Reducing Atherosclerotic Cardiovascular Disease (ASCVD) Risk with a Population Health Approach

Key Opinion Leader (KOL) Summit: Preventive Cardiovascular Nurses Association (PCNA)

June 17, 2021

Background

The American Heart Association(AHA) estimates that 126.9 million Americans are living with one or more forms of cardiovascular disease (CVD) and an estimated 93.9 million American adults have elevated blood cholesterol levels.[i] Elevated low-density lipoprotein cholesterol (LDL-C) is well understood to be directly associated with the development of atherosclerotic cardiovascular disease (ASCVD), leading to increased risk for heart attack, stroke and peripheral artery disease. Despite advances in pharmacologic treatment of dyslipidemia, high cholesterol remains a significant public health problem in the U.S, with more than 25% of adults aged 40–74 having high LDL-C levels.[ii]

The AHA and American College of Cardiology(ACC) updated the adult treatment guidelines for the management of cholesterol in November 2018[iii]. While statins remain the first-line therapy for lowering LDL-C, a significant portion of the population, including those considered high-risk, are receiving sub-optimal or no treatment to lower their cholesterol. Optimizing cholesterol for people with coronary heart disease or stroke is one of the goals for the Healthy People 2030 initiative to reduce health disparities and improve the overall health of the U.S. population. Utilizing a population health approach to care includes a wide range of stakeholders working together to implement primary and secondary prevention measures, improving the health of the population.

To address barriers to optimal primary and secondary prevention of ASCVD, the Preventive Cardiovascular Nurses Association(PCNA) coordinated and hosted a virtual roundtable summit meeting on June 17, 2021, with key stakeholders from the continuum of care. Fourteen participants were purposefully selected from diverse geographical and practice settings, including health care providers in primary care, emergency medicine, cardiology, cardiopulmonary rehabilitation, pharmacy, health policy/advocacy and patient groups.

GOALS

Goals of the roundtable summit included:

- Review and discuss current research regarding population health strategies, as they apply to the optimal management of patients with ASCVD
    - Current outcomes and risk data associated with treatment gaps for ASCVD
    - Potential gaps or shortfalls in the system and how they may be addressed
- Identify and share best practices to address potential gaps or system shortfalls
- Identify specific information and messaging related to ASCVD that aligns with, or should be integrated into, existing or newly-developed stakeholder efforts

- Develop recommendations for professional societies and healthcare providers that prioritize action-oriented initiatives
- Outline methods for individual organization strategies and options for increasing collaboration to enhance efforts

Objectives

The objective of the summit was to improve understanding of a population health/systems approach to ASCVD prevention and management through:

- Facilitating constructive discussion among key stakeholders
- Evaluating the landscape of established and emerging barriers
- Developing a consensus-based, multi-pronged strategy to improve patient management
- Making recommendations for professional society and patient organization advocacy and engagement
- Encouraging robust collaboration across stakeholder groups following the summit

Participants (KOLs)/Organizations Represented*

- **American Assoc. of Cardiovascular and Pulmonary Rehabilitation (AACVPR)**
  - Kate Traynor RN, MS, MAACVPR
    Massachusetts General Hospital, Boston, MA
- **American Assoc. of Nurse Practitioners (AANP)**
  - Leslie Davis, PhD, ANP-BC, FAANP
    University of North Carolina, Chapel Hill, NC
- **Assoc. of Black Cardiologists (ABC)**
  - Karol Watson MD, PhD, FACC
    University of California Los Angeles, Los Angeles, CA
- **American College of Cardiology (ACC)**
  - Carla Weidner DNP, FNP-BC, CLS, AACC, FNLA
    St. Lukes University Health Network, Bethlehem, PA
- **American College of Emergency Physicians (ACEP)**
  - Christopher Baugh MD, MBA
    Brigham & Women's Hospital, Harvard University, Boston, MA
- **American Heart Association/Council on Cardiovascular and Stroke Nursing (AHA/CVSN)**
  - Theresa Beckie PhD, MN, RN, FAHA, FAAN
    University of South Florida, Tampa, FL
- **American Pharmacists Association (APhA)**
  - Sarah Billups PharmD, BCPS
    University of Colorado, Anshutz Medical Campus, Aurora, CO
- **American Society for Preventive Cardiology (ASPC), InterAmerican Heart Foundation**
  - Nathan Wong PhD, MPH, FACC, FAHA, FNLA, FASPC
    University of California, Irvine, CA
- **Million Hearts**
  - Laurence Sperling MD, FACC, FACP, FAHA, FASPC
    Emory University, Atlanta, GA
- **National Forum for Heart Disease and Stroke Prevention**

    - Kim Stitzel, MS, RD
      Stitzel Health and Well-Being LLC, Southlake, TX
- **National Lipid Association (NLA)**
    - Kaye-Eileen Willard, MD, FNLA
      Ascension Health, All Saints Hospital, Racine, WI
- **Preventive Cardiovascular Nurses Association (PCNA)**
    - Yvonne Commodore Mensah PhD, MHS, RN, FAAN, FAHA, FPCNA, **Summit Moderator**
      Johns Hopkins University, Baltimore, MD
    - Cheryl Dennison Himmelfarb PhD, RN, ANP, FAAN, FAHA, FPCNA, **Keynote Presenter**
      Johns Hopkins University, Baltimore, MD
    - Sue Koob, MPA, CEO
      PCNA, Madison, WI
    - Jane Nelson Worel, RN, MS, ANP-BC, Clinical Education Director (*Ret*), **Summit Planner**
      PCNA, Madison, WI
- **WomenHeart**
    - Lyn Behnke DNP, FNP-BD
      University of Michigan, Flint, MI

