care providers. If the care in post-acute care provider setting results in a readmission, the hospital, and potentially the post-acute care provider could be subject to a readmission penalty.

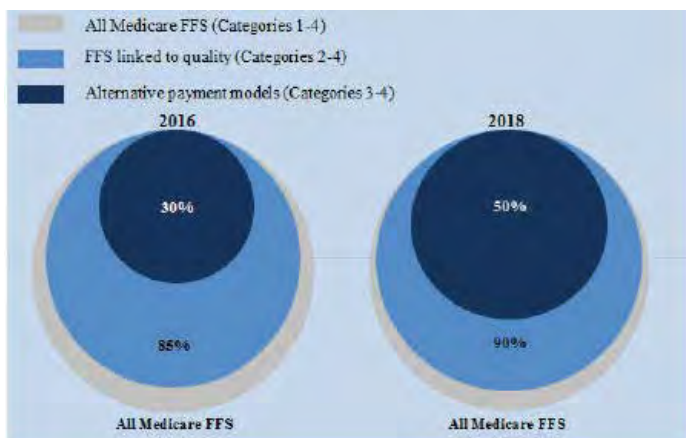


Figure 1: Target percentage of Medicare FFS payments linked to quality and alternative payment models in 2016 and 2018

**PULSE:** *What do you think that means for healthcare costs?*

**FRIZZERA:** In order for healthcare costs to really be reduced, beneficiaries have to change behavior. Providers, regulations, and the government can only do so much; beneficiaries also need to do a better job of taking better care of themselves.

It's a challenge because CMS can't regulate beneficiary behavior – you have to cover them and pay for their services regardless of their health behaviors. It's a longer-term goal

but I think they're very optimistic that they will be able to continue to make some rule-changes and value-based purchasing measure changes that will encourage providers, through penalties and rewards, to be more active advocates and educators for beneficiary engagement.

**PULSE:** *Our theme for the conference centers on who will be most effective in bringing about the necessary changes in health care, either incumbents (existing, large players) or entrants (newcomers to industry). How does CMS think about this? Do you believe they are encouraging new entrants into the market or are they hoping that incumbents will successfully innovate and drive the change?*

**FRIZZERA:** I don't think the CMS favors incumbents over new entrants or vice versa. I think what they will care about is who can provide the best quality healthcare to beneficiaries.

We have seen a lot of interest in starting a brand-new Medicare Advantage plan in Florida. It's interesting working with new plans and comparing them with what some of the incumbent Medicare / Medicaid plans do. They have the potential to deliver healthcare very differently from the incumbents.

What we're finding is that the new entrants could have advantages in terms of designing delivery systems that cater to their patients and to their providers. Providers in these networks are very interested in new ways of doing business – they're much more engaged in telemedicine, they're much more engaged in innovative ways to deal with patients and in incorporating socioeconomics and home assessments needs into the healthcare plans of the patient.

There is some general agreement that new plans have some advantage over the existing plans because they get to start from scratch. The hard part, for new plans, is attaining the financial support they need to get started. CMS would be interested in seeing new entrants come in who could do a better job, but they would also love to see incumbents do a better job. Again, they leave it up to the industry to see if they can do it themselves.



**PULSE:** *CMS just revealed the draft Quality Measurement Development Plan (MDP) for physicians within which they are proposing value as measured based on four components: quality, resource use, clinical practice improvement activities and meaningful use of certified EHR technologies. What do you will be the key challenges in implementing this plan?*

**FRIZZERA:** This plan replaces the old physician payment system that everybody agreed didn't work and everyone is excited that there is a new system for paying physicians.

The new rule laid out two payment methodologies: the merit-based incentive system and the alternative payment model. In the new legislation, physicians have choices: they can stick with the mandated merit-based payment program or they can choose to participate in the alternative payment model.

CMS started the Physician Quality Reporting System almost a decade ago. These new metrics aren't news to the physician community. The new model will look at the current PQRS measures and see how they "connect" to the other four categories.

That is what the new quality measurement plan is supposed to do – figure out how to take those things that today are separated but important and combine them together. This will be important if we want to get to either a good quality-based measure for the merit-based system and / or good alternative payment model.

In the alternative payment model, there is more opportunity for the physician community to help CMS design what the future quality measures will be.

**PULSE:** *Patient experience is a large focus of the new plan; however, measuring patient experience is not new. What do you think the key changes or innovation will be?*

**FRIZZERA:** Patient engagement is already being measured. It is a big component of the star ratings for the Medicare Advantage plan. In FFS, hospitals have the CAHPS (Consumer

Assessment of Healthcare Providers and Systems) survey – that's all about patient experience and satisfaction. What will be new is how to engage patients differently and how to improve their experience.

