

Roundtable Discussion with DxCG Founders

Drs. Arlene Ash and Randall Ellis, DxCG co-founders and leaders in the predictive modeling field, recently sat down for a candid roundtable discussion. They shared their views on DxCG's evolution as a company, their recent industry honors, as well as the future of predictive modeling.



You both recently received major honors for your research work with risk adjustment? Can you tell me a little about them?

Randy: I was recently appointed as President Elect of the American Society of Health Economists, or ASHE, an organization of academic, applied and policy-oriented economists from the US, Canada and Mexico which held its inaugural conference two years ago. ASHE is a spin-off from the International Health Economics Association, or iHEA, where I've also been on the board of directors. It's still an adjunct branch of iHEA, so it doesn't yet have a lot of autonomy and independence, but one of my roles as a president is to facilitate the transition to a stand-alone organization. My term as President Elect starts in June 2008 for two years, then two more years as president, and two more years as past president. This also means I will be on the board of directors of ASHE for 6 more years.

Arlene, can you explain the significance of the Health Services Research (HSR) Impact Award you received?

Arlene: The Health Services Research Impact award from AcademyHealth is given once a year. The 2008 award is for the body of work that led to the founding of DxCG and much of this company's subsequent activities – that is, more than 20 years of research and dissemination. The word "impact" emphasizes that this isn't just academic work. The award recognizes that risk adjustment has actually had a profound influence in the health care industry and in public policy. The purpose of the

award is to recognize the influence of research on the real world.

You have dedicated most of your careers to health services research. What drives you to this mission?

Randy: My interest in this research started well before DxCG existed. There are a wonderful number of interesting questions still to be answered in health economics. They are very policy relevant, significant, and people pay attention. I've been pleased that the types of questions in modeling and conceptualization has impacted Medicare payment policy; even the medical system in the US and abroad. What drives me to this mission is that I find it inherently very exciting and interesting. Also, the data available is really unique and powerful in addressing many questions.

Arlene: I'm trained as a pure mathematician and my earliest research papers were in mathematics. If 10 or 20 people in the world read my papers, it was a big deal! When I decided to move into health services research - at a time before the field even had that name - I knew I wanted to do something that would affect the real world. That really was important to me. When I moved across the hall from the mathematics department to the statistics group, I had in mind that someday this country would try to get its act together to really improve the way it organized health care, and that a person with mathematical training who paid attention to these issues might have the opportunity to do something important.

Randy missed one point that I know is important to him and to me. It's not just that the work is interesting, which it is, but it's

important. Truly, this is a mission. Twenty plus years ago when we started, we were giving talks just to educate people that risk adjustment is necessary to protect sick people and their providers.

Randy, you are well known internationally for the research work you did in Germany with the German Physicians Payment Reform. Can you tell me how risk adjustment is starting to change health care internationally?

Randy: Risk adjustment has been on the European agenda and in use there since the 90s. The Netherlands adopted a model that's an offshoot of the DCG models we developed in the 1980's. The Netherlands was the first international payment model. Many other well-developed countries have been interested in risk adjustment for re-allocating money in countries where there are competing health plans. Germany, Netherlands, Belgium, Switzerland, and Israel have risk adjustment methodologies that initially started off as very simple ones and then evolved towards using diagnosis based models. There is a risk adjustment network in Europe which has met annually for more than a decade, and I have been invited to join them this March in Ireland. The network is comprised of a small number of researchers from six or so countries. They come together and share updates about their experience, their tools, and results from their own analysis. Risk adjustment is definitely growing in importance in many European countries. It's also of interest in lots of other lower income countries. I've given presentations in Taiwan, Hong Kong, Chile, and Israel. Others have spoken in South Africa, Puerto Rico, Brazil, and China. There is a lot of interest in using predictive models in diverse settings. All of those countries are quite different from the US. They all have selection, quality, and fairness problems that they need to solve by using these kinds of frameworks.

Arlene: Germany is the earliest international adopter of the DxCG framework for organizing diagnoses and

making appropriate provider payments. It is exciting to be able to apply and extend the techniques to this new setting, new context, and new data.

You both have been integral to our corporate mission of promoting fair & efficient health care through your early research, and even now. What makes you continue to be a part of DxCG?

Randy: As the founders, we helped choose "promoting fair and efficient health care" as our slogan for DxCG, along with Marilyn Kramer, DxCG's former president. I think that our clients like the fact that we have a broader mission than many other corporations and we hope that this will continue in the future.

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Arlene: We really believe that our academic values, as teachers and researchers, add value to the company. We try to be clear and coherent about our methods. We report what we find and don't cherry-pick the facts. We have devised fair ways of evaluating systems that others have adopted. Our goal is to compete by agreeing on what we are trying to accomplish, and trying to do the best with respect to pre-determined ways of measuring our performance. We are not going to crop a graph at a funny place to show off where we do better than a competitor. We do believe that fairness, in a broad sense, is extremely important. Actually, though, the word "fair" in "fair and efficient" refers to the way that the system would work for payers, providers and patients if you were able to set the rules up right with risk adjustment.