*APPENDIX A – Bio Sketches - Key Opinion Leaders

Keynote Presentation

Introduction

Although there has been substantial improvement in many ASCVD outcomes in recent decades, ASCVD remains the leading cause of morbidity and mortality globally[iv]. In fact, over the last decade, we have lost gains as CVD-related mortality has increased for both women and men in the US. ASCVD is also the leading cause of death in the US for most racial/ethnic groups, with an estimated cost of over $200 billion annually in healthcare services, medications, and lost productivity.[i] Geographic disparities in mortality rates related to CVD and stroke persist. Much of the excess mortality is attributable to the sub-optimal implementation of prevention strategies and uncontrolled ASCVD risk factors in adults.[i]

The global CVD-related death toll for 2019 was near 18.6 million, an increase of more than 26 percent over 2010. COVID was the third leading cause of death in the US in 2020.[v] The long-term effects, direct and indirect, of the COVID-19 pandemic may cause rates of CVD and associated mortality to grow "exponentially" over the next few years due to virus-related damage to the heart, damage caused by lack of timely medical care, and the impact of behaviors known to increase the risk of CVD and stroke, including poor eating habits, increased use of alcohol, decreased physical activity, and the emotional stress of isolation.[v]

The AHA has defined ideal cardiovascular health (CVH) based on the Life's Simple 7 risk factors that people can improve through lifestyle changes: smoking status, physical activity, weight, diet, blood glucose, cholesterol, and blood pressure. Presence of ideal CVH varies by race and ethnicity. Black and Hispanic people have fewer metrics at ideal levels than White people or other races. Having four or more ideal health criteria is most common among Asian adults(48%) followed by White (38%), Hispanics(34%, Black (30%) and other adults (24%).[i] Importantly, several social determinants (low family

income, low education level, minority race, and single-living status) were related to a lower likelihood of attaining better cardiovascular health as measure by Life's Simple 7 scores. Data, on ideal CVH among children, suggest that a life course approach is essential in our quest to promote cardiovascular population health. [i]

The Role of Health Disparities

Health outcomes, including both quality and length of life, are the result of health factors and the impact of policies, programs, or practices on an individual or community. Health outcomes reflect the well-being of a community. Several factors contribute to an individual's or community's health and include health behaviors (tobacco use, diet, exercise, alcohol use), clinical care (access to high-quality health care), social and economic factors (education, employment, income, community safety, social support), and physical environment (air and water quality, housing and transportation). Policies, programs and practices greatly influence the health outcomes of an individual or community and include preventive and treatment interventions that promote health as well as community issues, such as access to healthy foods and green spaces, and can have a great influence on a community's health. Consideration for health in all policies, programs and practices can prevent unintentional disparities in health. To drive meaningful reductions in CVH disparities, in addition to addressing health behaviors and clinical care, we must simultaneously address social, economic, and physical environment factors, commonly referred to as social determinants of health.[vi]

We must ask, "what is our role in identifying and dismantling structural racism that sustains longstanding health disparities?". It is becoming increasingly clear that one's zip code is better than one's genetic code in predicting health and health outcomes. The neighborhoods of Roland Park and Clifton-Berea in Baltimore, Maryland, provide us with a stark example where two neighborhoods, that lie a mere five miles apart, are worlds apart with a 15-year gap in life expectancy.

Worlds Apart Though the Distance is 5 miles

	Roland Park	**Clifton-Berea**
Life Expectancy	83.9 years	66.9 years
Death Rate from Heart Disease	13.6 per 10,000	27.7 per 10,000
Death Rate from Stroke	5.1 per 10,000	6.9 per 10,000
Median Household Income	$104, 482	$25,738
Highest Education: ≤High School Diploma	7%	63.3%
Unemployment Rate	2.3%	17.4%
% Land Covered by Food Dessert	0%	47.9%
% Land Covered by Green Space	63.6%	11.8%

Source: Baltimore City Neighborhood Health Profile Reports 2017

There are multilevel influences on cardiovascular health disparities. These include local/community factors and built environment, health care providers awareness and knowledge, patient's health literacy, insurance and adherence to treatments, national health policy including Medicare reimbursement, State

health policy including Medicaid coverages and health exchanges, health care organizational structure and resources, and family and social support. [vii]

The ACC/AHA commissioned the 2019 Guideline on the Primary Prevention of Cardiovascular Disease to consolidate existing recommendations and various recent scientific statements, expert consensus documents, and clinical practice guidelines into a single guidance document focused on the primary prevention of ASCVD. This guideline includes recommendations for aspirin use, cardiometabolic risk management, exercise and physical activity, and tobacco use, in addition to recommendations related to team-based and patient centered-care, shared decision making, assessment of social determinates of health, and assessment of risk, to create a comprehensive yet targeted guideline of the prevention of ASCVD.[viii] Our impact on improving cardiovascular health and reducing inequities is dependent on our success in translating these evidence-based recommendations into practice and high-level adoption at the population level.

