Carol Peden, MB ChB, MD, FRCA, FFICM, FFMLM, MPH

UBP Co-Chair, Right Care Initiative; Executive Director, USC Center for Health System Innovation, Keck School of Medicine, USC

Carol Peden MB ChB, MD, FRCA, FFICM, MPH is a Professor of Anesthesiology and Director of the Gehr Center for Health System Sciences and Innovation at Keck Medicine of USC, an Adjunct Professor at the University of Pennsylvania and Senior Associate Tutor at the University of Oxford. She has led and taught on QI projects internationally and was named Public Health Innovator of the year in 2016 by Harvard School of Public Health. Carol gained her quality improvement (QI) expertise as a Health Foundation QI Fellow at the Institute for Healthcare Improvement (IHI). She is Vice Chair of the American Society of Anesthesiologists Brain Health Initiative. Prior to moving to USC, Carol was an Associate Medical Director for Clinical Quality for NHS England and a Consultant in Anaesthesia and Intensive Care Medicine in the UK. She is dually accredited in anesthesiology and intensive care medicine. She has a medical degree and research doctorate in medicine from the University of Edinburgh, and an MPH in clinical effectiveness from Harvard School of Public Health.
Disruptive Innovation in the time of COVID-19
University of Best Practices, California

Carol J. Peden MB ChB, MD, MPH, FRCA, FFICM. 
Professor of Anesthesiology and Director of Health System Innovation in the 
Gehr Family Center for Health Systems Science and Innovation

Carol.Peden@med.usc.edu. Twitter @PedenCarol

June 8th, 2020
Discuss: How and why care delivery has changed so dramatically with COVID-19.

Describe: The incentives to change the way we deliver healthcare during the COVID-19 pandemic, and the barriers to change that have been broken down.

Identify: other areas of healthcare that may be right for disruption and innovation.

Consider: how does the change we have seen help delivery of UBP goals?
What has happened in the space of a few weeks?
Responding to COVID-19

1. **Adapting facilities** to safely care for our patients
   - Surge capacity
   - Triage and testing

2. **Providing resources** to staff
   - Personal Protective Equipment (PPE)
   - *Care for the Caregiver*

3. **Expanding telehealth** capabilities to meet growing demand
Providing Resources

**PPE Donation Program**
- **130+** donors
- **120,000+** items dropped off

*The above counts do not include donors and items mailed to Keck*

**3D Printing Initiative**
- **865** face shields
- **1,008** filtered masks

**Days on Hand***
- N95 **123**
- Isolation/Surgical **119**
- Gloves **39**
- Goggles **189**
- Face Shields **654**

*As of 5/6/20; based on utilization over last 7 days*
Care for the Caregiver

• Offers free housing, comfort amenities and mental health support to high-risk staff

• 3,000+ comfort kits distributed with treats, personal care items, snacks, and sewn masks for personal and family use
Care for the Caregiver Program at a Glance

Keck Medicine of USC and University of Southern California recently launched the Care for the Caregiver program, a comprehensive initiative designed to ease potential work environment stress, especially in times of crisis. We believe the addition of these services will further support our workforce so that we can continue to disperse exceptional medicine to those in need. Services are continually being added and include:

**HOUSING PROGRAM**
To help keep you safe, or if you are concerned about COVID-19 exposure risk to your loved ones, visit [https://tinyurl.com/Keck-Housing](https://tinyurl.com/Keck-Housing) to request a stay. Our remote housing team is available every day, 7am-7pm. Email: careforthecaregiver-hotels@med.usc.edu

**EMOTIONAL WELL-BEING PROGRAM**
Drop-in video support groups, workshops, and daily de-brief sessions with live therapists, supportive calls with USC counselors, as well as webinars and videos are available to help support the well-being of our staff and their families. Our emotional well-being team is available M-F, 8am-8pm. Call: (213) 865-9897. For more information, please visit: [https://tinyurl.com/Keck-Emotional-Well-Being](https://tinyurl.com/Keck-Emotional-Well-Being)

**ONLINE TUTORING PROGRAM**
Due to temporary school closures related to COVID-19, transition to online education has increased. Keck Medicine of USC is partnering with academics at USC to bring free online tutoring to our caregivers’ families in the following subjects: • Math • Science • Reading & Writing • Language Arts and more.
To request tutoring or to offer your services as a tutor, please email us at BenefitandOutreach@med.usc.edu.

