

# ACC Update: Care Transformation and the CV Workforce

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Chair, Ascension CV Service Line  
Ascension Medical Group Cardiology  
Indianapolis, IN



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IN-ACC, Sept. 10, 2022



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# Disclosures:

No conflicts of interest for this presentation.  
Full disclosures on file at [acc.org](http://acc.org)

# Thank You:

Vijay Rao, MD, FACC

Don Westerhausen, MD, FACC

Gwen Goldfarb



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Mar. 29, 1976

Price 75 cents

# THE NEW YORKER



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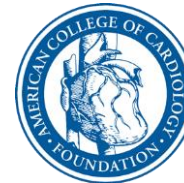


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# ACC Presidents From Indiana



**Dr. Bill Martz**  
1969-1970



**Dr. Charles Fisch**  
1975-1976



1976-1977



**Dr. Borys Surawicz**  
1979-1980



**Dr. Suzanne Knoebel**  
1982-1983



**Dr. John Williams**  
1982-1983



**Dr. Douglas Zipes**  
2001-2002



**Dr. Mary Walsh**  
2017-2018



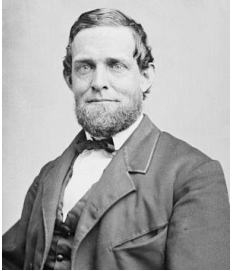
**Dr. Dick Kovacs**  
2019-2020



**Dr. Ed Fry**  
2022-2023



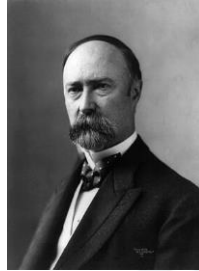
# U.S. Vice Presidents From Indiana



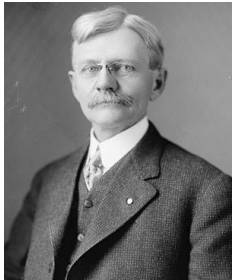
Schuyler Colfax



Thomas Hendricks



Charles Fairbanks



Thomas Marshall



Dan Quayle



Mike Pence

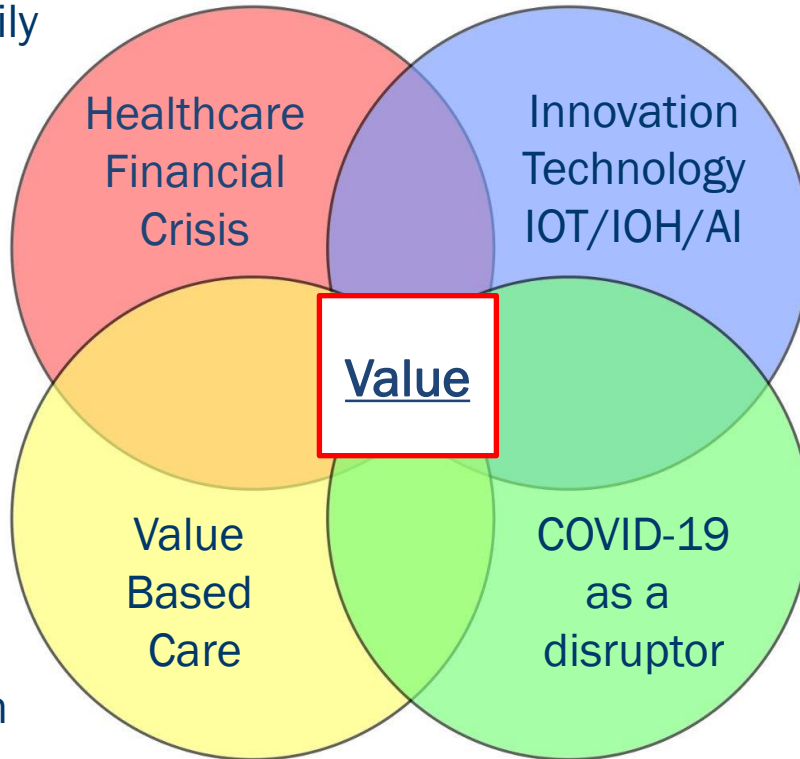


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# Crystallized Crisis

Workforce crisis  
11K people >65 y/o daily  
Health care inflation  
CMS insolvent in 2026



70% public payer  
Employers' demands  
Patient consumerism  
Silo'ed delivery system

Opportunity:  
Increased connectivity  
Digital economy/world  
Need digital health tools

Declining life-expectancy  
Impact of SDOH's  
Lack of Health Equity  
Unsustainable FFS model



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# CV Work Force (and COVID)



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# Not a New Problem: “Déjà Vu All Over Again”

Journal of the American College of Cardiology  
© 2004 by the American College of Cardiology Foundation  
Published by Elsevier Inc.

Vol. 44, No. 2, 2004  
ISSN 0735-1097/04/\$30.00  
doi:10.1016/j.jacc.2004.05.019

## 35TH BETHESDA CONFERENCE

### Introduction: The Origins and Implications of a Growing Shortage of Cardiologists

W. Bruce Fye, MD, MA, MACC, *Conference Chair*

*Fye BW, et al JACC 2004;44:221-232*

Journal of the American College of Cardiology  
© 2009 by the American College of Cardiology  
Published by Elsevier Inc.

Vol. 54, No. 13, 2009  
ISSN 0735-1097/09/\$36.00  
doi:10.1016/j.jacc.2009.08.001

## SURVEY REPORT

### ACC 2009 Survey Results and Recommendations: Addressing the Cardiology Workforce Crisis

A Report of the ACC Board of Trustees Workforce Task Force

#### ACC Board of Trustees Workforce Task Force

George P. Rodgers, MD, FACC, *Chair*

Jamie B. Conti, MD, FACC  
Jeffrey A. Feinstein, MD, FACC  
Brian P. Griffin, MD, FACC

Jerry D. Kennett, MD, FACC  
Svati Shah, MD, MHS, FACC  
Mary Norine Walsh, MD, FACC  
Eric S. Williams, MD, FACC  
Jeffrey L. Williams, MD, MS, FACC

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*Rodgers GP, et al JACC 2009;54:1195-1208*

## Drivers Pre-COVID

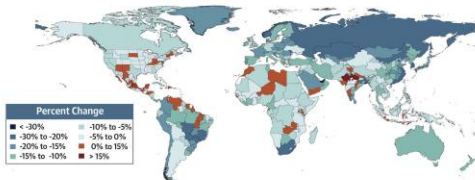
- Aging: providers, population
- Pt. complexity and co-morbidity
- Increased regulation and compliance
- Paradox of success = Chronic Dz
- Burnout – Career alternatives
- Rise of “Hyper-Sub-specialization”