Defining Population Health

Population health is defined as the health outcomes of a group of individuals, including the distribution of such outcomes within the group.[ix] These groups are often geographic populations such as nations or communities but can also be other groups such as employees, ethnic groups, disabled persons, prisoners, or any other defined group. Foundational capabilities of population health are 1) understanding populations, 2) engaging in new partnerships, 3) taking system-level action, and 4) measuring and sustaining progress.[ix] [x] Health equity is achieved through a focus on integrated-care models, chronic and complex care management, and community partnerships driving improvement in two dimensions, community well-being and population health management. Population health is an evolving strategic toolkit for innovation, focused on driving transformation to improve the health of individuals and communities.

Best practice strategies to achieve heart health, in a given population, include both healthcare system interventions and community-clinical links. Health care systems have the potential to improve the delivery and quality of care in clinical settings. Effective strategies in this domain can lead to earlier detection, improved disease management, and even prevention of the onset of CVD. When connected to health systems, community programs can improve chronic disease prevention, care and management Effective links can reduce barriers to care and increase patient adherence to clinician recommendations.[xi]

Learning Health Systems and Population Health

Achieving optimal population cardiovascular health requires an interdisciplinary team and a learning healthcare system. Learning health systems (LHS) follow a model of continuous care delivery improvements including collecting metrics, analyzing data, interpreting findings, implementing strategy, and changing practice. Interdisciplinary team members include epidemiologists, biostatisticians, healthcare professionals, information technology specialists, bioethicists, patients, families, and communities. Evidence-based interventions supporting enhanced ASCVD prevention and management are frequently underutilized due to the complexity of translating guidelines and recommendations into practice. Health systems that use guideline-oriented performance measures consistently are those best poised to achieve the vision of being an LHS and to report performance to health insurers and other key partners. De-implementation – the reducing or stopping use of ineffective, harmful, low-value and/or

unproven interventions, practices, and programs – is particularly important for population CVD interventions that may occur during already time-strapped clinical encounters. To advance population CVH management, the development and testing of frameworks, methods, measures outcomes, and strategies that address issues specific to de-implementation is important. Health equity-based approaches, in the context of a learning healthcare system, include addressing social determinants of health, eliminating health disparities, making healthy choices the default, and creating accessible and affordable healthcare as a background to the goal of using data to measure and improve practice resulting in stopping preventable diseases.[xii]

Kaiser Permanente Washington Health Research Institute (KPWHRI) developed a roadmap for organizations that want to establish an LHS program, understand how LHS Core components relate to one another when operationalized in practice, and evaluate and improve their progress. The core purpose of an LHS is to accelerate evidence into practice. The KPWHRI model identifies essential elements for establishing a nLHS (the inputs), clarifies specific LHS operational activities (the outputs), and defines key outcomes to evaluate processes and impact of an LHS (the outcomes). [xiii]

For a health system that wants to create an LHS, an important first step would be to examine the inputs – the key ingredients that you need to get started, such as funding to support the work and a health information infrastructure that can provide relevant data to the people who need it for decision-making. Looking at those inputs and using the measures in the model to evaluate the current state would give an organization a concrete way to assess its readiness for launching an LHS. Health systems that already have an LHS might be more interested in looking at the outputs and the outcomes – the key activities an LHS should engage in and how you measure their impact. This could provide insight into where an LHS is facing important gaps that limit its productivity or effectiveness. For example, perhaps an LHS has already mastered key activities like conducting rapid literature reviews and synthesizing evidence. But maybe they haven't yet explored patient and family engagement. Or maybe they've started to engage patients and families through focus groups or interviews, but they're not sure how to evaluate those efforts.

Health care systems that have made significant and sustained progress in quality have devoted time, people, and resources. An example from Kaiser Permanente illustrates the multiple components that may be required to achieve high performance. Between 2000 and 2013, Kaiser Permanente-Northern California improved blood pressure control among patients with hypertension from 44% to 90%. The region undertook a coordinated effort with 6 critical components: leadership commitment, developing and building a hypertension registry, creating and updating an evidence-based guideline that included a drug treatment algorithm, routine feedback to medical centers and physicians on performance, medical assistant blood pressure visits without copays, and incorporating a single-pill combination medication. This systems approach, with the work of everyone on the team aligned, has been replicated in other clinical areas with similar significant improvements in performance.[xiv]

The Role of Electronic Health Records and Digital Health Technology

Electronic health records (EHR) and other digital health technology and web-based clinical decision support tools have demonstrated improved ASCVD health measures in a number of settings. The SPHERE Study[xv] incorporated a CVH risk assessment, visualization, and decision-making tol that

automatically populates with EHR data during the primary care encounter in order to encourage patient-centered CVH discussions among at-risk, yet undertreated, populations. The CVH of women in the intervention clinic improved relative to the metrics of BMI (16% to 21% ideal) and diabetes (62% to 68% ideal), but not for smoking, total cholesterol, or blood pressure. Meanwhile, the CVH of women in the control clinic either held constant or worsened slightly, as measured using those same metrics. Providers need easy-to-use tools at the point-of-care to help patients improve CVH. SPHERE demonstrated that the EHR could deliver such a tool, using an existing AHA framework, and noted small improvements in CVH in the patient population.[xv]