Tracking it is not new but where there is going to be a lot of activity is how to make the experience better. CMS is really getting into the meat of what makes a positive patient experience. How do we make it more than just "having a soft pillow". These measures need to identify what is needed to improve patients' health outcomes.

There are plenty of studies that confirm that poor doctors receive very positive ratings from patients because they are nice to them. While that's important and we need to measure that, we also need to figure out what aspect of patient experience also contributes positively to better health outcomes.



**PULSE:** *What role do you think innovation and new technologies can play in helping improve the patient experience?*

**FRIZZERA:** Technology either exists today or will be developed when a problem is identified. It's not designing the technology that's a concern, it's designing useable technology. Successful use requires both the provider and the patient to be comfortable with the new technology.

A good example is a telemedicine company we work with that works with physicians' offices for follow-up consultation

visits. For those patients, this company sets up the technology for the video conference, they do all of the billing, they do all of the patient follow-up, they do all of the scheduling.

This company's rate of growth has been fairly significant in the past year. For patients who like using this type of technology, they love it. Physicians also love it because it saves them a lot of money and a lot of time. They don't have to physically be in the office, they don't have to schedule time, and their waiting rooms aren't packed with people.

People wouldn't really define that in the traditional patient engagement space, but that is patient engagement. This is a pretty new system for beneficiaries and the physicians and the office staff. While this company is operating in a small space for now, this technology can be applied in a lot of spaces.

**PULSE:** *How do you think we can use innovation and technology to promote long-term patient engagement over an extended period of time versus just during a period of care?*

**FRIZZERA:** It's hard but it's happening. Patients and providers need to change together.

For example, CMS released a new joint replacement bundle payment model that is also tied to quality measures. When we discussed this with an orthopaedic surgeon physician group, the group was divided regarding the feasibility of making this model work.

The providers who embraced this new system have changed their business model. Now they make their patients meet certain criteria before they will conduct the surgery. For example, they require patients to have a BMI of less than a certain number, etc. Patients have to take more responsibility in their pre-operative condition.

This has been successful. These physicians took a risk that their patients will go somewhere else, but that's not what's happening. They are making a big difference in patient behavior.

These physicians take the time to ensure their patients understand their surgeries will not be successful unless they meet these criteria. These physicians realize that they need to do things differently and they need to get beneficiaries healthier or else they're not going to have successful outcomes and could lead to less reimbursement. Patients that understand the effect of "unhealthy" behaviors in the pre-op environment tend to continue the healthy behaviors post-op as well. When the providers' actions and words are consistent and constant, it's pretty impactful.

Another big thing that people are counting on is that the generation moving into the Medicare program, now and in the future, will have a different attitude towards their health. We are seeing that baby boomers want to be healthier – they want their delivery system to be very different than what their parents' had been.

**PULSE:** *The CMS has created a relatively new Innovation Center – the Center for Medicare & Medicaid Innovation (CMMI). What is the mission of this Innovation Center and generally, how does CMS engage in innovation?*

**FRIZZERA:** The Innovation Center was provided \$10BN to generate innovation in the healthcare system and the Medicare / Medicaid programs over 10 years. CMS has awarded grants for a variety of innovation models – from patient engagement to payment models.









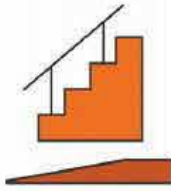










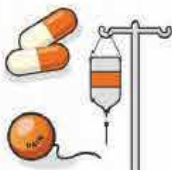










It started with patient engagement models (e.g., how do you talk to beneficiaries) to more aggressive innovation models regarding bundled payment initiative.

Those innovations are very important. My advice is to look at what those innovations are and the areas that CMS puts money into studying, and be aware that they have the ability to make those become regulation without any law changes. There's a huge incentive for providers to look at those and think about what is happening because some of those innovations will become incorporated into the program.

# DAILY GOALS

## for a Safe Discharge after Knee Replacement

Please note that this care plan MAY be modified for you, depending on the condition of your health and your ability to perform these activities. These are general guidelines.

