Generating New Knowledge

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Listening in on a leadership Town Hall this month, I was reminded that research matters. We were encouraged to take the data we have, ask the questions it inspires, and create the knowledge of the future.

Research enriches us and makes us better clinicians. In 1999 the Accreditation Council on Graduate Medical Education (ACGME) established core competencies describing the development of medical learners, and in 2012 the Council further developed this concept by introducing Milestones. Within this context, Milestones are a set of observable behaviors that signify physician development through the arc and continuum of their education. While the competencies include Patient Care and Medical Knowledge, Professionalism, and Communication, of particular interest is that one-third of these include Practice-Based Learning and Improvement or Systems-Based Practice.

In the latter two, as in all the competency areas, we are reminded of our obligation to uphold our duty to continuously improve, role model, and strive to achieve an ever more idealized community and society. How should we do that? By continuing to participate in and report on our research, process-improvement, and quality-improvement initiatives.

We expect energy from our learners, as well as inquisitiveness and innovation. Students and residents are expected to demonstrate investigatory and analytic thinking. We want them to help us evaluate patient care practices, appraise and assimilate scientific evidence, and improve their patient care. As mentors and role models, we ought to do the same.

Further, full-fledged physicians are able and should continue to move from our knowledge of study designs and statistical methods toward appraisal of our practices. This could regard patient outcomes and access to care, or even inclusion in medical decisions and equity, especially for medically underserved communities. In this way, we discover and refine new and efficient ways to implement therapeutic effectiveness.

We must be skilled digesters of medical information — to understand the difference between evidence-based and anecdotal reasoning, the subtleties that separate correlation from cause and effect. Beyond this, however, we should feel empowered and inspired, endowed to look for new therapies, identify approved therapies that are not effective, and overall make health care more affordable and accessible. This is what is meant by participating in continuous self-education — to recognize the deficiencies in our practices and systems, to invoke polices that require more research, and then use our skills, our leadership, and the resources around us to start making these changes happen.

It is not only in the interest of a noble dedication to the art of medicine that we should dedicate ourselves to this, however. Continuing to develop and maintain our skills as innovators and scientists is clearly in the interest of our patients and our community, and more research should occur in every medical setting, be it private practice or the hallowed inpatient setting, whether here at Penn Medicine Lancaster General Hospital or far beyond.

Doing research can also serve us on a personal level. Certainly, research is challenging, as it demands patience and attention to detail. Yet — even as we're concerned that we might be too busy or risk becoming burned out — we might ask ourselves: what gives us joy in medicine? Do we derive pleasure from treating a particular disease process or seeing patients within a particular context? We might further ask how we can do more of that.

One way is by engaging the science and publishing what we discover. By doing so, we will each not only have the chance to become something of an expert in the subject, but more of our colleagues and peers will look to us to help when questions in that medical arena arise. In essence, research and process improvement efforts deliver back to us.

There are many ways to be involved. Frontline researchers need the support of advisory councils and peer reviewers, both as they begin their project and throughout the journey to publication. The Institutional Review Board (IRB) serves a vital role in protecting human subjects. Many projects necessitate further compliance committees to ensure the protection of all involved.

The current literature corroborates that patients do better in a research-intense environment; in fact, mortality rates for even those patients deemed "lower severity" tend to be lower at academic medical centers.[1] Any number of reasons might explain this correlation, not the least of which is that academic centers are nimble, their practitioners accustomed to openly discussing errors. Humility means we can learn from our mistakes, that we can adapt and improve. I am not suggesting that we should transfer all our patients to university-affiliated centers; rather, community hospitals like LGH should behave more like academic institutions, as might the outpatient practices where most of our patients are seen.

We are especially fortunate here at Penn Medicine Lancaster General Health to have access to an innovation lab to help us make these changes happen, and I'm excited to have another column in this issue describing the Innovation Accelerator Program (see page 86). We also have a resource-rich Research Institute and a remarkable set of experts within to help us make strides in this arena. Our Business Intelligence department can help us mine the capacity within Epic to develop baseline datasets, and project managers can help us negotiate the process. This is precisely the model followed by a group of residents and faculty who recently pursued questions about supplements for the treatment of COVID-19 infection.[2] (Spoiler alert: vitamin C as treatment has no utility.)

LG Health has hired a new vice president of research administration, Edmond Kabagambe, DVM, PhD, MS, MBA. I recently sat down with Dr. Kabagambe regarding what he'd like to see as the new direction of our Research Institute. In his words, he is interested in "greasing the wheels with regard to moving toward research as a regular part of practice" and sees our local providers "developing the experimental therapeutics and devices they will then put to use as treatment options." To this end, he wants to help local practices gain funding for local efforts, making it easier for Lancaster practitioners to use LG Health Foundation funding and grants and effectively engage in collaborative scholarly endeavors, even with other institutions.

One way to initiate this would be to decrease barriers to participation in research. For example, a shorter Collaborative Institutional Training Initiative (CITI) refresher course was rolled out in October 2022, and plans are underway to roll out a Penn-generated Ethics of Research course that will be worth 4.5 CME credits as an alternative to CITI training requirements. He would like to increase the number of Phase III trials across all service lines while also increasing early phase first in-human studies here at LG Health.