Priorities Wizard is an EHR linked, web-based clinical decision support (CDS) tool. Through a series of National Institutes of Health-funded projects led by HealthPartners Institute and the Health Partners Center for Chronic Care Innovation and HCSRN partners, Priorities Wizard has been evaluated in cluster-randomized trials and expanded to include over 20 clinical domains. The CDS system identifies patients who could substantially benefit from evidence-based actions, presents prioritized evidence-based treatment options to both patient and clinician at the point of care, and facilitates efficient ordering of recommended medications, referrals, or procedures. The CDS system significantly improved glucose and blood pressure control in diabetes patients, reduced 10-year ASCVD risk in high-ASCVD risk adults without diabetes, improved management of smoking in dental patients, and improved high blood pressure identification and management in adolescents. The CDS output was used at 71-77% of targeted visits, 85-98% of clinicians were satisfied with the CDS system, and 94% reported they would recommend it to colleagues.[xvi]

Digital health technology has the potential to significantly improve the quality and efficiency of healthcare; however, uptake of digital health technology has been slow in clinical practice. Recommendations to increase digital health technology target multiple levels[xvii] and include:

- Capitalize on human-centered design principles
- Test and validate digital health technologies in clinical settings
- Ensure compliance with data privacy and security policies
- Integrate digital health technologies with EHR and existing processes
- Price digital health technologies fairly and increase internet access
- Develop and enforce regulations, policies and guidelines
- Reimburse clinicians for using digital health technology to deliver care
- Invest in technology that reduces workload
- Provide training to patients and clinicians
- Provide digital health technology supports to patients and clinicians

Health Literacy and Shared Decision Making

To achieve good health outcomes, people need understandable health information and easy access to health services. The complexity of the health system, however, confuses even those with adequate health literacy and endangers those with limited health literacy. It is estimated that a third of US adults have low health literacy. The Institute of Medicine's Health Literacy Round Table identified these 10 attributes[xviii] that form the foundation of a health literate organization:

1. Has leadership that makes health literacy integral to its mission, structure, and operations.
2. Integrates health literacy into planning, evaluation measures, patient safety and quality improvement.
3. Prepares the workforce to be health literate and monitors progress.
4. Includes populations served in the design, implementation, and evaluation of health information and services.
5. Meets the needs of populations with a range of health literacy skills while avoiding stigmatization.
6. Uses health literacy strategies in interpersonal communications and confirms understanding at all points of contact.
7. Provides easy access to health information and services and navigation assistance.
8. Designs and distributes print, audiovisual, and social media contnet that is easy to understand and act on.
9. Addresses health literacy in high-risk situations, including care transitions and communications about medicines.
10. Communicates clearly what health plans cover and what individuals will have to pay for services.

Shared decision making (SDM) is a recommended strategy to help improve patient buy-in and adherence to recommended treatments. Collaborative decisions are more likely to address potential barriers to treatment options. Decision aids and tools may be useful to clinicians and patients who need guidance to participate in SDM. ASCVD risk stratification is recommended to inform and guide preventive strategies and treatment decisions. It is central to shared decision making, however, uptake in primary care has been slow. The most common barriers to risk stratification[xix] are:

- Time constraints to use of a calculator
- Limitations to accessing a calculator or the necessary information to use a calculator
- No or minimal buy-in from clinicians or staff to use a calculator
- Reported patient fear of side effects from statin medications or patient dislike of taking medications per the guidelines
- Lack of documented clinic workflow for using a calculator

To improve the uptake of ASCVD risk calculation in primary care, intervention strategies must be tailored to common implementation barriers.

Success Stories

Researchers enrolled a cohort of 319 black male patrons with elevated systolic blood pressure (SBP) to participate in a hypertension control program. Los Angeles County barbershops were assigned to either a pharmacist-led intervention or an active control group. In the intervention group, barbers promoted follow-up with pharmacists who prescribed BP medication under a collaborative practice agreement with patrons' primary care providers. In the control group, barbers promoted follow-up with primary care providers and lifestyle modification. The mean SBP reduction was 20.8 mm Hg greater in the intervention group. A BP<130/80 mm Hg was achieved by 68% of the intervention group versus 11% of the control group. Cohort retention at 12 months was 90% in both groups. [xx] Scaled up barbershop-based BP control programs are projected to reach approximately 941,000 black men each year. If the programs reduced mean SBP by 20 mm Hg, they would avert 8,600 major adverse ASCVD events

annually relative to usual care, including 1,800 myocardial infarctions and 5,500 strokes. The programs would be cost-effective at $100,000 per quality-adjusted life-year gained if implementation costs were ≤ $1,440 per patient-year enrolled. [xxi]

The US IMPACT Food Policy Model, a computer simulation model, projected that a national policy combining a 30% fruit and vegetable subsidy targeted to low-income Supplemental Nutrition Assistance Program recipients and a population-wide 10% price reduction in fruits and vegetables in the remaining population could prevent 230,000 deaths by 2010 and reduce the socioeconomic disparity in ASCVD mortality by 6%. [xxii]

Million Hearts® is a National initiative, co-led by the Centers for Disease Control and Prevention (CDC) and the Centers for Medicare & Medicaid Services (CMS), with a goal of preventing 1 million heart attacks and strokes in 5 years. The initiative works with public- and private-sector partners to focus on advancing a set of strategies selected for the proven impact on preventing cardiovascular events. These strategies included:

- Translated the science of self-measured blood pressure monitoring (SMBP) into practice with the development of actionable resources.
- Convened a forum of more than 400 clinical, public health, and community-based partner members to facilitate the exchange of ideas, tools, and solutions to optimize SMBP use nationwide.
- Led Cardiac Rehabilitation Collaborative, a body of 400 health professionals taking action to increase cardiac rehabilitation participation.
- Recognized 118 Hypertension Control Champions, serving 15 million adults across 37 states, for achieving at least 70% blood pressure control.
- Supported National Association of Community Health Centers (NACHC to detect undiagnosed HTN, address underutilization of cholesterol-lowering meds for those at high risk and improve BP control for African Americans with diagnosed HTN.

