REVIEW ARTICLE

Lessons from other industries: Ophthalmology and the COVID-19 crisis

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Abstract

Even though ophthalmology has several distinguishing characteristics that set it apart from other industries, there are many opportunities for us to learn from them. This crosspollination of ideas is critical for innovations in processes for greater efficiency, leveraging of technology, and drafting roadmaps for better patient safety and satisfaction. It is critical to evaluate the contextual and practical differences between industries as we select what can be learnt from elsewhere when we retool for the post COVID-19 world.

Learning from other industries for lean management, or for improvement in processes, has been used by health care and ophthalmology for decades now.

Despite the number of differences (versus other industries) in health-care systems, information transfer from aviation and nuclear power has certainly improved patient and clinical safety guidelines.[1,2] Similarly, lessons from the hospitality industries have helped in better patient satisfaction and equipment utilization. Lately, ophthalmologists, like other doctors, have been learning marketing strategies from FMCG companies which rely on trust and long-term relationships to establish consumer rapport.

The question then is not whether to look at other industries, but to select what can be learnt from elsewhere when we retool for the post COVID-19 world [Table 1].

Not Simple and Not Ctrl-C/Ctrl-V

Health-care systems are varied, and the complexities and sensitivities of providing vision related services are beyond those negotiated by other industries. Which is why it is important to

remember some caveats before almost anything is adapted in our clinical practice:[3,4]

1. It is critical to evaluate and acknowledge the contextual and practical differences between industries.
2. Cultural and structural correlates that support the particular intervention require equal emphasis.
3. Most readymade tools for analysis or interventions in SOPs will need a careful adaptation. Pure "lift-and-shift" opportunities will be few, if any. For all the management techniques, the only two that remain infallible, across geographies, sociocultural milieus, and specialties, are common sense and empathy.[5,6]

No Clear Guidelines/Evolving Practice Patterns

It is also important to remember that COVID-19 pandemic knowledge is evolving rapidly, codification is not standardized, and the trajectory for each geographical area has its own peculiarities. Government decisions on restricting movement of people and supplies have created bottlenecks and frequently

Table 1: Best practices across industries during COVID-19

A. Crisis management

1. Establish a crisis management structure, prioritize fast decision-making, and adaptability to evolving guidelines.

2. Identify critical business functions, especially related to surgery, emergencies, and supply chain. Develop recovery strategies and fall back options.

3. Establish a responsive communications function, along with ongoing patient engagement and social media response plans.

B. Information technology leads the way

1. Prioritize stable IT infrastructure to facilitate telemedicine options, as well as secure remote working

2. Establish protocols to support hardware and software off-site and be prepared to troubleshoot for patients and staff alike.

3. Consider alternative technology-enabled solutions to support patient care continuity

C. Staff and work arrangements

1. Careful communication about COVID-19 risk. Mitigate risk perception to maintain involvement and morale, but not so as to result in complacence.

2. Impose self-quarantine for staff as and when required

3. Divide staff into teams and ensure no intermingling so as to make sure the entire clinic is not quarantined.

changing regulations have exacerbated these problems. Add to it the changing quarantine guidelines for contacts and those exposed, along with increasing online patient encounters often fraught with all of the drawbacks of telemedicine.

Event Analysis and Reporting

Adverse event analysis draws primarily from aviation, but incident reporting systems are now a widely implemented improvement approach in modern health care too. COVID-19 transmission from clinics and to clinical staff, therefore, can be a significant learning model for security breaches in universal precautions. As always, reporting of adverse events should involve a rigorous analysis of systems, processes, and human factors and systems analysis. This should be followed up by a robust change in organizational systems and behavior structures so as to improve patient and HCW safety.[2,7,8] Within this umbrella would be processes as basic and critical as handwashing and PPE donning-doffing, to those more complex as HVAC, laminar air flow systems and air exchange rates in operating rooms. Furthermore, activities like anesthesia that rely more on monitoring and data driven interventions will benefit hugely from this.