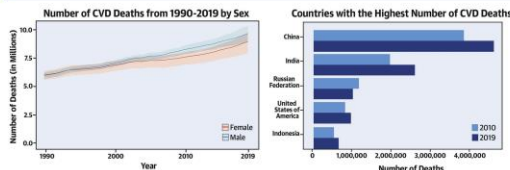
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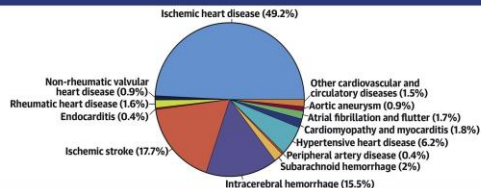
Percent Change in Age-Standardized CVD Death Rate from 2010-2019



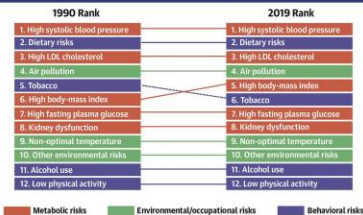
Number of CVD Deaths



Proportion of CVD Deaths by Cause (2019)



CVD Burden Attributable to Modifiable Risk Factors



# Global Burden of Diseases, Injuries and Risk Factors Study 1990-2019

*Roth GA, et al, JACC 2020;76:2982*

- CV cases doubled to 523M
- CV deaths up 50% to 18.6M  
(COVID-19 = 1.9M in 2020)
- 48% women, 60% are 30-70 years old
- IHD accounts for 1/2 of cases and deaths  
(>80% from IHD + Stroke)
- DALY's up 17.7 to 34.4 million
- Death rate declined, but now rising in US and UK (Diabetes, Obesity, COVID)



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## Cardiovascular Disease Projections in the United States Based on the 2020 Census Estimates



### **CENTRAL ILLUSTRATION:** Projected Future of Cardiovascular Risk Factors and Cardiovascular Diseases by 2060



#### Projections of Future Cardiovascular Risk Factors and Cardiovascular Disease in the United States From 2025 to 2060

##### Cardiovascular Risk Factors

Diabetes: ↑ of 39.3% to 55 million persons  
Hypertension: ↑ of 27.1% to 162 million persons  
Dyslipidemia: ↑ of 27.6% to 126 million persons  
Obesity: ↑ of 18.3% to 126 million persons

##### Cardiovascular Diseases

Ischemic heart disease: ↑ of 30.7% to 29 million persons  
Heart failure: ↑ of 33.4% to 13 million persons  
Myocardial infarction: ↑ of 16.9% to 16 million persons  
Stroke: ↑ of 33.8% to 15 million persons

##### Key points

- Projections for future cardiovascular risk factors and cardiovascular disease were based on NHANES data combined with 2020 U.S. Census projections for future population distributions
- Although steep rise in cardiovascular risk factors and cardiovascular diseases are expected in upcoming years, differences between women and men will largely remain stable over time
- Disproportionate increase in cardiovascular risk factors and cardiovascular disease are projected to impact racial and ethnic minority populations
- The results from this study have important implications for motivating policy decisions regarding equitable delivery of quality health care to all Americans

Mohebi R, et al. *J Am Coll Cardiol.* 2022;80(6):565-578.

account to provide quality, affordable, and accessible health care. (J Am Coll Cardiol 2022;80:565-578) © 2022 by the American College of Cardiology Foundation.

# Demand 2020-2060

- 2013-2018 National Health and Nutrition Examination Survey + 2020 U.S. Census Data
- 2060 Prevalence Increase:
  - IHD: 29 million persons (31%)
  - CHF: 13 million persons (33%)
  - MI: 16 million person (17%)
- Driven by DM>HTN>HLP>Obese



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# CV Work Force: Supply vs Demand

## Disruptor and Change Accelerator

<u>Phase</u>	<u>Supply</u>	<u>Demand</u>	<u>Drivers</u>
Pre-Pandemic	—	↑	Aging, Co-morbidities
Early COVID	↓↓↓	↓↓↓	Lockdown, Furloughs, Fear of infection
COVID Recovery	↓↓	↓	Kids at home, Elder care, Rapid attrition
“Great Resignation”	↓↓↓	↑	Burnout, Career mobility (IT)
Post-COVID	↓↓	↑↑	Slow stabilization, Pent-up demand



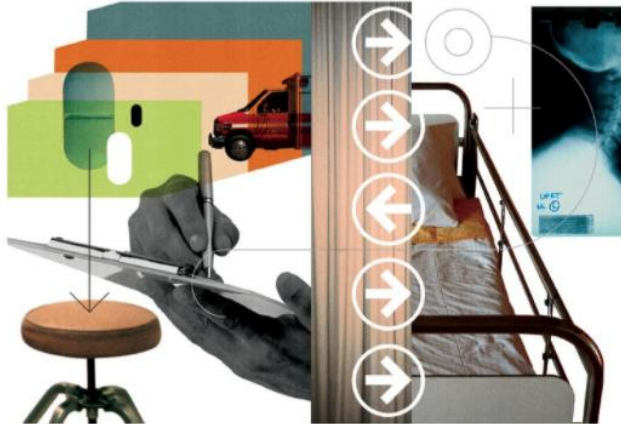
DOCTORS

# Where Have All the Heart Attacks Gone?

Except for treating Covid-19, many hospitals seem to be eerily quiet.

By Harlan M. Krumholz, M.D.