In its first 5-year cycle (2012-2016), Million Hearts® prevented an estimated 135,000 heart attacks, strokes, and related acute cardiovascular events. In addition, $5.6 billion in direct medical costs, a substantial portion of which was saved by public insurance programs like Medicare and Medicaid.[xxiii]

The keynote address called on those KOL's attending to consider the following ASCVD risk reduction strategies:

- Build on population health fundamentals
- Employ best practices for healthcare system interventions
- Employ best practices to establish robust community-clinical links
- Build learning health systems that assess evolving needs; intervention uptake, sustainability, scalability; and continue to monitor impact and cost
- Optimize digital health technology infrastructure and uptake
- Aspire to be a health literate organization
- Engage partners across sectors
- Meet people where they learn, play, pray and work

Moderated Discussion Among Organizational Representatives

Four questions were posed to the Key Opinion Leaders for further discussion, recommendations, and explorations.

1. What are the major challenges and/or barriers to achieving optimal ASCVD risk reduction?

Challenges/Barriers
Limited resources: financial, staff, time
Education of Primary Care Providers (PCPs)
Silos in health care systems prevent team-based care
Health Care Providers (HCPs) not working at top of license
Lack of collaboration between organizations/reinventing the wheel
Lack of awareness and usage of tools available through Million Hearts and other organizations
HCP team lacks diversity
Gaps in the continuum of care; Emergency department (ED) providers not trained/resourced for prevention/chronic care and lack available PCP for follow-up
Payer model values intervention over prevention and specialists over PCP; disincentives for moving care from acute care to community setting; poor payment for risk assessment (eg CA+ scoring)
Health inequity, bias and underserved communities (rural and LGBTQ)
Uninsured and underinsured populations at risk
Poor access to medicines for uninsured/underinsured
Lack of awareness of ASCVD risk in at-risk populations
Too few community health workers to screen and address risk factor management
Low adoption of healthy lifestyles
Lack of incentives & support for healthy lifestyles
Poor utilization of EHR for population health & risk factor management
Data sharing capabilities (patient to clinician)
Poor awareness of genetic (lipid) disorders and lack of reimbursement for genetic testing

2. Who are the key stakeholders that need to be considered to achieve optimal ASCVD risk reduction?

Key Stakeholders
Patients (as partners)
Family members
Federal Government, Centers for Medicare Services (CMS)/Medicare, veterans administration (VA)
Third-party payers; health insurance industry
US Presidential Administration, Congress, Politicians
States, Medicaid
EHR software companies and experts
Food industry: farmers, grocery stores
Health care data holders: PBMs, HMOs
Pharma Companies and Foundations
Faith-based organizations; YMCA/YWCA other community-based organizations
Public schools and school food programs

Jails, Prisons, Detention centers
Tribal health leaders
Health care providers in acute and chronic care settings
Health psychologists and behavior change specialists/health coaches
National Assoc of Community Health Workers and Public Health Agencies, NACHC and FQHC
Home medical equipment companies
High profile organizations – NBA, NFL, coaches. Celebrity spokespersons

3. What are some best practice examples/successful interventions to achieve optimal ASCVD risk reduction?

Successful Interventions/Best Practices
Community screening and education
Processes that run 24/7
Public health media campaigns: know your numbers, activity vs sitting
Investment in National Organizations ie. Million Hearts®
Shared decision-making models
Patient self-management
Team-based and collaborative care; inclusiveness across all health care professional disciplines; pharmacist outreach; managed care; pharmacists in the ED
Medication adherence programs utilizing technology
Payer blind processes
Annual grants for practice improvement projects
Partnering with tech companies to get tools in the hands of patients for telehealth visits
Early education – positive health messages to families
Incentives for healthy food choices
Expanded access to community spaces for activity and exercise

4. How can organizations collaborate to achieve optimal ASCVD risk reduction?

Organizational Collaboration
Co-publishing position papers
Society endorsement of guidelines helps limit confusion and enhance congruence
Joint programming/scientific symposia
Capitalize on virtual opportunities for outreach
Unified agenda or strategy for implementation science
Joint advocacy efforts including state/local
Communication collaboration among organizations sharing accurate info about ASCVD prevention while monitoring and debunking inaccurate information
Organizational leaders working together to create actionable items, purposeful agenda to move forward
Reinstate the AHRQ guideline clearinghouse

Summary and Future Directions

Four major themes emerged from the Keynote Presentation and Key Opinion Leader discussion regarding barriers and strategies to improve ASCVD population health; these are 1) health disparities and inequities are major contributor to poor ASCVD health outcomes, 2) lack of team-based care and care collaboration among HCPs and organizations contributes to inefficiencies and gaps in care, 3) awareness of ASCVD risks and translation of guidelines to practice is inconsistent across disciplines, and, 4) available health data is not consistently shared and utilized to improve clinical practice. Participating organizations need to work together to address the barriers and challenges to ASCVD risk reduction by advocating for health equity, actively promoting collaboration between disciplines, sharing available tools and resources, promoting evidenced-based-guidelines, and sharing data.