	Day of Surgery	Day 1 (Post-Op)	Day 2 (Post-Op)	Day 3 (Post-Op)	Day of Discharge
<b>Diet</b>	 <p>Clear liquids or small meal as tolerated</p>	 <p>Begin food and drink up in Chair</p>	 <p>Meals up in chair</p>	 <p>Same as Day 2</p>	 <p>Sensible diet to promote healing and good health</p>
<b>Activity</b>	 <p>You will need rest. To prevent falling, please ask for help if you need to get out of bed.</p>	 <p>Walk a minimum of 25 - 50 feet with walker</p>	 <p>Walk a minimum of 100 - 150 feet with walker</p>	 <p>Walk a minimum of 150 - 200 feet with walker and practice using stairs and ramps</p>	 <p>Home with Home Health or Outpatient Physical Therapy</p>
<b>Treatment</b>	<p>Work to increase bending (Flexion) by 10 degrees per day (using CPM machine)</p> <p>Work to get knee fully straight (extended) using the extension block at night and not while in CPM</p>   <p>Extension Block to straighten knee</p>	 <p>Increase Flexion 10 degrees in CPM</p>  <p>Extension Block to straighten knee</p>	 <p>Increase Flexion 10 degrees in CPM</p>  <p>Extension Block to straighten knee</p>	 <p>Achieve minimum 70 - 90 degrees of Flexion</p>  <p>Extension Block to straighten knee</p>	
<b>Pain Medication Regimen</b>	 <p>Pain ball, PCA IV, and/or pills for pain control</p>	 <p>Use pain ball, IV and/or pills for pain control</p>	 <p>Pain ball &amp; IV removed, pills only, as needed, for pain control</p>	 <p>Same as Day 2</p>	 <p>As prescribed by MD</p>
<b>Discharge Planning &amp; Instruction</b>	<p>Begins on the day of surgery and you will be educated and informed on all of these categories throughout your stay at BHS</p>  <p>Discharge Plan discussed with patient &amp; family and conveyed to Joint Club Team</p>	 <p>Use walker as directed, for up to six (6) weeks</p>	 <p>Driving precautions &amp; restrictions</p>	 <p>Exercises and use CPM/Extension Block as directed</p>	 <p>Home safety, fall prevention, &amp; ADL training</p>
			 <p>Home medication education</p>	 <p>Blood Clot Prevention</p>	

## Profile

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**Charlene Frizzera**

*President of CF Health Advisors and former Acting Administrator and Chief Operating Officer for CMS*

Charlene Frizzera is the president of CF Health Advisors, a firm that advises corporate, government, and nonprofit organizations on Medicaid, Medicare, and health care reform issues. Formerly, Frizzera was the Acting Administrator for the Centers for Medicare and Medicaid Services (CMS), where she was responsible for leading the policy and operational aspects of CMS while executing the design and implementation plan for the Affordable Care Act.

Ms. Frizzera's CMS career includes positions as Chief Operating Officer, Deputy Chief Operating Officer, Deputy Director for the Center of Medicaid & State Operations. Through the years Ms. Frizzera led the integration of the agency's programs and policies across components and leading all operational aspects of CMS including budget, information technology and systems, human resources, contracting, administration, and program integrity. She was also able to modernize the information technology infrastructure in CMS, and design and implement an aggressive program for reducing fraud, waste and abuse. During her tenure at CMS, she received two Presidential Rank Awards for outstanding leadership.

Frizzera also serves as a member of the Future Panel and as a Senior Advisor for Leavitt Partners. In addition, she serves on several boards.

# Future of Imaging Diagnostic Center in China

*An interview with Lu Bei Hong, Business Development Manager at Zhuhai Honkai Medical Instrument Company, Ltd.*

**By Jungha Yi**

With Chinese government loosening restrictions in opening independent imaging diagnostic centers in the first half of 2015, many investors are foreseeing the growth of this niche industry. We spoke with Mr. Lu Bei Hong, Business Development Manager from Zhuhai Honkai Medical Instrument Co. Ltd. to get his opinion on the future development of imaging diagnostic centers in China.

**PULSE:** *How regulated was the imaging diagnostic center industry in China historically, and what changes did the government implement in 2015?*

**MR. LU BEI HONG:** As you may be aware, Ministry of Health (MoH) in China restricts the number of large imaging equipment purchases that can be made by hospitals under its management. This policy was designed to limit corruption in the transactions. However, limiting the number of equipment purchases has peaked the utilization ratio of imaging equipment in the top hospitals in China. Noticing this imbalance in supply and demand the MoH loosened the tightly controlled policy regarding the establishment of imaging diagnostic centers.

**PULSE:** *I see, what are the measures taken? Could you please share examples?*

**MR. LU BEI HONG:** Sure, the first province to open up is Jiangxi province. Jiangxi MoH has approved the establishment of three diagnostic centers in the first half of 2015. Of course, the government has set the detailed requirement as to the minimum number of each modalities and the number of imaging specialists to operate the machines. I expect this trend will be replicated in other provinces once central MoH sees the successful operation in Jiangxi.