What do you think have been the big milestones in your work in risk adjustment?

Randy: Some of our earliest milestones include receiving funding from Medicare to create the models, followed by competing against five other large companies and organizations that were offering risk adjustment models, being designated in legislation as part of a precursor of the balanced budget act of the model that was preferred and implemented in 1999 for Medicare managed care payment. Then, of course, the founding of DxCG in 1996, and then being acquired by ISO in 2004.

Arlene: This provided us the resources to grow, which has been very nice.

Randy: I would go back and say not only the adoption by Medicare in 1999 for risk adjustment payment, but adoption again in 2004 when they announced they were going to use our all-encounter model. There were two rounds of careful review and competition and we had to win twice.

Arlene: Our winning the contract to work with the German government and having a serious corporate international presence has been very exciting.

What improvements do you see in predictive modeling? How are these applications evolving?

Arlene: The first risk adjustment application followed the Medicare program's agenda at the time. Their problem was how to make fair payments.

Randy: That is, Medicare payment formulas for capitated enrollees.

Arlene: Right. For a long time, we focused on that. Over a period of time, we've greatly expanded the repertoire of problems addressed. For example, helping health plans identify patients who are likely to benefit from case management. Or, a really different application and important growth area is helping actuaries to do their jobs better. In terms of milestones, the Society of Actuaries recognizing that risk adjustment was important is a big one. Early on most actuaries didn't think they needed us at all. Recently, the SOA has said "If you're going to do actuarial health, you have to do risk adjustment." So it was very nice to have been accepted as mainstream there. One of our exciting projects is trying to figure the extent to which we can use our vast and wonderful research databases to be able to help plans estimate their return on investment from making changes, for example, introducing a disease management program. We're working on this. We're not yet sure how best to do it, or how well we can do it. Can we find comparison groups within our data set that will enable us to say "Well, this is what happens to the comparison groups that don't receive any special new care program, and this is what happens to a similar group that does get that care"? Do we feel comfortable saying that the difference is a good estimate of the effect of the new program?" That's a research project. We're taking a stab at it. Another thing that we're working on that maybe we've carried a little bit further is this project with Allan Goroll.

Randy: From the Mass Medical Society and the Harvard Medical School.

Arlene: He's a general internist who is trying to "save primary care." You've perhaps read something about how the profession of primary care is in trouble. When I'm not at DxCG, I'm a professor at Boston University in the department of General Internal Medicine. My col-

leagues there are general internists, the type of doctor whose practice is very threatened. There's constant cut-back in the willingness of payers to provide anywhere near the kind of money to primary care doctors that spend on specialty care. The whole structure of how doctors are paid discourages primary care doctors from sitting down and spending time with their patients to find out what the problems are and how best to address them. We're working to develop risk adjustment tools that will enable payment systems that encourage primary care doctors to allocate their time in ways that they feel will be most productive.


What about predictive modeling for the under- and uninsured?

Arlene: In the Massachusetts health care reform, when you insure people who have been outside the system, how do you properly reimburse the providers? How can you know that the providers who take the very sickest people are "held harmless" – that they will receive the resources that they need to provide good care? That is a very important function of risk adjustment.

Randy: I'm just going to add to that and say that in predictive modeling space, I think that much of our early work focused on predicting dollars. Now, as Arlene highlighted, there are many other events, measures, visits, and outcomes that people are interested in predicting, especially everything related to quality and performance. It's really important to have good risk adjustment models to control for differences in patient severity. A unique strength of our framework is the richness of the classification system that allows us to do a good job at predicting relatively surprising events, whether it is drug use or mortality or things that the models weren't originally calibrated for. That leaves us in a great position to contribute and have a role in many of the changes and reforms that will happen in upcoming years.

Arlene: For example, in this primary

care reform project, how would you know if a primary care doctor is doing a good job? One of many things you might measure is whether the patients enrolled to that person's practice are using fewer than expected emergency room visits, since a good doctor working with the right resources should be able to bring down the number of emergency room visits. We built models to predict – for panels of patients with particular demographics and medical problems – how many emergency room visits you would expect. And only with a tool like that can you hope to make a sensible judgment about whether a doctor's patients are using the ER too often. Certain kinds of patients are just going to visit the emergency room a lot more than others, making a useful judgment about the actual observed numbers of visits requires having a risk-adjusted expected number to compare it to. We have a tool which gives us a good way of predicting expected numbers of emergency room visits.

Randy: Arlene touched on the Massachusetts health reform and primary care. Two other initiatives that I see are pay-for-performance and other means of rewarding doctors for doing a good job, and creating quality report cards for consumers. All of these need predictive models for severity correction. It'll be interesting to see if this country, and its leaders and policy makers, rise to recognize the level of effort and expertise it takes to do a good job at this. At present, many politicians and policy makers just say "of course we will risk adjust," and assume that it will just happen. Actually, we know it takes a lot of work, expertise and care. If we are sitting there ready to answer these questions, we can be the one they choose, but if not, there are other competing groups as well. 

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