Checklists and cognitive aids

Checklists and cognitive aids also came from the aviation and nuclear power industries: Health-care facilities across the world rely on these in both inpatient facilities and ORs. Sign-in processes before surgery and during drug administration are representative of areas where checklists have dramatically reduced human errors, facilitated team functions, and improved communications.[4,9,10] These can also be applied to decrease COVID-19 transmission. Most clinical establishments are already using cognitive aids for HCWs and patients for precautions. A minimal equipment list (MEL, for aircrafts)[4] in both outpatient clinics and for inpatient care can help with judicious use of PPE as the COVID-19 situation worsens. A modified MEL that enumerates diagnostic minima, new crisis standards, for different patient categories can also help streamline eye care delivery. By bringing to the fore core requirements only, this can be an important clinical decision support tool – minimizing both operational costs and patient transit time in the hospital.

System analyses and quality improvement processes rely on robust systems integrators and optimization. While learning from chemical and nuclear power processes has led us in analyzing, mapping, and improving the reliability of health-care processes, they can also help make the patient end-to-end journey through the clinic safer and seamless. Allocating staff and resources[11] to this can have dramatic impact on not only patient safety, prescriptions, equipment maintenance, but also patient satisfaction scores.

Think long term

Processes

In clinical practice, the first threat to vision is the actual illness, and the second risk is finding a "safe" therapeutic intervention. Because of COVID-19, a third, more critical risk, that of disease transmission now added. This new layer of risk implies that the hitherto acceptable (sometimes appreciated) ability of staff to work around the processes for particular situations could result in compromised system efficiency and safety and be detrimental to practice health.[4,12,13] Critical triage of patients requiring intervention, non-negotiable protocols on transmission-related safety, and a team approach with input from all stakeholders including caregivers, thus is the order of the day.

In addition, the very definitions of value in health care invariably focus on the not-so-important. Given that most strategies prefer to define value as either clinical efficacy alone or health outcomes per spend unit for a given population,[4] COVID-19 may compound the metrics. Even if there is an increase spend per patient visit for an intervention/investigation that is less effective (e.g. RNFL OCT), that may now be chosen over a more time consuming and higher infection risk intervention that has more robust evidence base and is preferred by some patients (e.g. visual fields).

Lean, borrowed from Toyota, conceptualizes the patient journey in the clinic as a continuously improving set of processes which emphasize customer value and eliminate waste, delay, and errors. Even though the contextual use of lean in health care has largely focused on delivering optimal clinical outcomes and operational efficiency, the experiential arm of lean principles is of critical relevance for now. Allocating time for care, and practice-to-practice collaboration, by redirecting patients to smaller optometry and non-specialty practices could reduce wait times

and free up specialists' time for the more serious treatments. This becomes more relevant when wait times and crowded waiting rooms are critical to COVID-19 transmission. In addition, it can only improve patient experience and satisfaction scores, and increase the participation of all stakeholders in the definition of value for that clinical practice.

People

Practices are struggling to keep up with increased spends, lower footfall, and decreased elective surgeries. Add to it an increased risk for infection and case fatality rate due to COVID-19. Health care workers are dealing with a three pronged assault: Disease, superhuman expectations, and intense scrutiny. This is compounded by the wildly oscillating feedback from public, government, and media. This is contributing to increasing incidence of burnout, moral injury, mental health issues, and suicides amongst health-care professionals. It is therefore essential to prioritize investing in their welfare.

The shift from patient-centered ethics to public health ethics has led to another moral dilemma. Eye surgeons, like many others, have curtailed or stopped elective surgeries to both conserve PPE and to reduce COVID 19 transmission. This goes against the very tenet of ophthalmic practice where restoration of vision for a cataract patient is of utmost importance, even if not an emergency. Having to wait it out, unless asked to perform a surgery for emergent patient care, has been a strange reality to be confronted with for most surgeons.[14]

The clinical decision making paradigm now has newer data points, so many of them alien, and so many of them contrary to patient choice: COVID-19 status, comorbidities, duration of surgery, type of anesthesia required, and the number of expected follow-up visits. Add to this already potent mixture the knowledge that there is no emergency in a pandemic: That taking care of a patient without PPE, in times when PPE shortages are common is irresponsible, not heroic.[14,15]

Mostly, ophthalmologists will not be asked to intubate patients or deal with the ethical dilemma of allocating ventilators and ICU beds, choices that are imminent certitudes of moral injury.[16]

Routine support processes, clear communication about situations that may potentially arise, expectations and instructions, and peer-to-peer well-being checks should become part of clinical practice in the post-COVID-19 era. It is equally important to watch out for signs of burnout and compassion fatigue, while understanding the toll public health stewardship may take on a person not trained for the same.[17] Mental health issues among HCWs, therefore, may just be the next pandemic.