**MUSIC AS MEDICINE**
We have engaged a variety of musicians to create short, recorded music recitals for staff in an array of genres including classical, folk, indie-pop and much more. We encourage you to use this program as a source of inspiration, and to help soothe your mind and body. So sit back, turn up the volume, and enjoy!
To access these resources, please visit [https://tinyurl.com/Music-As-Medicine](https://tinyurl.com/Music-As-Medicine)

**LEGAL ASSISTANCE PROGRAM**
Keck Medicine of USC is partnering with the USC Gould School of Law to offer assistance with your legal needs in areas including • Will & Estate Planning • Advanced Health Care Directive • Durable Power of Attorney • Tax • Family Law
Submit your request by filling out the request form at [https://tinyurl.com/Legal-Assistance-Form](https://tinyurl.com/Legal-Assistance-Form). You will receive a response within 1-2 business days. For more information, email LegalAssistance@med.usc.edu.

For more information, visit: [https://keckmedicine.sharepoint.com/sites/KM-CareforCaregiver](https://keckmedicine.sharepoint.com/sites/KM-CareforCaregiver)

Care for the Caregiver is brought to you by Keck Medicine of USC and the University of Southern California
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International Collaboration:
Learning fast from friends and partners
The Office Visit is a Dinosaur

Aim: By September 30, 2020, 100% of us will have made progress towards (radically) redesigning systems that are primarily driven by what works optimally for the patient—time, place, and mechanisms—basing our work on weaving our expertise, partnering, skills and abilities into their lives on their terms when, where, and how they want.

- Alliance leaders have committed to radically rethinking and retraining systems to hold the patient at the center. This innovative workgroup will focus on demonstrating a strategy for resetting the corporate, medical, and technological models... rendering the old ways of delivering care extinct.

Institute for Healthcare Improvement – The Office Visit is a Dinosaur - OVID
Telemedicine and COVID-19, an observational study of rapid scale up in an academic medical center.

*JGIM 2020, Peden, Pagan and Mohan in press.*
Expanding Telehealth

- Approved temporary telehealth credentials for providers
- Launched 88 new clinics (26 pre-COVID)
- Trained 600+ providers and staff
- Established command center
- Distributed hardware (cameras, headsets, speakers)
- Launched new patient resources

*As of 5/21/20; last 3 weeks; virtual visit counts only represent those through the InTouch Platform
5 Reasons Why Telehealth Is Here To Stay (COVID-19 And Beyond)

How the COVID-19 Pandemic will change healthcare delivery

Virtual healthcare technologies like telehealth will become the norm for taking care of patients

Empty Waiting Rooms: Family Physicians, Some Specialists Face Financial Challenges From Huge Drop Off In Patient Loads

Oklahoma Launches Telemedicine Platform for Rural COVID-19 Guidance

The OSU Center for Health Sciences is supporting a Project ECHO telemedicine platform to connect with more than 150 rural healthcare providers across the state, offering peer support and education on COVID-19 care.

Doctors discover telehealth’s silver lining in the Covid-19 crisis
'This is healthcare's Amazon moment': Dr. Stephen Klasko's 5 predictions on healthcare delivery post-COVID-19

Laura Dyrda (Twitter) - Wednesday, April 1st, 2020 Print | Email

Health systems have accelerated their digital health, telehealth and virtual care capabilities in the past 30 days forcing them to disrupt themselves, says Philadelphia-based Jefferson Health President and CEO Stephen Klasko, MD.

Care delivery will never be the same again, says Dr. Klasko, who was also recently named the first distinguished fellow of the World Economic Forum and served as co-chair of the Forum's Board of Stewards for the Future of Digital Economy and New Value Creation at its annual meeting in Davos, Switzerland.