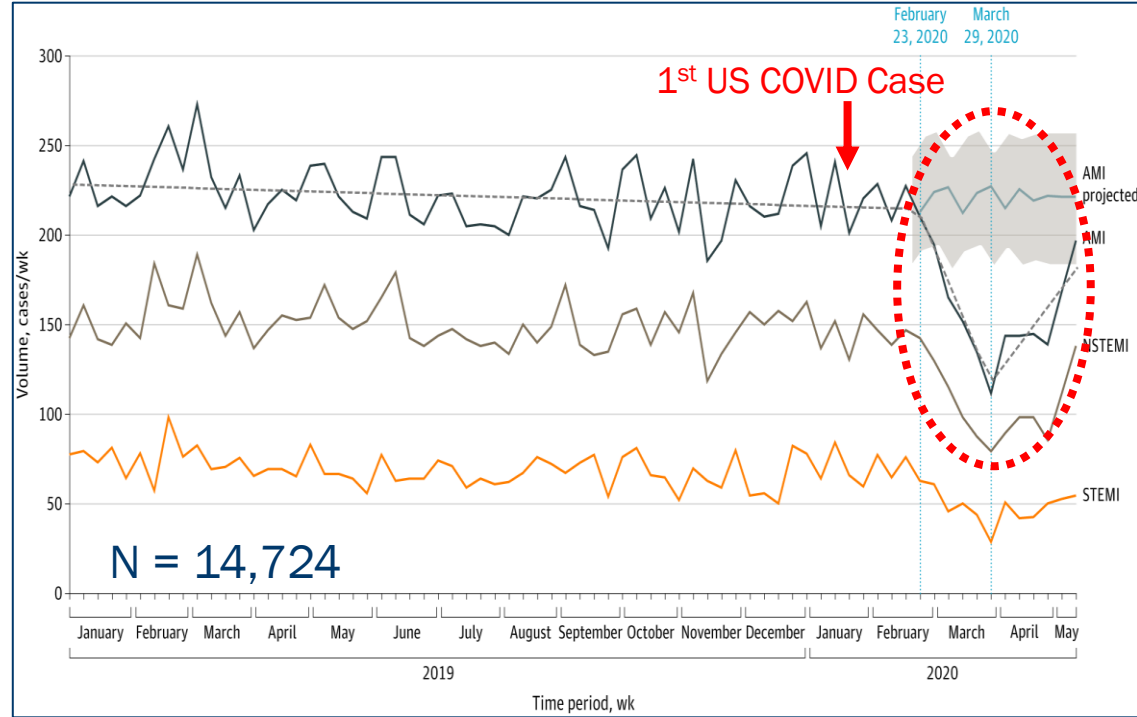
Published April 6, 2020 Updated May 14, 2020



Stuart Bradford

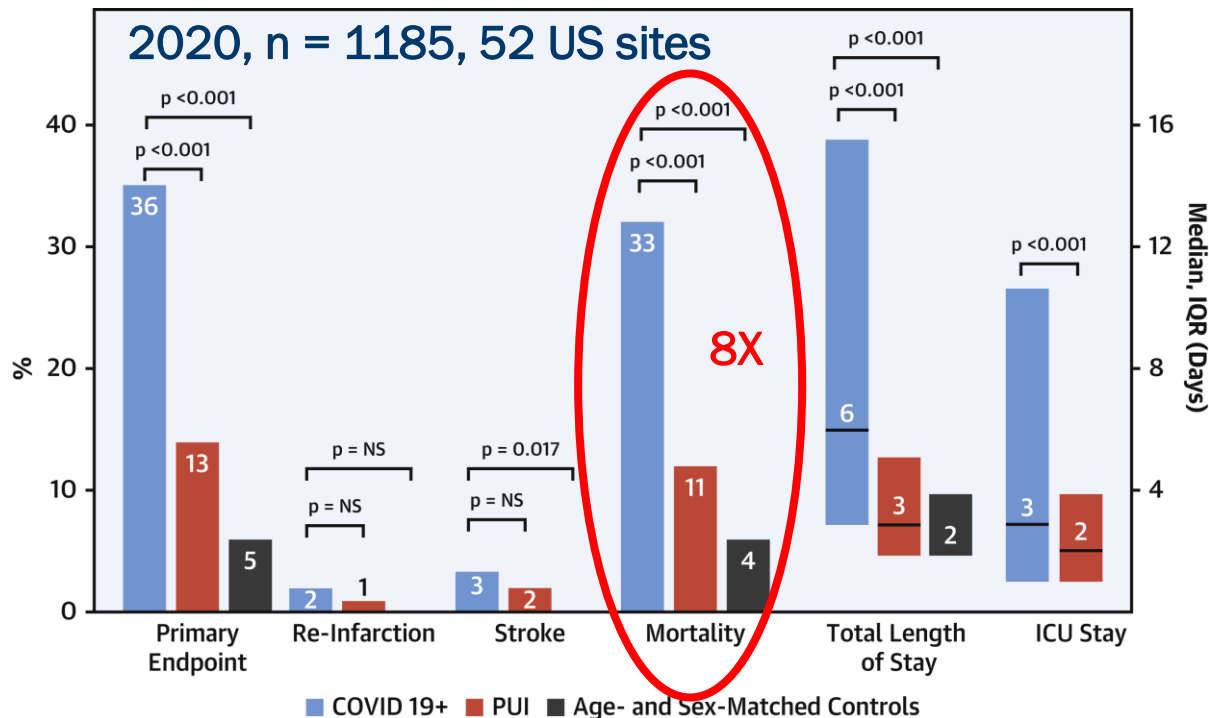
Krumholz HM. The New York Times. April 6, 2020.  
Gluckman TJ, et al. JAMA Cardiology 2020;5:1419-1424

# Indirect Effects of COVID



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# NACMI Registry\*: MI + COVID



