

## Meeting Notes From the 43rd Annual Meeting of the ARDS

This third installment of *The Aspen Retinal Detachment Society (ARDS) Meeting Notes* reviews talks delivered by Dennis Han, MD, chief of the retina service and the Jack A. and Elaine D. Klieger Professor of Ophthalmology at the Medical College of Wisconsin in Milwaukee; and George Williams, MD, chairman of the department of ophthalmology at William Beaumont Hospital in Royal Oak, Mich., and a clinical professor of biomedical sciences at The Eye Research Institute of Oakland University in Rochester, Mich.



Some people live by the saying “If it ain’t broke, don’t fix it,” but others continually strive to be the best they can be. This was basically the theme for Dr. Han’s lecture, which introduced many attendees to Lean manufacturing principles and how they can be applied to one’s retina practice to improve efficiency and workflow.

Another important topic of discussion in practice involves payments and reimbursements, a topic into which Dr. Williams delves as they relate to changes in health care reform. Some of the points he raises are positive, but, ultimately, the future of health care may not be so sunny.

The 44th Annual Meeting of the ARDS will take place from March 5 to March 9, 2016, in Snowmass, Colo. For information on the meeting, visit [www.aspenretina.com](http://www.aspenretina.com).

—Timothy G. Murray, MD, MBA

### Applying Lean Principles to Vitreoretinal Practice

Dennis Han, MD



Dennis Han, MD, reviewed the application of *Lean manufacturing* principles in vitreoretinal practice to help improve efficiency and promote a smooth workflow while providing a positive patient experience. Lean concepts have been under development for over a century, and, like a step ladder, one concept has led to another concept in the system’s ultimate development and spread. Toyota is often cited when discussing applications of Lean concepts to manufacturing; the company famously implemented Lean practices in their Japanese factories after World War II.

At its core, Lean describes a manufacturing approach that considers the expenditure of resources for any goal other than the creation of value to be wasteful. In health care applications, Lean principles define as valuable those steps that potentially improve patient health, such as increasing physician and technician time spent interacting with patients while decreasing waiting time and patient movement required for diagnostic imaging.

### At a Glance

- Applied to health care, Lean manufacturing principles define steps that could improve patient health.
- The process for each physician in a clinic should be evaluated individually.
- According to Lean principles, physicians are the step through which all other processes stream.
- It is important to maximize the dual flows of physician flow and patient flow to maximize both health care delivery and patient satisfaction.

### CATEGORIES OF WASTE

Dr. Han described eight categories of waste as defined by Lean that can be remembered with the mnemonic “WISDOM TO change” (Table).

According to Dr. Han, looking at wait times at various steps of the clinic operation is a good way to monitor waste,

**TABLE. THE WISDOM TO CHANGE**

|                         |  |
|-------------------------|--|
| <b>W</b> aiting         | a worker waiting because information, space, or authority is missing                           |
| <b>I</b> nventory       | too much or too little in the wrong place  |
| <b>S</b> kills          | human resources or skills that are unused  |
| <b>D</b> efects         | redoing process steps because they were done incorrectly the first time                        |
| <b>O</b> ver-processing | redundant steps, such as writing findings twice or excess paperwork                            |
| <b>M</b> otion          | excessive worker movement between tasks  |
| <b>T</b> ransportation  | equipment or patient kept too far from the workspace   |
| <b>O</b> ver-production | resources that are spent on rapid throughput at one step when the bottleneck is somewhere else |

as inefficient processes produce long patient wait times during which value is not added to the patient encounter. When patient waiting time is reduced between steps in a clinic operation, this intrinsically reduces wasted effort.

“If you look at your process and find out where patients are getting stuck, and you deal with those issues, you will actually be reducing patient waiting and waste,” Dr. Han said.

Furthermore, each physician’s practice in the clinic should be evaluated individually as its own unique process. One reason Lean often fails in a clinic is that the operations staff attempts to implement changes across the whole clinic operation rather than allowing for differences in unique patient populations and individual practice methods.

### CLINIC REVIEW

Dr. Han decided to undergo a Lean evaluation in his clinic because patients often complained of long wait times and he frequently encountered dissatisfied patients. Over a 10-month period, he instituted a number of changes to completely overhaul a process that was broken and inefficient.