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ADDENDUM A
Participant Bios

ADDENDUM B
Meeting Agenda

ADDENDUM A

KOL Participant Bio Sketches

Christopher Baugh, MD

Vice Chair of Clinical Affairs of the Department of Emergency Medicine, Brigham and Women's Hospital

Associate Professor of Emergency Medicine, Harvard Medical School, Boston, Massachusetts

American College of Emergency Physicians

Dr. Baugh trained in Emergency Medicine at Brigham and Women's & Massachusetts General Hospitals' combined residency program, focusing his career in Observation Medicine and accelerated diagnostic pathways during this time. He became medical director of the ED observation unit in 2009, launched a second one in 2014, and opened and directed the Brigham's urgent care center in Foxborough, MA between 2011 and 2015. From 2015 through 2018 he served as the Medical Director of the Department of Emergency Medicine. He has published on the clinical and administrative aspects of observation care in the New England Journal of Medicine, Health Affairs, Annals of Emergency Medicine and Academic Emergency Medicine. He recently served as Chair of the Observation Medicine Section of the American College of Emergency Physician.

Theresa Beckie, PhD, MN, RN

Professor, College of Nursing and Cardiovascular Medicine

Associate Dean, PhD Program, College of Nursing,

University of South Florida, Tampa

American Heart Association Council on Cardiovascular and Stroke Nursing

Dr. Beckie received her B. Sc., Nursing, from the University of Saskatchewan, Saskatoon, SK, Canada and her Masters in Nursing and PhD from the University of Alberta, Edmonton, Ab, Canada. Dr. Beckie's National Institute of Nursing Research funded study provided a cutting-edge, individualized approach to cardiac rehabilitation for women. In a randomized clinical trial, the motivationally-tailored, gender-specific program resulted in reduced depressive symptoms and improved quality of life in women completing her innovative program compared to women attending traditional cardiac rehabilitation. She also examined the interactions between environmental exposures and genetic risk factors in women with heart disease. She is particularly interested in heart disease in young women. Dr. Beckie is translating her face-to-face cardiac rehabilitation program for women to a mobile platform using wearable sensors and a smart phone. The program, HerBeat, could revolutionize the delivery of behavior change interventions for women.

Sarah Billups, PharmD, BCPS

Professor, Skaggs School of Pharmacy and Pharmaceutical Studies, University of Colorado, Denver

American Pharmacists Association

Dr. Billups received her Doctor of Pharmacy from the University of Wisconsin, Madison, and completed an Ambulatory Care Research Fellowship at the University of Colorado, Denver. She works within the Office of Value-Based Performance at University of Colorado Medicine where her role is to develop and implement population-management strategies to improve quality outcomes in the patients cared for by CU Medicine providers. She is interested in researching ways to deliver healthcare more effectively and efficiently using innovative care models, especially those involving pharmacists, pharmacy trainees, and technology.

Lyn Behnke, DNP FNP-BC

Assistant Professor, University of Michigan, Flint

WomenHeart

Dr. Behnke is a graduate of the Mercy School of Nursing of Detroit and received her Bachelor's degree in Health Care Administration from Central Michigan University, Master of Science in Nursing (MSN) degree in Family Nurse Practitioner/Family Nurse Clinical Specialist from Michigan State, and a Doctor of Nursing Practice (DNP) from the University of Health Professions in Provo, Utah. She is a well-seasoned practitioner with extensive experience as a nurse, nurse practitioner, and educator. Her research interests include assisting to reduce falls in long-term care by screening and treating for vitamin D deficiency, heart disease in women, as well as heart failure and self-care for women. She is also a heart patient and serves on the National Governing Board for WomenHeart.

Yvonne Commodore-Mensah, PhD, MHS, RN, FAAN, FAHA, FPCNA

Assistant Professor, Johns Hopkins Schools of Nursing and Public Health, Baltimore, Maryland

Board Member, Preventive Cardiovascular Nurses Association

Dr. Yvonne Commodore-Mensah earned her Ph.D. from Johns Hopkins School of Nursing, Master of Health Science in Cardiovascular and Clinical Epidemiology from Johns Hopkins Bloomberg School of Public Health and Bachelor of Science in Nursing from Fairleigh Dickinson University. She has expertise in cardiovascular disease epidemiology, health disparities, immigrant health, and global health. Her program of research seeks to reduce cardiovascular health inequities in African-descent populations through

community-engaged research locally and globally. She is a Fellow of the American Heart Association, American Academy of Nursing, and the Preventive Cardiovascular Nurses Association. She received the American Heart Association (AHA) Martha N. Hill New Investigator Award in 2016 and is a member of the Council on Cardiovascular and Stroke Nursing of the AHA. She is the Chief Executive Officer of the African Research Academies for Women, a non-profit which seeks to address gender disparities in Science, Technology, Engineering, and Mathematics in Africa.