Healthcare’s Amazon Moment – Steve Klasko MD

1. There will be more partnerships between health systems and health payers
2. Increased data gathering and AI may ultimately make society more resilient to disease
3. How patient data is handled by hospitals will be key to patient trust
4. Technology can close the gap between the “haves” and “have nots” but it must be applied strategically
5. The most prized skills in physicians will be empathy, communication and self-awareness in the digital age....

And I would add the ability to understand and use data
Innovation

Necessity...the mother of invention

Mission to collect iPads for hospital patients in isolation goes national

Stringent visitation rules barring families from seeing their loved ones due to the coronavirus pandemic often leave patients in nearly-complete isolation.
Disruption was already here……

Babylon Joins Mount Sinai Health Partners to Expand 24/7 Access to Digital Healthcare Services for Millions of New Yorkers

- Babylon brings its AI-powered app to deliver new healthcare services to New Yorkers, including video consultations with board-certified family medicine physicians, and a full suite of digital tools designed to help keep patients informed during a time of crisis.
- Babylon’s COVID-19 Care Assistant delivers up-to-date information and virtual care for each individual, allowing doctors to allocate time to the patients who need it most.
Why did we need to change?

• Why disrupt the status quo?
One in four deaths from heart disease and stroke in the US is preventable

Michael McCarthy
Seattle

More than 200,000 of the 800,000 deaths from heart disease and stroke in the United States each year are preventable, the US Centers for Disease Control and Prevention (CDC) has said in a report.

...and this may well explain a significant portion of the difference that we saw in the faster decline of preventable deaths in people over 65 and under 65.*

The report also found varied differences in avoidable death...

Around one in 20 patients are affected by preventable harm

Most is drug-related and accounts for $9.3 billion excess charges in US

Date: July 17, 2019
Source: BMJ
Summary: Around one in 20 (6%) of patients are affected by preventable harm in medical care, of which around 12% causes permanent disability or death, finds a new study.

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Burnout
Lancet 2016 West et al
Mirror, Mirror 2017: International Comparison Reflects Flaws and Opportunities for Better U.S. Health Care

**Exhibit 1. Health Care Spending as a Percentage of GDP, 1980–2014**

- United States (16.6%)
- Switzerland (11.4%)
- Sweden (11.2%)
- France (11.1%)
- Germany (11.0%)
- Netherlands (10.9%)
- Canada (10.0%)
- United Kingdom (9.9%)
- New Zealand (9.4%)
- Norway (9.3%)
- Australia (9.0%)

Notes: GDP refers to gross domestic product. Data in legend are for 2014. Source: OECD Health Data 2016. Data are for current spending only, and exclude spending on capital formation of health care providers.

commonwealthfund.org

July 2017
What are/were the top 3 challenges affecting all healthcare systems?

1. Shifts in Population Demographics and Social Characteristics
2. Balance between containing costs while maintaining access and quality
3. Fragmented healthcare delivery models
Value

- What is value in care?
- Value defined as health outcomes achieved per dollar spent
- What matters most to patients

Achieving high value care for our patients is our aim

Porter NEJM; 2010:363:2477-2481
Small Improvements versus Care Redesign: Can Your Organization Juggle Both?

Article · January 10, 2018

Onil Bhattacharyya, MD, PhD, David Blumenthal, MD, MPP & Eric C. Schneider, MD, MSc
The Commonwealth Fund
Women's College Hospital
What is the difference between innovation and improvement?
Improvement v Innovation

Innovation
• Risk
• Creation
• Challenge
• More customer focused?
• Are there pathways for innovation?

Improvement
• Safe in a stable market
• Optimize evidence-based practices
Disruption, innovation, evolution
How do these concepts apply to healthcare?