**PULSE:** *How big is China's imaging diagnostic market and how big can it grow further?*

**MR. LU BEI HONG:** Before I talk about China, let me first talk a little bit about the U.S. market, which is considered the most developed market in the world for imaging diagnostic sector. According to Frost & Sullivan, the imaging diagnostic market in the U.S. has reached \$100BN as of 2015, with 40% of the diagnostics are conducted in independent diagnostic center



and 60% conducted in the hospital. Independent centers have good reputation on good quality of service with relatively low price.

There are two leading firms in the U.S.: RadNet and Alliance Health Services. RadNet owns 297 imaging centers across the U.S. and has generated US \$670mn. RadNet covers full range of diagnostic services including X-ray, ultrasound, MRI and CT. The low priced services such as X-ray and ultrasound takes up to 50% of diagnostic volume but only contributes to 20% of the revenue. High-price services such as MR and CT contributes to only 20% of the volume but more than half of the revenue thanks to high scanning price. What's interesting about the growth trajectory of U.S. companies is that they have grown inorganically by acquiring smaller independent diagnostic centers. Every year they acquire new centers equivalent to 10% of the number of existing centers.

Switching gears to China, China's imaging diagnostic market has achieved rapid growth in the past decade, reaching 20% CAGR and currently valued at RMB 200BN (US\$ 30BN). However, I'll remind you that this figure does not include the service and maintenance part of the business, so the market size should actually be bigger.

You can also derive the market size by estimating from economics of hospitals. Different from U.S. hospital's revenue stream, the main stream of Chinese hospitals' revenue is derived from sales of medicines and only 10% from diagnostic services. The total hospital market in China is about 2 Trillion RMB, and 10% of this market comes to RMB 200BN.

**PULSE:** *In what aspects can independent imaging diagnostic centers operate successfully and differentiate from competitors?*

**MR. LU BEI HONG:** Imaging centers in different locations need to apply very different strategies in order to be successful. Strategies to be applied in the first tier cities are totally different from that of third or fourth tier cities.

The main reason for this difference arises from the base of the competitors. For example, in the first tier cities, imaging diagnostic centers face competition from the top A-graded hospitals in China. They are formidable competitors in terms of service quality and reputation, so imaging centers need to offer competitive pricing in order to stay in the market. For the ones in the 3rd or 4th tier cities, the imaging centers are more playing a role in filling the unmet demand gap. Thus they can position differently from the ones in 1st tier cities.

**PULSE:** *Do you foresee any new development in the business models?*

**MR. LU BEI HONG:** For long term, yes. As seen from the development history of the U.S. market, imaging centers have extended their businesses to radiation treatments. A good

example of this would be Alliance Healthcare Services started radiation treatment services in 2008, and now the treatment business takes up to 21% of the total revenue.

**PULSE:** *What are some of the publicly listed companies on your radar to expand to independent imaging diagnostic center businesses?*

**MR. LU BEI HONG:** I would pay attention to the companies that have already been quite successful in imaging diagnostic sectors, like Huarun Wandong listed in A-share. It previously has been a state-owned enterprise, as you may know, and through past 50 years of development, it has become the leading imaging equipment manufacturer in China. With the restructuring in 2015, its ownership was privatized and with investment by another leading healthcare company, Yuyue Medical, Huarun Wandong is well positioned to capture the growth of this industry. As far as I know, management is planning to establish imaging centers as a form of joint ventures with leading hospitals in China.



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## Profile

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### **Mr. Lu Bei Hong**

*Business Development Manager at Zhuhai Honkai Medical Instrument Co Ltd*

Mr Lu Bei Hong is a Business Development Manager at Zhuhai Honkai Medical Instrument Co Ltd since 2012. He has a Bachelor's Degree from Shandong University, China.

About Zhuhai Honkai Medical Instruments Co., Ltd

Zhuhai Hokai Medical Instruments Co., Ltd, founded in 1996, engages in the research, development, manufacture, distribution, and service of medical equipment in China. The company principally provides equipment and integrated solutions for minimally invasive therapy in oncology, including specialty equipment, integrated solutions, technology solutions, and oncology discipline solutions. It is listed in Shenzhen Stock Exchange (300273).