Investing in people also means investing in your patients. The biggest aspect in the doctor-patient relationship which COVID-19 pandemic has amplified is communication. While practices are turning to telemedicine, and privacy regulations are being relaxed to allow an easier communication between doctors and patients, there really is no substitute for an in-person consult.[18] Conventionally, telemedicine in ophthalmology has been a hub-and-spoke model, offering triage for acute conditions, providing reassurance and continuing medication for chronic diseases like glaucoma, and providing continued physician-patient engagement to increase adherence to treatment and follow ups.[19] Patients who will require an in-person consult following a teletriage, will have a higher risk of infection, especially in cases with significant comorbidities, and may require additional counseling to allay fears. This is yet another communication tightrope walk because complacence can increase the risk of transmission of disease. The opposite, a heightened risk perception, can result in panic.

In addition, the dramatic shift from customization to individual needs to population-based resource allocation is a new determinant of the doctor-patient relationship.

However, the basics of communication will remain what they are: clinicians must listen, talk clearly about all that is critical to patient health, and most importantly, empathize. Hopefully, in most ophthalmology practices, the doctor will not have to violate the most important tenet of the doctor-patient relationship. But some of us will need to circumvent empathy and patient-centric values, and make decisions for our patients based on crisis standards.[20]

For practices and doctors, therefore, it is imperative that we emerge from the pandemic wiser and kinder, and more compassionate. Not only because it is what we should be as individuals, and healers, but also because in the post COVID-19 world, fraught with fear and vulnerability, it will be the right thing to do.

Fiscal discipline and cost cutting

The fiscal impact of suspending non-emergency procedures has exposed balance sheet frailties. Financial goals, for now, can only be avoiding/reducing staff termination, while sustaining the infrastructure needed to scale back up seamlessly to pre-COVID-19 levels. Given that the otherwise predictable patient and procedure volumes are diminished and that they will creep back up as the impact of COVID-19 diminishes, practices need to be extremely adaptive and disciplined. Financial discipline may include pay cuts, with/without decreased work hours, ancillary office closures, deferred mortgage and vendor payments, utilization of any debt moratoriums, and possibly, review and shelving all discretionary spending and non-critical practice/equipment expansion programs.

The practice, however, must retain the ability to quickly step up operations once the patient flow normalizes, in fact, most practices will see a surge in elective surgeries once the pandemic wanes. This will not only require a quick and considerable infusion of capital but also be best tackled by those practices that take good care of the staff during these times.

Real-world evidence versus evidence-based medicine

While doctors have been trained to rely on evidence, that relating to the pandemic has been scant and of poor quality. In a rush to publish, there has been a compromise on the quality, sometimes veracity, of data and process of peer view.[20,21] Furthermore, much of the evidence, originally coming from China, a lot has been lost in translation. Add to it the rotten

apple author/researcher problem, and you have the common belief that there is no real evidence base, or authoritative medical guidelines, for the doctor to rely on. In times like these, many doctors are depending on real-world evidence (RWE), rather than randomized controlled trials (RCTs). With prevalence and incidence data being selectively enhanced or diminished by governments and regulatory authorities around the globe, and with the veracity of clinical evidence being questioned by policy-makers and individuals alike, it is time to go back to the drawing board.[21]

In this, it just might make sense to borrow the Agile methodology, that continuously tests, and changes iterations of the software during its development.[22] Unlike the waterfall model, the equivalent of RCTs, where one intervention when proven to be superior is chosen and followed through to the end, the Agile framework, based on RWE, would actually allow real-time adjustments to dosage and treatment protocols, that maybe iterative, incremental, and more responsive to the needs of the individual patient. These responsive feedback loops can potentially revolutionize management of AMD, especially CNVMs, diabetic macular edema, uveitis, and glaucoma. Learning from this situation may, at a later date, be analyzed and designed into RCTs and thereafter be adapted as SOPs in non-crisis times as well.

Conclusion

These are unprecedented times, asking for decisions and sacrifices far greater than we had imagined. These are also times of extraordinary stress and opportunity, to craft a life and practice less ordinary. All of us can make intelligent and empathetic choices, aided by instinct and experience, and guided by education, without being limited only to what was taught at medical school.

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