• What could be improved
• Where do you need to innovate?
• What requires truly disruptive change?
• How can innovation and improvement partner
Improvement Science

Bridging the gap between knowing and delivering
In my experience

• Improvement work drives innovation
• To improve you need to understand your current state and system
• You then can see the gaps and deficits that you cannot fill without innovation
Atul Gawande “Slow Ideas”

• Why do some ideas spread fast and others slow
• The contrast of the spread of anesthesia with the spread of antisepsis
I've only worked here one day but I thought of a great idea.

ZIP

The first idea is always the toughest. The urge eventually goes away.
Think Different

- Broaden our focus, look outside
- Study Improvement Science
- Understand reliable delivery
- Involve patients in care design
Steve Jobs Innovation Lessons

• Do what you love to do. Find your true passion. Make a difference.
• Be different. Think different. Better to be a pirate than to join the navy.
• Do your best at every job. Don’t sleep! Success generates more success so be hungry for it. Hire good people with a passion for excellence.
• Perform SWOT analysis.
• Be entrepreneurial. Look for the next big thing.
• Start small, think big. Put a ding in the universe.
• Strive to become a market leader.
• People judge you by your performance, so focus on the outcome.
• Ask for feedback from people with diverse backgrounds. Each one will tell you one useful thing—listen to your customers first.
• Innovate. Innovation distinguishes a leader from a follower. Delegate.
• Learn from failures.
• Learn continually. There’s always “one more thing” to learn.
• Cross-pollinate ideas with others both within and outside your company. Learn from customers, competitors and partners.
Ask Why 5 Times!

Choosing Wisely®
Promoting conversations between patients and clinicians
Think about the barriers to innovation
What’ stopping you!
Innovation is a process for testing and developing new ideas.
Where do you effect change?

Micro, Meso, Macro, System
Focus on patient at center of the system

- Patient and family co-design
Examples of Innovation

• Flipped discharge. [https://www.youtube.com/watch?v=KJEyZ1Y5O0w](https://www.youtube.com/watch?v=KJEyZ1Y5O0w)

• Hospital at home

• Enhanced recovery after surgery programs - *JAMA Surg 2017 Ljungqvist et al*

• Think outside the box – look to industry and around the world
Doing things differently

- Delivering care differently at the micro, meso, macro system
- New kit, new technology
- Designing things differently
- Behaving differently
- Using sites of care delivery differently
- People, places, things....
Digital technology and telemedicine

Top Benefits of Using Technology for Patient Engagement

What do you consider to be the top three benefits of using technology for patient engagement?

- Support patients in efforts to be healthy: 67%
- Provide input to providers on how patients are doing when not in clinic: 60%
- Create ecosystem that allows for better predictive analytics around patient health and more timely intervention: 51%
- Augment current capabilities of bricks-and-mortar health system: 47%
- Provide extra motivation to patients since they know clinician will observe data: 29%
- Replace case management and other personnel-intensive ways of monitoring patient behavior: 19%
- Create mechanism that allows people to make high-risk behavior more difficult: 16%

Survey Snapshot: What Patient Engagement Technology Is Good For

Insights Report • January 12, 2017
Digital Technology to Engage Patients: Ensuring Access for All

To ensure that we engage the patient groups who have much to gain from the more flexible health care interactions that digital innovation can provide, we must consider issues of computer literacy, access, and trust.

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Finally, has healthcare entered the digital age?

USC Virtual Care Clinic

The USC Virtual Care Clinic is dedicated to creating continuous digital health solutions that afford patients the ability to receive world-class medical treatment without having to physically visit the clinic. Leveraging the autonomous power of mobile connectivity, sensors, and virtual and immersive reality platforms, we aim to create a health care system that provides borderless, on-demand patient care.

Source: USC Center for Body Computing
NEJM Catalyst (catalyst.nejm.org) © Massachusetts Medical Society
Goals for a new age of healthcare after COVID-19

Essentials for Innovation and Improvement

• Reduce Variation
• Build reliable processes
• Design clinical systems and focus on need
• Truly involve patients
• Care for the Caregivers
• Culture – openness, transparency, multidisciplinary, happiness!
• Celebrate success