Leslie Davis, PhD, ANP-BC, FAANP, FACC, FAHA, FPCNA

Associate Professor, School of Nursing at UNC Chapel Hill

Nurse Practitioner, Division of Cardiology at UNC Chapel Hill

American Association of Nurse Practitioners

Dr. Davis received her BSN, MSN and PhD from the University of North Carolina, Chapel Hill. She holds a Post-Doctoral Certificate in Qualitative Research Methods and is a Certified Nurse Practitioner and Hypertension Specialist. As a clinician, she focuses her care on adults with hypertension, heart failure, and acute coronary syndromes. Her research interests include self-care and symptom management with women who have experienced cardiovascular conditions. She has served as faculty and chair for a specialty series on cardiovascular topics for the AANP, on the AHA's Go Red for Women® Task Force, as faculty and chair for a Group Lecture series on Hypertension sponsored by the AANP, and as faculty for a Group Lecture series on Chronic Heart Failure. She has authored/coauthored articles in the American Journal of Critical Care; Circulation; Critical Care Clinics of North America; Dimensions of Critical Care; Heart and Lung; the Journal of Cardiovascular Nursing, the Journal of the AANP; the Journal for Nurse Practitioners, the Nurse Practitioner; and Progress in Cardiovascular Nursing. She also served a guest editor of a special cardiovascular edition of the Journal for NPs.

Cheryl Dennison Himmelfarb, PhD, RN, ANP, FAAN, FAHA, FPCNA

Professor of Nursing, Medicine, and Public Health

Vice Dean Research, Office for Science and Innovation

Sarah E. Allison Professor for Research and Self-Care

Johns Hopkins Schools of Nursing and Public Health, Baltimore, Maryland

Past President and Board Member, Preventive Cardiovascular Nurses Association

Cheryl Dennison Himmelfarb received her BS from the Texas Women's University, Dallas Tx and hr MS and PhD from John Hopkins University. She has had a sustained passion and commitment to reducing health disparities and improving the quality of care and outcomes for cardiovascular and critical care

patients is seen as a consistent thread throughout her progressive program of research, professional practice, and teaching. Her research has led to the development of effective and transferrable health system and interdisciplinary team-based strategies to improve the quality of cardiovascular care. Dr. Himmelfarb's scholarship has contributed to a greater understanding of social and cultural determinants of cardiovascular risk, particularly among Black and resource-limited populations. Dr. Himmelfarb has served on numerous National Institutes of Health and American Heart Association expert panels that have generated scientific statements and national clinical guidelines to reduce health disparities and improve the quality of cardiovascular care..

Sue Koob, MPA

Chief Executive Officer

Preventive Cardiovascular Nurses Association

Sue Koob, MPA, has been the Chief Executive Office of the Preventive Cardiovascular Nurses Association (PCNA) for over 20 years. She is responsible for the overall management of PCNA and with the aid of her staff and volunteers the strategic direction as well. She has a passion for promoting prevention and enjoys working with her board of directors and staff to increase visibility for the important role nurses play in the prevention of cardiovascular disease. She received her Master of Public Affairs from Indiana University and her Bachelor of Science Degree in Biology from Kansas University. She was the 2015 recipient of the National Forum on Heart Disease and Stroke Prevention's *Heart Healthy and Stroke Free Award*. PCNA is headquartered in Madison, WI.

Jane Nelson Worel, RN, MS, ANP-BC

Director of Clinical Education

Preventive Cardiovascular Nurses Association

Jane Nelson Worel is an Adult Nurse Practitioner and currently serves as the Clinical Education Director for the Preventive Cardiovascular Nurses Association (PCNA). Jane was a longtime member of the PCNA Board of Directors and is a past President of the organization. Prior to joining PCNA, Jane's work experience included advanced practice nursing roles in cardiac rehabilitation, preventive cardiology, internal medicine and women's health. She is a graduate of the University of Wisconsin, Madison with both MS and BS degrees in Nursing and an MS in Clinical Exercise Physiology. She has been recognized as a Fellow of the American Heart Association, American Association of Cardiovascular and Pulmonary Rehabilitation as well as PCNA. She has served as the co-editor of the Progress in Prevention column of the Journal of Cardiovascular Nursing.

Larry Sperling, MD

Professor, Emory University, Atlanta, Georgia

Executive Director, Million Hearts

Laurence S. Sperling, M.D., FACC, FAHA, FACP is the Founder and Director of The Heart Disease Prevention Center at Emory. He is currently Professor of Medicine (Cardiology) at the Emory University School of Medicine and Professor of Global Health in the Hubert Department of Global Health in the Rollins School of Public Health at Emory University. Dr. Sperling received his undergraduate degree from Emory College where he was accepted into Emory University School of Medicine's Early Acceptance Program as a college sophomore. He graduated with his M.D. in 1989, and subsequently completed 8 additional years of training at Emory including a residency in internal medicine, chief resident year at Emory University Hospital, an NIH-supported research fellowship in molecular and vascular medicine, and a clinical fellowship in cardiovascular diseases. He currently serves as the Executive Director of Million Hearts.

Kim Stitzel, MS, RD

Sr. Vice-President National Forum for Heart Disease & Stroke Prevention, Washington DC

National Forum for Heart Disease & Stroke Prevention

Immediate Past Chair of the National Forum; Ms. Stitzel recently held the role as the Senior Vice-President, Center for Health Metrics & Evaluation for the American Heart Association. Throughout her tenure at AHA, Ms. Stitzel served as Senior Vice-President, Preventive Health Markets, Vice-President, Kid's Market and Health Living Strategies, and as the Director of Nutrition and Obesity. Prior to joining the AHA, Ms. Stitzel served as a nutrition advisor to the Deputy Assistant Secretary for Health on federal nutrition policy at the Department of Health and Human Services. In addition, she co-authored the book, A Healthier You, and served on the joint HHS/USDA Dietary Guidelines management team, which facilitated the work of the Dietary Guidelines Advisory Committee and the 2005 Dietary Guidelines for Americans. Ms. Stitzel has a BS and MS in Nutrition from Virginia Tech, Blacksburg, Va.