The first step, Dr. Han explained, was to educate the staff about the various forms of waste so that they could see them in their own processes. Next, he and the clinic staff members modified which rooms in the

### Video: Lean Practices in the Clinic



clinic were used during each step while also establishing multifunctionality so that staff performed more than one step in the routine, minimizing patient movement.

To ensure consistent adoption of the new processes, team leaders were identified, as were metrics that ensured changes were maintained. In keeping with a core belief of Lean philosophy, Dr. Han said, he tracked the success of changes according to the 5S principle, which stands for Sort, Straighten, Shine, Standardize, and Sustain.

“That is, you sort out all the different supplies so that the things you use most frequently are closest to you and easiest to get and the things you use less frequently are further away,” Dr. Han said. “Straightening means you organize for easy access, cleaning the workplace for awareness and detection of anomalies. You establish consistency across the board with standardization of tasks and sustain this with continuous monitoring.”

### ADDING VALUE TO PATIENT CARE

As Lean applies to health care, the physician is what is known as the shared resource, or the step through which all other processes stream. As such, it makes intuitive sense to maximize physician flow.

“Physician flow is the ability to move from one patient to the next without distraction while providing value to the patient and practice,” explained Dr. Han. He said there are four steps in each patient’s movement through his own practice, but that he was only getting each of those steps done on time 80% of the time. As a result, 60% of patients were delayed. And because patients were being seen in sequential order, one delayed patient affected the next. This is what is known as the silo effect, wherein backups at one step slow down subsequent steps.

Moving patients through the clinic in a parallel fashion

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In his own clinic, Dr. Han said that incorporating Lean has reduced clinic length by 15 to 30 minutes each half day, allowing him to see an additional two to three patients per half-day session.

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will help improve efficiency and flow, Dr. Han said. Instead of patients moving from one space to the next (eg, from a screening/dilation room to an examination room), they stay in one room and the staff travels to them.

One of the endpoints of Lean is achieving synchrony, or harmony in how all pieces fit together in a dynamic fashion. In the clinic, there are two distinct flows: the movements of the physician and those of the patient. Ideally, Dr. Han remarked, both are controlled by a staff member, a team leader who has a bird's-eye view of clinic operations with respect to staff and space availability and patient status, and timing of physician availability for the next patient. The team leader controls the speed of patient flow by interactive scheduling ahead of time and by using the white board in real time during the clinic session to smooth flow to the physician; this person also coordinates technicians' movement from one space to another to optimize flow.

"As the shared resource, the physician has to be flexible," Dr. Han noted. "The Lean effort has not worked in some clinics because the physicians have not embraced the concept of being flexible and allowing technicians or scribes to change roles, sometimes separating from the physicians to expedite patients through the system."

## RESULTS

In his own clinic, Dr. Han said that incorporating Lean has reduced clinic length by 15 to 30 minutes each half day, allowing him to see an additional two to three patients per half-day session. Adding patients to the schedule has obvious revenue implications; however, it is the added efficiency that has really enhanced clinical operations, he explained. After putting Lean into practice, he began receiving top survey scores from anonymous patient surveys, and his productivity rose 25%.

Putting Lean into practice required some out-of-the-box thinking and some compromises, Dr. Han admitted. For instance, adding optical coherence tomography

machines to each of the three examination pods created flexibility to get imaging done at any point in the examination, sometimes even before dilation.

Additionally, Dr. Han said that his clinic now has patients fill out consent forms per protocol (ie, that they will receive anti-VEGF injections for a period of 1 year on a frequency determined by the physician) rather than per injection. "We also spent some time leveling the work load, and we tried to make our photographers more efficient," Dr. Han said.

In closing, he told attendees, "You have to be willing to make infrastructure and human resources changes, so you need high-level support if you are in an institution," he noted. "You have to be willing to take workers off line to discuss your processes, and you need to be motivated and flexible. You may need an external Lean coach because it can be a complex system requiring a sustained period of effort. But as a result, our patients are happier and we almost always end our days on time or early, which has really helped me from a personal standpoint."

For an in-depth understanding of Lean concepts as applied to clinic flow, consider reading the soon-to-be-published book *Make Your Clinics Flow: A Practical and Innovative Guide for Physicians, Managers, and Staff* by Dr. Han and Aneesh Suneja, MBA (ASQ Quality Press, Milwaukee, Wis.).