\*ACC, AHA, SCAI

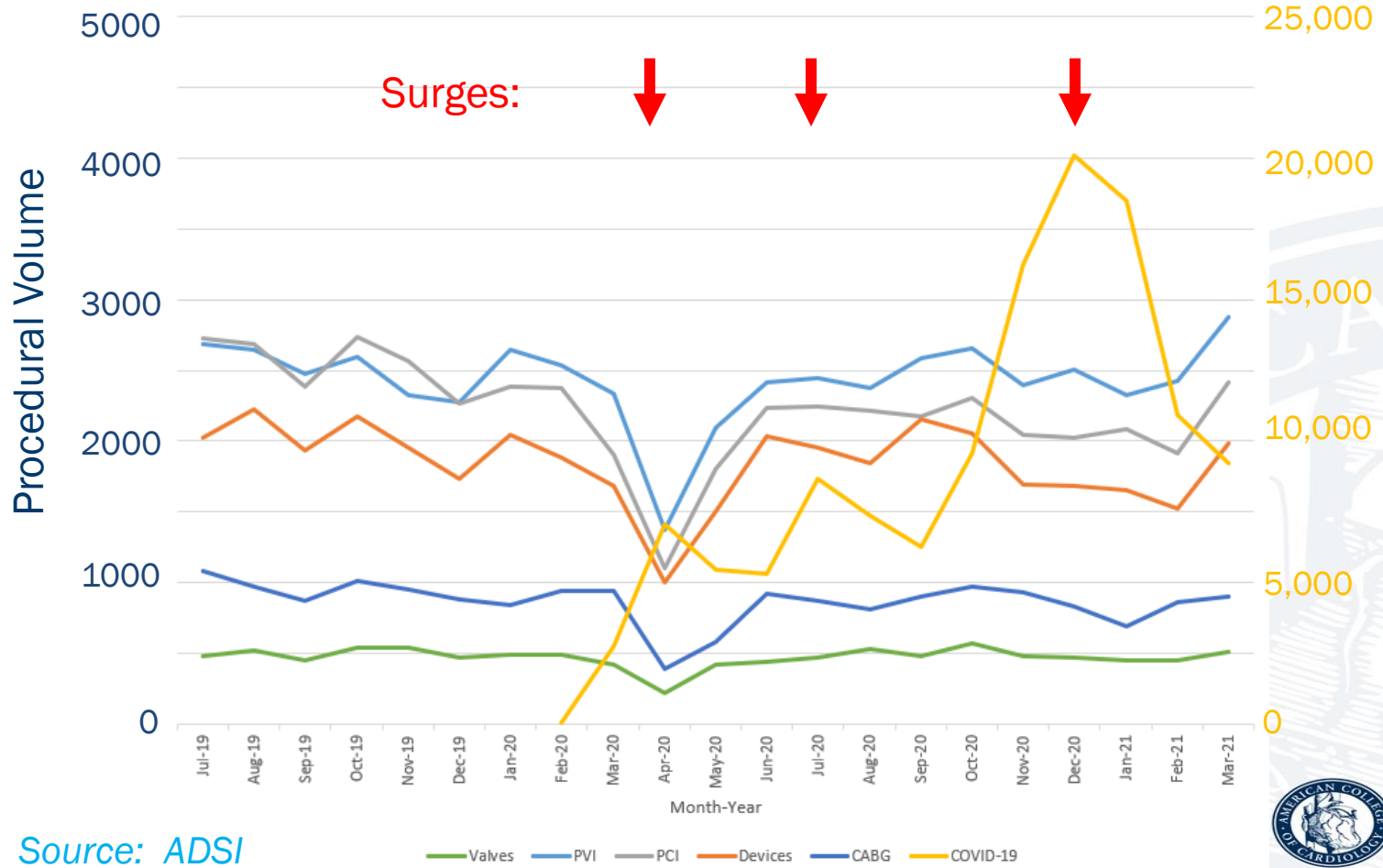
Garcia, S. et al. JACC 2021;77:1994-2003



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### Ascension-Wide FY20/1 Specific CV Procedures by Category



COVID-19 Patients

Source: ADSI



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# COVID Risks: Health Inequity

Rate ratios compared to White, Non-Hispanic persons	American Indian or Alaska Native, Non-Hispanic persons	Asian, Non-Hispanic persons	Black or African American, Non-Hispanic persons	Hispanic or Latino persons
Cases <sup>1</sup>	1.7x	0.7x	1.1x	1.9x
Hospitalization <sup>2</sup>	3.5x	1.0x	2.8x	2.8x
Death <sup>3</sup>	2.4x	1.0x	2.0x	2.3x

Race and ethnicity are risk markers for other underlying conditions that affect health, including socioeconomic status, access to health care, and exposure to the virus related to occupation, e.g., frontline, essential, and critical infrastructure workers.

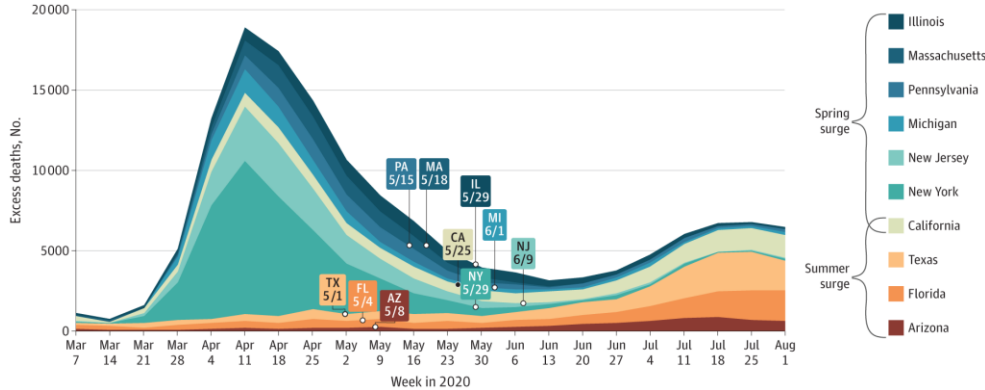
## Social Determinants of Health

CDC Sept 9, 2021: <https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html>



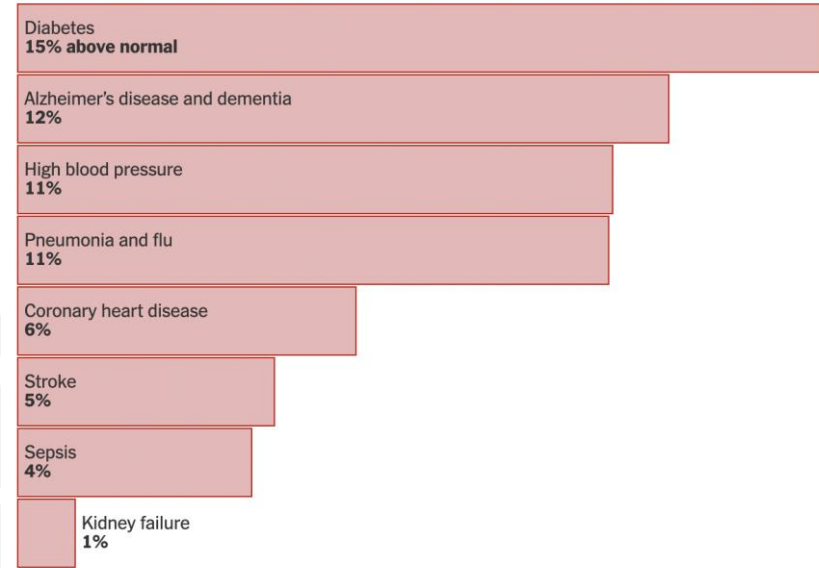
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# Excess Deaths During COVID-19 Pandemic



- Life expectancy 1 year lower in 2020
- 23% increase from expected deaths
- 25% higher in Black patients
- Temporal/Geographic differences
- 28% not fully explained by COVID-19

## Deaths attributed to other causes above normal



Note: Data are from March 15 to Nov. 14. Not all causes are included. Deaths from external causes, such as suicides and drug overdoses, are not available because investigations are still underway in most cases.