Kate Traynor, RN, MS, MAACVPR

Director, Cardiovascular Disease Prevention Center, Massachusetts General Hospital

American Association of Cardiovascular and Pulmonary Rehabilitation

Kate Traynor received a BSN from the University of Massachusetts, Amherst, Mass. She began her career as a nurse and quickly gravitated towards cardiology and cardiac nursing. After working at UMass Medical Center and completing her graduate studies, Kate became a Cardiac Clinical Specialist in Providence, where she implemented a cardiac rehab program. After a few years in Providence, Kate went to Mass General Hospital in Boston as a Clinical Specialist where she rose through the ranks at MGH and became

Director of Cardiovascular Disease Prevention in 1992. Kate also served as president of the ASSCVPR in 2018/2019 and is currently a master fellow at the AACVPR.

Karol Watson, MD, PhD

Professor of Medicine/Cardiology, University of California, Los Angles

Association of Black Cardiologists

Dr. Karol Watson received her MD at Harvard University and completed her Internship, Residency and Fellowship in Cardiovascular Medicine at UCLA. She is an attending cardiologist and a Professor of Medicine/Cardiology at the David Geffen School of Medicine at UCLA. She is Director of the UCLA Women's Cardiovascular Health Center, the UCLA-Barbra Streisand Women's Heart Health Program, Co-Director of the UCLA Program in Preventive Cardiology, and Director of the UCLA Fellowship Program in Cardiovascular Diseases. Dr. Watson is a principal investigator for several large National Institutes of Health research studies including the Diabetes Prevention Program Outcomes Study and the Multi-ethnic Study of Atherosclerosis. She is a Fellow of the American College of Cardiology and a member of the American Heart Association. She is also a Board member of the American Heart Association, Western States Affiliate, and Chairperson of the Scientific Advisory Board for Womenheart, the largest national organization for women survivors of heart disease.

Carla Weidner, DNP, CLS, FNP-BC, AACC

Nurse Practitioner, St. Luke's University Health Network, Bethlehem, Pennsylvania

American College of Cardiology

Carla Weidner is a Cardiovascular Nurse Practitioner and Clinical Lipid Specialist. Her cardiovascular practice has been diverse including both acute and chronic care. She received her Doctor of Nursing Practice from Misericordia University, Dallas, Pennsylvania and is an Associate of the American College of Cardiology. Her doctoral research focus was in Familial Hyperlipidemia.

Kaye-Eileen Willard, MD, FNLA

Ascension Health, Racine, WI

National Lipid Association

Dr. Kaye-Eileen Willard received her MD from the University of Washington, School of Medicine, Seattle, Wa. She completed an Internship at Sacred Heart Medical Center and a Fellowship in Internal Medicine at

the University of Washington. She currently serves as Chief of Staff and is Internal Medicine Specialist at Ascension Health in Racine Wisconsin. She directs the Lipid Clinic and is the Physician Advisor for Quality Metrics. She is the Co-Editor of the Lipid Spin Journal for the National Lipid Association.

Nathan Wong, PhD, MPH

Professor, University of California, Irvine

American Society for Preventive Cardiology

InterAmerican Heart Association

Dr. Nathan Wong is a cardiovascular epidemiologist, specialist in preventive cardiology, and Professor and Director, Heart Disease Prevention Program, Division of Cardiology at the University of California, Irvine in California, with joint appointments in Epidemiology and UCLA and UC Irvine. He holds MPH and PhD degrees in epidemiology from Yale University and is a fellow of the American College of Cardiology, American Heart Association, National Lipid Association, and American Society for Preventive Cardiology He is a past president of the American Society for Preventive Cardiology and Pacific Lipid Association (Chapter of the National Lipid Association), and president-elect of the Interamerican Heart Foundation. In addition, he recently served as chair of the Diabetes Collaborative Registry Research and Publications Committee and is editor of the ACC Diabetes and Cardiometabolic Clinical Topic Collection.

Addendum B ***Reducing Atherosclerotic Cardiovascular Disease (ASCVD) with a Population Health Approach***
A Key Opinion Leader Summit

AGENDA

10:00 AM (EST)	**Welcome and Overview of the Day** Yvonne Commodore Mensah PhD, MHS, RN
10:15 AM	**Introductions** KOLs - brief bio and organization's major concern/current focus regarding prevention and management of ASCVD (3-4 minutes each)
11:00 AM	**Keynote presentation** *Current research in population health strategies to achieve optimal management of ASCVD* Cheryl Dennison Himmelfarb PhD, RN
11:35 AM	Q/A
11:50 AM	Bio Break
12:15 PM	**Group discussion: Challenges and Key Stakeholders**

- *Describe challenges/barriers to improve ASCVD related health outcomes*
- *Identify the key stakeholders in promoting ASCVD population health*

1:20 PM **Group discussion: Successful Strategies/Best Practices**

- *Share strategies/best practices to improve ASCVD health outcomes*
- *Outline methods for organizational collaboration for the promotion of ASCVD population health*

2:25 PM Wrap Up, Next Steps

2:30 PM Adjourn

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