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## Wharton's Healthcare Management Program





# Wharton Health Care Management Program Overview

The Health Care Management Department is one of the oldest, most distinguished, and most comprehensive in the health care field. Graduating its first class of MBA students with a specialization in Health Care Management in 1971, the department was in the vanguard of educating health care executives and leaders within the general management curriculum of a business school, breaking from the traditional public health and health administration models. The doctoral program was established in the mid 'eighties, broadening the department's mission to encompass the training of future health care management and economics scholars. The creation of the undergraduate concentration, also in the mid-'eighties, provides Wharton students and students throughout the university with education and training in health economics, management, and policy. Offering more course electives in health care than any other business school-based program, every important sector of health care is covered in depth.

Today, the department is a vital community of internationally renowned scholars who have spent their careers following the evolution of health care services and technology, domestically and globally, and researching important management and economic questions arising from all aspects of this complex enterprise. The HCM faculty collaborate with medical, engineering, nursing, and other faculty from around the university to create interdisciplinary research and knowledge. HCM students have countless opportunities to work with faculty and health-related research centers throughout the university. Health care executives, entrepreneurs, consultants, investors, and other practitioners are involved as part time lecturers who bring the world of practice to the classroom. The Annual Wharton Health Care Business Conference organized by HCM students attracts more than 600 alumni, health care professionals, and national health care leaders from every subsector of health care. It has become a nationally recognized forum for the exchange of ideas about issues in health care business and management innovation. A vast network of alumni who hold leadership positions in every part of health care work in close partnership with the department in activities such as guest lecturing, recruiting and mentoring students, and providing access to business data and practices to faculty engaged in research projects. This close-knit community of scholars, students, alumni, and practitioners is widely considered a leading source of talent and leadership for the health care field.

# Wharton Health Care Management

## Student Organizations

Central to the Wharton Health Care Management student experience is each individual's ability to shape and participate in a number of dynamic student-run initiatives. We have highlighted some of these activities below.



### **Wharton Health Care Club**

The Health Care Club organizes professional and social activities for all Wharton graduate students who are interested in exploring opportunities in the healthcare industry. Members share their knowledge and perspectives in addition to interacting with current industry leaders to develop an understanding of the issues facing hospital, physician, managed care, pharmaceutical, biotechnology, and medical device organizations. Please contact Jennie Funk ([jfunk@wharton.upenn.edu](mailto:jfunk@wharton.upenn.edu)) or Jonathan Hahn ([jonhahn@wharton.upenn.edu](mailto:jonhahn@wharton.upenn.edu)) for further details.



### **Wharton Health Care Board Fellows Program**

The Health Care Board Fellows Program strives to cultivate and enhance mutually beneficial learning relationships between Wharton's Health Care Management Program and the nonprofit community. Program participants gain first-hand experience as nonvoting board members on the boards of socially responsible nonprofit organizations, while those organizations benefit from the professional experience and training of current Wharton MBA students. Please contact Dan Kaufman ([kaufd@wharton.upenn.edu](mailto:kaufd@wharton.upenn.edu)) for more details.



### **Wharton Global Health Volunteer Program (WGHVP)**

WGHVP is designed to give Wharton Health Care Management students the opportunity to participate in global healthcare related projects for NGO's with limited resources. WGHVP trips are student-organized, student-run, and student-led. Projects give participants exposure to healthcare challenges in the developing world as well as the opportunity to work closely with organizations on the ground to develop viable strategies to improve their operations. Please contact Kelly Cheng for further details ([kelcheng@wharton.upenn.edu](mailto:kelcheng@wharton.upenn.edu)).



### **The Penn Biotech Group**

PBG Consulting offers student consulting services to players in every sub-sector of the healthcare industry. Our consulting teams draw membership from a number of graduate schools across Penn, including Wharton, the Perelman School of Medicine, and the School of Engineering and Applied Sciences. PBG Consulting's goal is to provide graduate students the opportunity to gain hands-on consulting experience analyzing a broad range of real-world business issues confronting healthcare companies today. Please contact [info.pbgconsulting@gmail.com](mailto:info.pbgconsulting@gmail.com) for more information.



### **The Wharton Digital Health Club**

The Digital Health Club serves the needs of the growing community at Wharton interested in changing the healthcare system through enabling technology businesses. The Digital Health Club brings in its own speaker series, arranges site visits to health care tech firms in San Francisco, Philadelphia, and New York, administers a Startup Weekend event, and organizes consulting projects for healthcare firms interested in expanding their use of predictive analytics. Please contact Daniel van den Bergh ([danielva@wharton.upenn.edu](mailto:danielva@wharton.upenn.edu)) or Emily Reid ([reidem@wharton.upenn.edu](mailto:reidem@wharton.upenn.edu)) for further details.



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