# Economic Headwinds for 2022 and Beyond

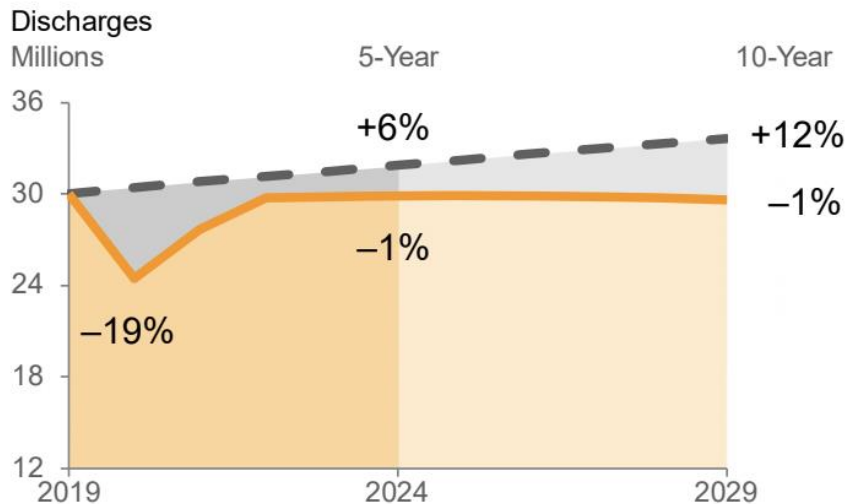
- Volumes (inpatient and outpatient) slow to return
- Shift to outpatient care (lower cost, lower revenue)
- Federal support ended (PHE), Telehealth coverage in jeopardy long term (protected until 2024)
- Change in Payer mix (>70% Non-commercial)
- Inflation, Increased cost of care – driven by labor costs



# Impact of COVID-19 on CV Practice.

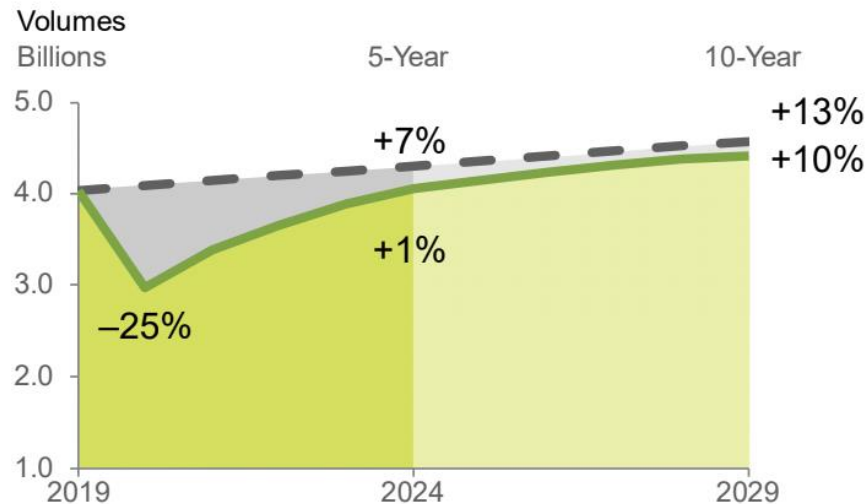
## Adult Inpatient Forecast

Impact of Change® 2020



## Adult Outpatient Forecast

Impact of Change® 2020



■ Sg2 IP Forecast ■ Population-Based Forecast ■ Sg2 OP Forecast

Sg2, July 2020

Slow recovery, accelerating move to out-patient



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# Health Care Professionals: Critical Condition



- 3600 HCW in U.S. died from COVID in 2020 (115,000 worldwide)
- 22% of RN's may leave nursing in the next year, 25% PTSD
- 30% of RN's are >60 years old
- Only 8% of new RN's want to do bedside nursing = crisis!

[1. https://khn.org/news/article/us-health-workers-deaths-covid-lost-on-the-frontline/](https://khn.org/news/article/us-health-workers-deaths-covid-lost-on-the-frontline/)

[2. https://www.forbes.com/sites/coronavirusfrontlines/2021/08/09/covid-19-has-ravaged-the-global-healthcare-workforce-we-need-to-invest-in-their-future/?sh=15beb336dd05](https://www.forbes.com/sites/coronavirusfrontlines/2021/08/09/covid-19-has-ravaged-the-global-healthcare-workforce-we-need-to-invest-in-their-future/?sh=15beb336dd05)

[3. https://www.aha.org/system/files/media/file/2021/05/fact-sheet-workforce-infrastructure-0521.pdf](https://www.aha.org/system/files/media/file/2021/05/fact-sheet-workforce-infrastructure-0521.pdf)

[4. https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/nursing-in-2021-retaining-the-healthcare-workforce-when-we-need-it-most](https://www.mckinsey.com/industries/healthcare-systems-and-services/our-insights/nursing-in-2021-retaining-the-healthcare-workforce-when-we-need-it-most)



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# Workforce Crisis: Nursing

Headwinds and tailwinds – state of the nursing profession includes COVID-19 impact

commitment.  
courage.  
compassion.

## Declining workforce

**510K**

**RN shortfall by 2030**  
(expected to grow due to COVID pandemic).

South and West regions of the US expected to have hire shortages.

The annual growth in RN jobs projection has grown from

**175,000**

pre-pandemic to

**200,000**

per year through 2026.



**21% of nurses**

have indicated they would **transfer to non-patient care roles** after the pandemic.

**10% of nurses**

are reporting plans to **leave the profession** after the pandemic.

**22% of nurses**

are reporting they will **retire soon** after the pandemic.

**RN vacancy rate** has grown to **10% nationally today**



ASCENSION NURSING | Center of Excellence



The **RN recruitment difficulty index** has grown to

**81 days**

with **OR and ICU nurses** being the highest at

**93 and 91 respectively.**

However, **med surg** does not fall far behind at

**76 days.**

## Clinical practice opportunities

Emerging literature regarding the growing gap for transition to practice **8% of nursing graduates** are prepared for entry level practice, dropping from **23% in 2015.**

Emerging nursing literature demonstrates **poor EHR usability** leads to **increased burnout, decreased job satisfaction and intention to leave.**

**RN burnout** has grown as a result of the pandemic to **94% of nurses** reporting some level of burnout.



**National annual turnover 2020**  
(with COVID impact)

**18.7%**

with the **Southwest, North Central and South Central** regions of the US having turnover at

**19.2 -24.9%**

(These are the regions Ascension practices within.)