The Research Institute already has a few Phase I and Phase II studies that will begin enrolling patients in the next six months. These efforts will pave the way for pharmacokinetic studies and vaccine development trials here at LGH. He envisions collaboration between more tenured and less seasoned clinicians at LG Health, to help them gain exposure to the practice of research and to bring fresh minds and ideas to the process. He seeks new avenues with administrative support, software (e.g., EndNote), and funding for travel and publication submissions.

Dr. Kabagambe, recently an assistant vice president of research at Ochsner Health System, based in New Orleans, Louisiana, explained to me his plans for a living database of protocols to better track proposals submitted for funding, proposals that have received funding, and those in various phases of the publication process. He also hopes to begin better tracking research inquiries/requests to Business Intelligence and other service departments, to document the use and need for services, to potentiate resource acquisition. In the long run, he would like to see more of us working toward the goal of publication in high-impact journals. This will certainly follow a closer collaboration with Penn Medicine partners and involvement in multidisciplinary research that covers multiple service lines.

Ours is, of course, already an area in which innovation is in action, and so it is with pleasure that we also continue the Spotlight on Clinical Research column by Heather Madara and Dr. Roy Small. Their contribution this time around highlights unique and rather exciting advances being made by local physician scientists (see page 91).

I invite you to peruse all the enticing articles in this issue and wish to thank the inspiring group of writers who have touched on topics both current and timeless — from monkeypox to hookworm, from TTP to the SARS-CoV-2 vaccine. Even more, I invite you to continue *your* scholarly work, and to reach out to our research and innovation departments about help with pursuing your project. Our readers no doubt will look forward to seeing your publication soon, here in this journal or in others.

REFERENCES

1. Burke L, Khullar D, Orav EJ, Zheng J, Frakt A, Jha AK. Do academic medical centers disproportionately benefit the sickest patients? *Health Aff (Millwood)*. 2018;37(6):864-872.
2. Fogleman C, Cohen D, Mercier A, et al. A pilot of a randomized control trial of melatonin and vitamin C for mild-to-moderate COVID-19. *J Am Board Fam Med*. 2022;35(4):695-707.

JLGH Fall 2022 Recap

Q&A for Extended Learning

The last issue of The Journal of Lancaster General Hospital *offered a review of syphilis and updated national practice guidelines related to buprenorphine treatment for opioid use disorder, as well as an introduction to LG Health's Lead-Free Families Initiative and the Center for Health Care Innovation in Lancaster, among other topics of interest. Review the questions and answers below to see how much you remember from the Fall issue. Need a refresher? All issues of* JLGH *are available online at JLGH.org.*

Q **Up to 80% of pregnant women with untreated syphilis transmit syphilis to their fetus, making treatment of the utmost importance. What treatment is recommended for this population?**

A Intravenous penicillin G benzathine is the only therapy with confirmed efficacy for syphilis during pregnancy. Three doses of 2.4 million units should be given at one-week intervals. If not administered exactly seven days apart, the regimen must be restarted.

Q **In 2020, the American Society of Addiction Medicine released a focused update to its National Practice Guideline for the treatment of opioid use disorder. List some changes.**

A Comprehensive assessment should not preclude prompt initiation of buprenorphine. Buprenorphine dose should be sufficient to enable patients to discontinue illicit opioid use; 16 mg or more per day may be appropriate. Patients who are stable on buprenorphine/naloxone treatment may continue this regimen if they become pregnant. The addition of full agonist opioid to the regular dose of buprenorphine can be effective for severe acute pain.

Q **Penn Medicine Lancaster General Health launched the Lead-Free Families Initiative in August 2021. How can physicians make referrals to the program?**

A To remove lead hazards from Lancaster County homes, providers can type "Amb ref lead" into the Epic order search or call 717-544-LEAD (5323). Individuals may also self-refer by emailing info@leadfreefamilies.org.

Q **The Center for Health Care Innovation (CHCI) at LG Health is modeled after the Penn Medicine CHCI in Philadelphia. What is the name of the Center's signature program and what is its goal?**

A CHCI at LG Health's signature Innovation Accelerator Program is a year-and-a-half-plus-long program to support staff in their efforts to develop, test, and implement new approaches to improve health care delivery and patient outcomes.

Q **Per the European Society of Cardiology, the American College of Cardiology, and the American Heart Association, does aspirin still provide a net benefit as primary prevention of cardiovascular disease?**

A No. These groups agree that the balance of benefits and harms is equally weighted, so physicians should no longer recommend aspirin for the primary prevention of cardiovascular disease.

Have an idea for a story? We want to hear from you.

The Journal of Lancaster General Hospital is looking for human interest stories including, but not limited to, staff experiences, patient experiences, and anything else that might be educational for our readers — the medical staff of Penn Medicine Lancaster General Health. If you have an idea for a story, scan the QR code at left or visit our website at JLGH.org to share your idea.