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## The Ramifications of Health Care Reform



**George Williams, MD**

Delivering the Taylor Smith Lecture, George Williams, MD, discussed the ramifications of health care reform. He outlined current expenditures in health care and how they

## At a Glance

- Even though private insurance covers more lives, it spends less money than Medicare or Medicaid.
- High-deductible health plans, at one time an anomaly, now account for more than 20% of health care plans.
- The trend is moving away from hospital-based care and toward ambulatory surgery centers and office-based care.

“In 1988, 75% of health care was paid for by standard indemnity plans. The patient went in, the doctor issued a bill, and the insurance paid everything. Today, that’s less than 1%.”

—George Williams, MD

may change as a result of reform efforts. According to Dr. Williams, although there are some positive aspects in reform, in the end, the law of unintended consequences paints a troubling picture for the future of health care.

### **FOLLOW THE MONEY**

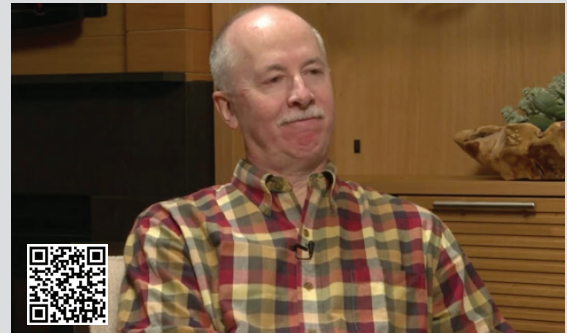
Dr. Williams reviewed how spending on health care currently breaks down. He said the United States spent more than \$3 trillion on health care in 2014—roughly 20% of which was dedicated to physicians’ pay. From a global standpoint, he said, the US health care expenditure is the fifth largest economic enterprise on the planet; the United States spends more on health care than the entire gross domestic product of the United Kingdom or France.

However, that level of expenditure is not necessarily due to the existence of large federal plans. Instead, Dr. Williams explained, it is more a factor of everything (eg, angioplasties, bypass surgeries, MRIs) simply costing more in the United States compared with the rest of the world. Another (perhaps misperceived) notion is that American doctors over-order tests and diagnostics. Dr. Williams said that hospitalization data demonstrate that US usage patterns are significantly lower than those of any other advanced country.

The danger going forward, Dr. Williams noted, is that current projections estimate that national health expenditures will increase significantly while gross domestic product will remain relatively flat. In 2013, more than 50% of health care expenditures were by taxpayers, and more than \$1 trillion was spent between Medicare and Medicaid, he said. In that year, only 33% of expenditures were by private insurance.

“Already we see a disconnect because, although private insurance covers more lives, this sector actually spends less money than Medicare or Medicaid,” Dr. Williams said. “The other substantial factor is the

### **Video: Health Care Update**



increasing amount of out-of-pocket expenses. The cost of health care insurance has gone up almost 200% over the past 14 or 15 years. In 2013, the average family premium was \$16 000.” During that time, although inflation has naturally led to higher prices, the average American wage has increased at a lower rate—about 2% to 3%—against a backdrop of increasing health care costs.

“And so,” Dr. Williams said, “virtually every penny of wage growth over the past decade has been consumed by our patients’ out-of-pocket health care costs.” A key reason for this increased burden on patients for their own health care costs is a shift in how patients are covered. High-deductible health plans were rare until the mid-2000s, but they now account for more than 20% of health care plans.

“This is not your father’s health care,” Dr. Williams said. “In 1988, 75% of health care was paid for by standard indemnity plans. The patient went in, the doctor issued a bill, and the insurance paid everything. Today, that’s less than 1%.”

### **WHERE WILL THE MONEY GO IN THE FUTURE?**

Dr. Williams discussed how health care reform may change the distribution of health care expenditures in the future—and, in some cases, how it is already significantly affecting spending.

For background, Dr. Williams described the four parts of Medicare spending:

- Part A: Hospital insurance program
- Part B: Supplemental insurance
- Part C: Medicare Advantage
- Part D: Prescription drug benefit

“In 2013, all parts of Medicare accounted for about \$583 billion [expenditure] against total income of about \$580 billion. That is a bad business model,” Dr. Williams said. “In 2013, Part C was about 28% of



the total, and that has now already risen to about 30% to 35%, and we can expect to see that grow significantly moving forward.” Dr. Williams pointed out that, in 2013, about 40% of the total of \$580 billion in Medicare funding came from general tax revenue, about 38% from payroll taxes, and about 13% from beneficiary premiums. That breakdown is significant because it helps explain why independent physicians may have cause for concern. Whereas hospitals get about 85% of their revenues via Part A through a dedicated revenue stream from payroll taxes, 72% of the revenue in Part B is derived from the general tax base.