## Changing landscape

COVID pandemic has increased the **gap in transition to practice** and knowledge for new graduate nurses. First year turnover has grown to **30% nationally.**

Increasing **experience-complexity gap** demonstrated through shift in CMI.

Call from the **AACN, AONL, RWJ foundation** and nurses have a **population health responsibility** regardless of their education level or their work assignment.



**Changing economic landscape** decreased interest in nursing support roles.

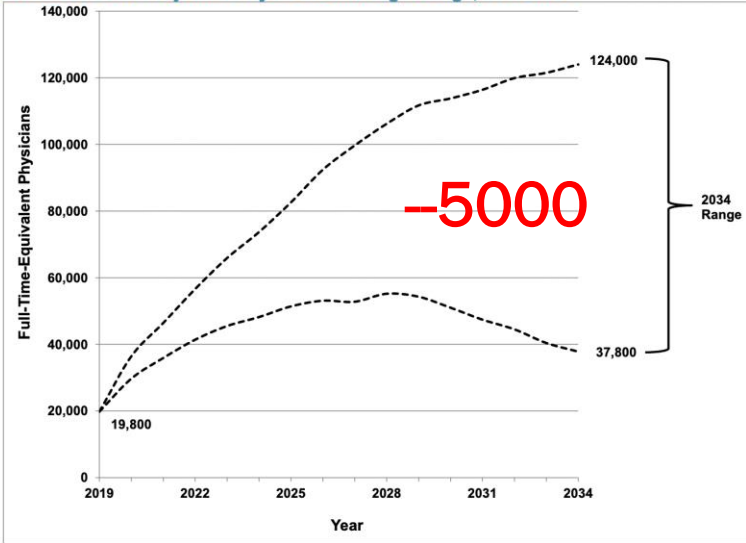
Great "Resignation" vs Great "Re-Think" **Ranjay Gulati HBR 2022**



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# Physician Workforce Shortage


Exhibit 2: Total Projected Physician Shortage Range, 2019-2034



AAMC. "Complexities of Physician Supply and Demand: Projections from 2019 to 2034. June 2021

## SHORTAGE OF CARDIOLOGISTS


**MEDAXIOM**  
AN ACC COMPANY



### -547 per year

US CARDIOLOGY PROJECTIONS

Practicing Cardiologist <sup>1</sup>	32,000
Over the Age of 61 <sup>2</sup>	8,480
Estimated Annual FTE losses <sup>3</sup>	(2,000)
Current Total US Fellows <sup>4</sup>	3,745
Annual Number Entering Workforce <sup>4</sup>	1,453
<b>Net Annual Workforce Impact</b>	<b>(547)</b>

<sup>1</sup> Source: Joint American College of Cardiology (ACC)/MedAxiom calculations  
<sup>2</sup> Source: MedAxiom Cardiovascular Provider Compensation & Production Survey  
<sup>3</sup> Source: MedAxiom projections based on both wRVU production reductions and physician departures  
<sup>4</sup> Source: Accreditation Council for Graduate Medical Education, 2018 - 2019

**1 IN 4 CARDIOLOGISTS**

(26.5%) is now over the age of 61!!

**7,563 MEDIAN**

wRVUs per FTE over age 61 (9,642 overall)

There's a whole FTE missing here

COPYRIGHT ©2021 MedAxiom – An ACC Company

Sauer J. MedAxiom 2021

**Drivers:** Aging, Burnout, Slow Down, Deferred Retirement

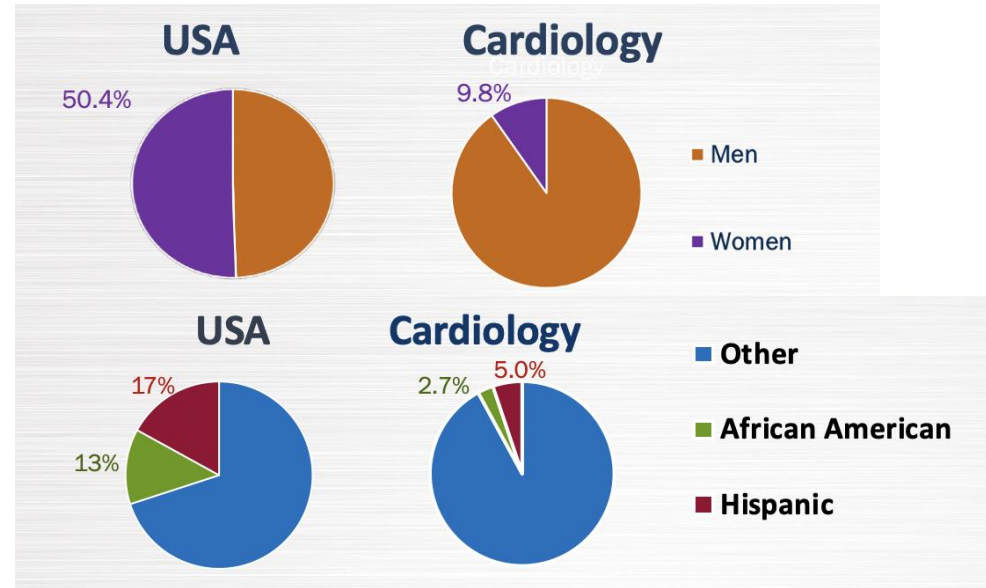


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# Cardiology: Reflecting the Communities We Serve?