“We are competing for dollars with everything in the federal budget, from defense to transportation to education,” Dr. Williams said. “We do not have a dedicated revenue stream, so we are politically in conflict with everything else in the federal budget.”

General revenue is also used to pay for Part D expenditures with very minimal contribution from patient premiums. However, until about 2012, the Medicare program was actually generating some positive cash flow in terms of interest gained in trust funds set up for each portion of the program. According to Dr. Williams, the trust fund balance for Part A is about \$205 billion, for Part B \$74 billion, and for Part C \$1 billion. He pointed out that tax hikes in 1980 and 2010 helped to save the program from financial collapse; the current estimate is that Medicare will remain viable until about 2030; however, 2012 represented an “inflection point at which we finally started spending more money than we were bringing in,” Dr. Williams said.

## ACA AND UNINTENDED CONSEQUENCES

Per-patient spending is another variable that will significantly influence whether publicly funded health care remains solvent. Dr. Williams said that about 1% of patients account for 25% of expenditures. Prior to the passage of the Patient Protection and Affordable Care Act (ACA), about 50% of that 1% was covered by the private market, in which limits could be placed or coverage could be denied. Therefore, the ACA had a definite positive impact on assuring continued and needed coverage, but the untold consequence is a financial stress that threatens to break the system if it is not patched or fixed.

However, changing demographics in the American populace suggest that adjusting the financial model for Medicare will be difficult. As Dr. Williams pointed out, in 2000 there were about four workers per beneficiary. By 2020, the ratio is expected to be about 2.5 beneficiaries per worker, with a further slide to about 2.4 beneficiaries per worker by 2030. Additionally, the ratio of working adults to dependent disabled is expected to decrease

from 5 to 1 today to 3 to 1 by 2020.

The primary goal of the ACA was to increase coverage, but its passage had many unintended consequences, Dr. Williams said. Predictions are that about 144 million individuals will be covered in 2019, which is a definite positive; to cover that expansion, the government enacted a 0.9% health insurance tax to help fund Part A. “But actually, none of that money goes to Medicare. It all goes into the general fund, and physician payment competes for dollars from the general fund,” Dr. Williams said.

When the ACA was being debated in Congress, pharmaceutical companies agreed to an \$80 billion rebate on drug revenues in exchange for no passage of regulation on drug price limits. Based on an estimate of \$3.4 trillion over the next decade, the 2.3% rebate was a relatively modest give back. However, Dr. Williams said, the device industry opted not to play ball and got slapped with a 2.3% tax on all device sales.

“The ACA brought new enrollees to the system, but it did nothing about cost. As a result, cost will be passed on to the patient in the form of premiums,” Dr. Williams said. “In a lot of cases, patients do not understand what they are buying with a high deductible plan, such that the first \$6000 or \$8000 is out of pocket. And some of these plans have deductibles up to \$12000 before the financial liability disappears. The exchanges have a real disconnect between the intent and the result.”

## CONCLUSION

Ophthalmology can expect to see significant transition away from hospital-based care, to ambulatory surgery centers and office-based care as well as increasing competition—both market-based and political—from the hospitals for outpatient payments as hospitals transition to more outpatient care, Dr. Williams said. At the same time, value-based revenue models continue to emerge.

The true mystery, Dr. Williams said, is whether spending can be reduced without cutting physician payment. Currently, physician pay accounts for 16% of general revenue, but this sector controls all aspects of spending. Dr. Williams said that, to him, this reality suggests a growing popularization of hospital dominance in the health care marketplace and the eventual end of fee-for-service in private practice. Trend models, he said, are already showing this: In 2002, 75% of American physicians were in private practice and 25% were employed by hospitals or institutions. In 2014, more than 70% of newly graduating residents, regardless of specialty, signed institutional contracts.

“Make no mistake, the end game is the end of fee-for-service medicine; it is just a question of how we are going to get there,” Dr. Williams said. ■