## Challenges:

- ACGME CV Training Programs:
  - 4% Non-Hispanic Black (3% Black Faculty)
  - 6% Hispanic
- Women in Cardiology = 10% in practice (fewer in EP and IC)
  - 50% in Med School
  - 37% in IM
  - 21% in Cardiology (10% IC)



*Ranna Parekh, MD, MPH,  
ACC Director, D&I, 2020*

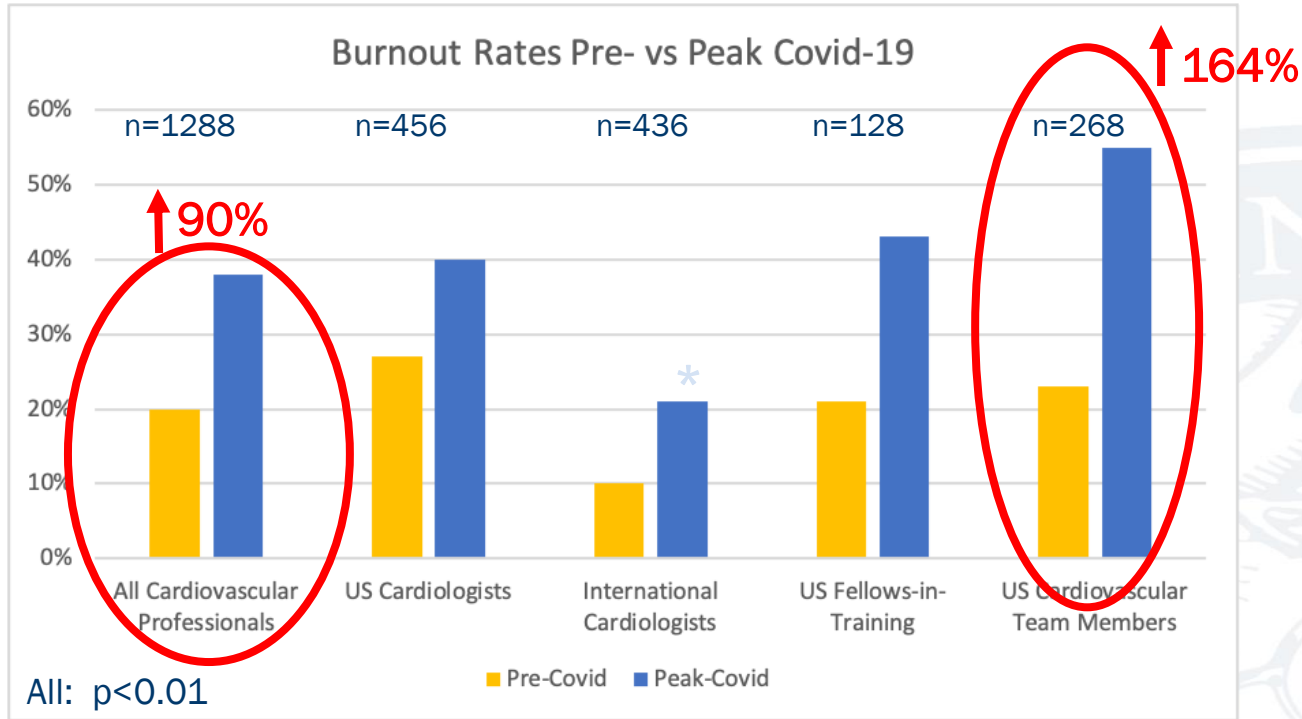


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American College of Cardiology  
Diversity and Inclusion Initiative



# Clinician Burnout



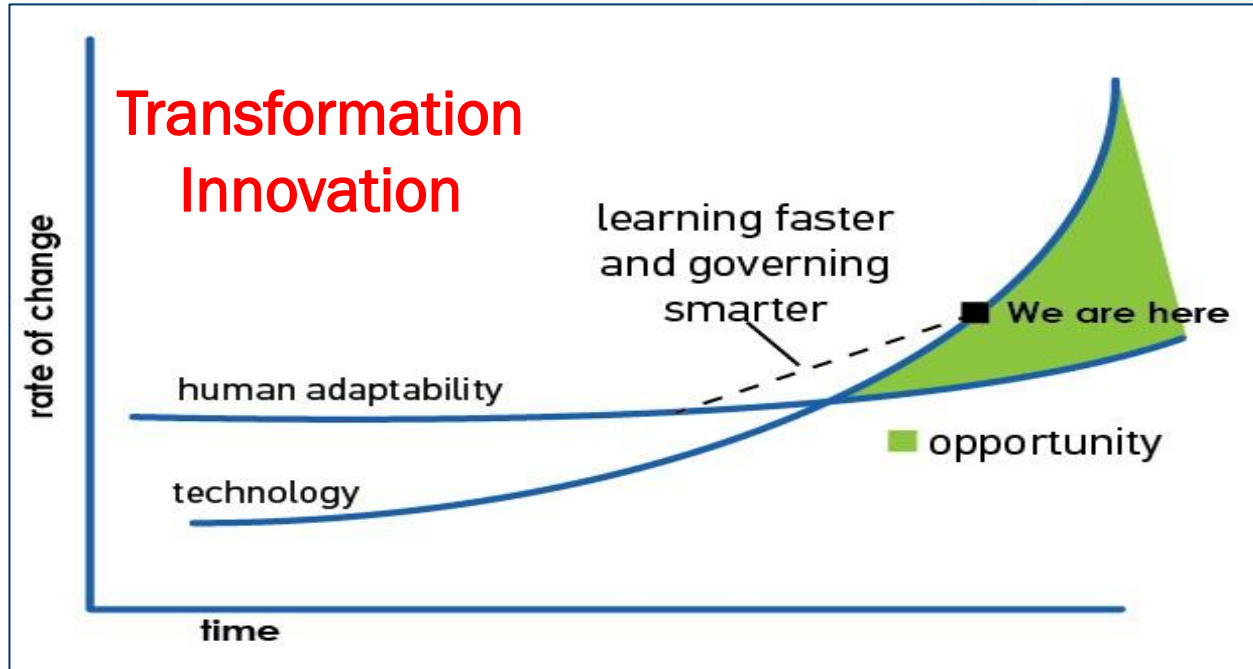
\*International numbers later caught up to U.S.





# Adapting to Change: Eric “Astro” Teller’s Curve

*Thank You for Being Late – Thomas Freidman, 2016, p. 34*



# CV Workforce Shortage: Care Transformation



- Reduce low-value care
- Clinical “Guidance”
- Actionable Knowledge/Data
- True “Team Based Care” – Re-engineer
- Advocacy: Remove Burdens, Align Incentives
- Innovate!



# CV Management in COVID-19: “Old Dogs, New Tricks”

## Pre-COVID

Cath/PCI

Stress Testing

Echocardiography

TEE/TEE-Cardioversion

Consultation

CRM Device F/U

CHF



## “COVID Modified Management”

CCTA/SDD

Pharm MPI, stress cMRI, CCTA, CT-FFR

Limited-View Echo, POCUS

Cardiac CTA, CMRI

Video Consultation/e-Consultation

Remote Device Monitoring

Tele-Clinic, RPM



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# 1962 ----- Innovation? ----- 2022



Practice waiting room - then



Practice waiting room - now



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# CV Workforce: Innovation



## ACC Innovation Program

- “Collaborative AI”
- Robotics
- Remote Monitoring
- Analytics
- Clinical Decision Support
- Implementation Science
- Virtual Care/Telehealth



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# Virtual Care



Tele-In-Home Care

Cardio-Telehealth

AI-linked PROM RPM

Digital "Prescriptions"

# Remote Monitoring

Bio-sensor monitoring

POC Imaging

RPM Software

AI-Assisted CTA



# Analytics

NLP/AI-Abstraction

CDSM

Digital Health Eco-System

ACC Innovation Program

Payment model  
Home care  
Care pathways

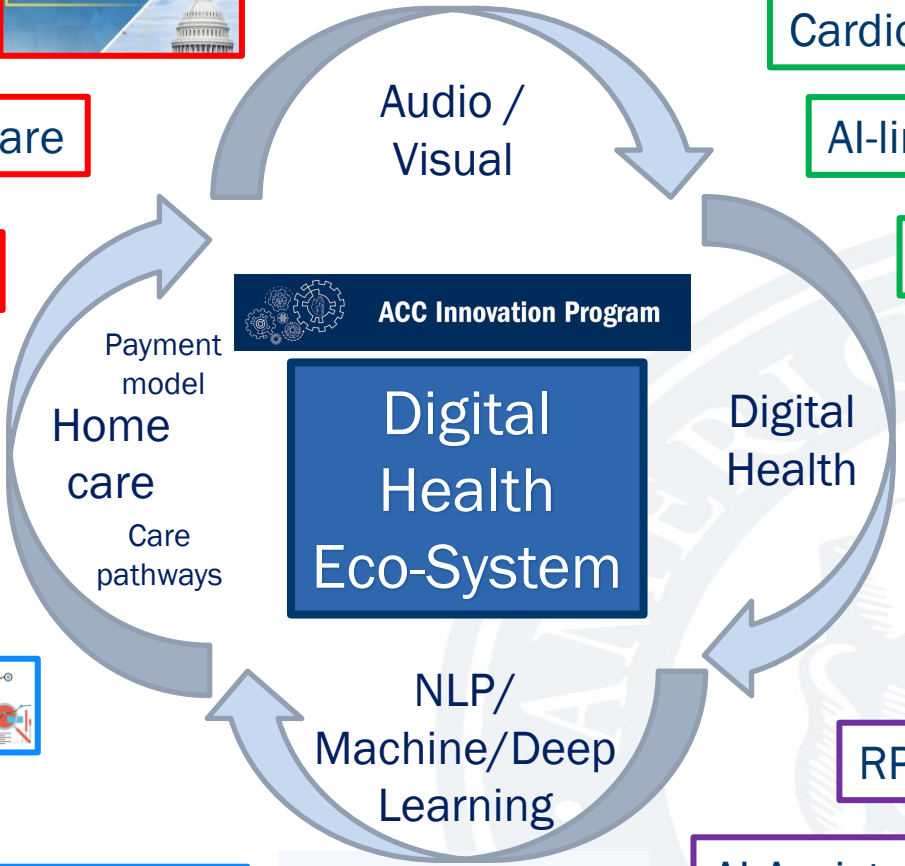
Digital Health

Audio / Visual

NLP/  
Machine/Deep Learning

# Digital Care

Novel Med. Hardware.



# CV Workforce Shortage: Supply

- Physicians

- Shorten Training: IM -> General -> Sub-Specialty
- Increased Training Slots: Medicare vs Independently Funded
- Extend Careers: “Step down, not out”, “Senior Cardiologists”
- Rational Immigration Reform

- Nurses

- Increase Nursing School Enrollment: Faculty and Preceptorships
- Team Based Nursing
- Nursing support functions
- Family Care Support/Schedule Flexibility



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## Care Transformation It Is Our Mission

Edward T.A. Fry, MD, FACC, *President, American College of Cardiology*



In every facet of life, “change” has become the new constant; socially, scientifically, financially, and politically. Cardiovascular (CV) medicine has both led and been impacted by an acceleration in the rate of change, for both better and worse. “Medicine,” the scientific discipline describing wellness and disease, and “health care,” the practical application of those scientific principles to prevent, detect, and treat disease, are different but inextricably intertwined and interdependent. Advances in medicine and medical science, as well as changes in society, have out-

personal worlds are shifting rapidly under their feet with a limited capacity to adapt. In health care, the underlying forces and factors leading to this tipping point were present well before the pandemic but clearly their impact has been exposed and magnified by COVID.

So, how do we and our patients stay ahead in the race between change and adaptation? Well, as Friedman and Teller propose, we must “learn faster and govern smarter.” This is the essence of transformation: to not only react to a changing environ-

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## Resigned to the “Great Resignation?”

Edward T.A. Fry, MD, FACC, *President, American College of Cardiology*



What would happen if NASA was about to launch a manned spaceship, but there were not enough Mission Control personnel to staff the command center, or not enough flight engineers to conduct the launch, or not enough astronauts to pilot the space craft? The mission would be postponed, a great deal of money would have been wasted, and the situation would be embarrassing for

ago by the 2009 American College of Cardiology (ACC) Board of Trustees Workforce Task Force.<sup>2</sup>

On the demand side, >10,000 U.S. citizens turn 65 years of age every day. According to U.S. Census projections, >70 million U.S. citizens will be 65 or older by 2030, which includes all “baby boomers.”<sup>3</sup> With the development of various “blockbuster” medications, increased use of statins and control of

# What is ACC Doing to Address the Problem?

- Advocacy: GME, Tele-Med, Payment Reform
- Pipeline: Young Scholars, IM Res. Program, D&I
- Care Delivery: Clinical Guidance, MedAxiom
- Reduce Demand: Prevention, VBC
- Digital Transformation, Actionable Data
- ACC Innovation Council (IDWG)
- Leadership Training, Non-Clinical Competency
- Clinician Wellness, Professionalism
- Team Based Care – Health Policy Statement
- Presidential Task Force – Report ACC23

# Recovering from COVID:

A return to “normal” is failure.

We must seize the moment to truly  
Transform and Innovate CV Care



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*“Man Helping Man”  
Harrold Kimmelman  
ACC Heart House  
Washington, DC*

# How do we transform? First ... reach out, listen

- Patients
- **Members**
- **Chapters**
- BOG/BOT
- Sections
- Councils
- FIT's/ECP
- Communities





# Thank you for listening. Questions?



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