Welcome & Addressing Cardiometabolic Health and Diabetes Care

Nancy Brown, CEO

American Heart Association
American Stroke Association
The Challenge We Face…

Cardiovascular diseases are the #1 cause of DEATH IN THE WORLD.

EVERY 2 SECONDS someone around the world dies from cardiovascular disease.

17.5M DEATHS occur each year around the world from cardiovascular diseases.

1 in 11 ADULTS has diabetes worldwide & HALF are undiagnosed.
American Heart Association says proposed changes to school meals fails the nation’s children

November 20, 2017 | Delegates Advocacy News
WASHINGTON, D.C., Nov. 20, 2017 — American Heart Association CEO Nancy Brown released the following comments on an interim final rule issued today by the U.S. Department of Agriculture (USDA). The rule would allow school nutrition authorities to include 1 percent flavored milk and refined grains instead of whole-grain rich products in school meals, as well as raise the sodium targets for daily school breakfasts and lunches.

“This new rule deserves an ‘F’ if this is the best when it comes to helping our kids eat healthier at school.

In the last five years, nearly 100 percent of the nation’s participating schools have complied with updated school meal standards. Kids across the country have clearly benefited from these changes. Their meals have less salt, sugar and saturated fat, and they eat 16 percent more vegetables and 23 percent more fruit. Why would the USDA want to roll back the current standards and reverse this excellent progress?

Fortunately, when these changes were first proposed by the USDA last May, many schools publicly declared that they would reject this rule and keep healthy foods on our kids’ plates. We strongly applauded those institutions for their ongoing commitment to the existing standards.

For those schools that may be experiencing challenges, stripping away the nutrition standards could cause special interests won’t solve their problems. Instead, the USDA should focus its time and resources on providing more technical assistance to any school that is struggling with offering more healthy food options.

This new rule is described as an effort to give the nation’s schools more ‘flexibility’ on what foods to serve our children. But the truth is it would weaken school nutrition standards that will help kids attain better long-term health and academic success. We urge the USDA to leave these important nutrition standards intact and reconsider taking this action.”
The AHA has focused on the association of **Diabetes and Cardiovascular Disease** since 1997 when we officially named it a risk factor for cardiovascular disease.
Our Cardiovascular Health Impact Goal

By 2020, to improve the **cardiovascular health** of all Americans by **20%**, while reducing deaths from cardiovascular disease and stroke by **20%**.

Life’s Simple 7®
Progress to Cardiovascular Health Goal

Overall improvement in CV health is **3.95%**

**NHANES 2013-2014**
AHA Guiding Values

- Meeting People Where They Are
- Improving and Extending People’s Lives
- Speaking with a Trustworthy Voice
- Bringing Science to Life
- Inspiring Passionate Commitment
- Making an Extraordinary Impact
- Ensuring Equitable Health for All
- Building Powerful Partnerships
Strategic Value Proposition

The American Heart Association is a catalyst to achieving maximum impact in equitable health and wellbeing.

- In the United States and around the world, spanning all populations
- Addressing overall health and wellbeing, anchored in cardiovascular and brain health
- Focusing on
  - breakthroughs in science and technology;
  - changes in systems and policy; and
  - working with individuals and organizations to transform communities
- Through networks that collectively
  - define and assure scientific integrity
  - invest in impact
  - influence action
  - connect across sectors, communities and nations
- To meet the needs of individuals.
AHA will build a multi-faceted initiative focused on cardiometabolic health and diabetes. The framework would focus broadly on cardiometabolic health, with an emphasis on prediabetes and diabetes (Type 1 and Type 2).

Unite the primary care, cardiology, endocrinology, and other specialty care provider communities in a comprehensive approach to caring for and treating patients with cardiometabolic conditions, such as diabetes.

Educate and empower people living with cardiometabolic disorders and diabetes to better self-manage their condition(s) and improve their cardiovascular and cardiometabolic health.
20+ Organizations Represented Today

Sample Organizations

- AMA
- CDC
- Humana
- National Medical Association
- AAPD
- PCNA
- NIH
- National Heart, Lung, and Blood Institute
- APhA
- Baylor Scott & White
- NAHNP
- Academy of Nutrition and Dietetics
- Obesity Society
- Kaiser Permanente
- ASPC
- Black Nurses ROC
- AACE
- ABC
- Indian Health Service
- National Forum
THANK YOU
Cardiometabolic Health

Environmental Scan

Housekeeping

Eduardo Sanchez, MD, MPH, FAAFP

Chief Medical Officer for Prevention
Chief of the Center for Health Metrics & Evaluation
American Heart Association
This slide set is adapted from the 2017 ACC/AHA/AAPA/ABC/ACPM/AGS/APhA/ASH/ASPC/NMA/PCNA Guideline for the Prevention, Detection, Evaluation, and Management of High Blood Pressure in Adults

Published on November 13, 2017, available at: *Hypertension* and *Journal of the American College of Cardiology*.

The full-text guidelines are also available on the following websites: AHA ([professional.heart.org](http://professional.heart.org)) and ACC ([www.acc.org](http://www.acc.org))
Classification of BP
**Categories of BP in Adults***

<table>
<thead>
<tr>
<th>BP Category</th>
<th>SBP</th>
<th>DBP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Normal</td>
<td>&lt;120 mm Hg</td>
<td>&lt;80 mm Hg</td>
</tr>
<tr>
<td>Elevated</td>
<td>120–129 mm Hg</td>
<td>&lt;80 mm Hg</td>
</tr>
</tbody>
</table>

**Hypertension**

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>130–139 mm Hg</th>
<th>80–89 mm Hg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stage 2</td>
<td>≥140 mm Hg</td>
<td>≥90 mm Hg</td>
</tr>
</tbody>
</table>

*Individuals with SBP and DBP in 2 categories should be designated to the higher BP category. BP indicates blood pressure (based on an average of ≥2 careful readings obtained on ≥2 occasions, as detailed in DBP, diastolic blood pressure; and SBP systolic blood pressure.*
<table>
<thead>
<tr>
<th>COR</th>
<th>LOE</th>
<th>Recommendation for Coexistence of Hypertension and Related Chronic Conditions</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>B-NR</td>
<td>Screening for and management of other modifiable CVD risk factors are recommended in adults with hypertension.</td>
</tr>
</tbody>
</table>
### CVD Risk Factors Common in Patients With Hypertension

<table>
<thead>
<tr>
<th>Modifiable Risk Factors*</th>
<th>Relatively Fixed Risk Factors†</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Current cigarette smoking, secondhand smoking</td>
<td>• CKD</td>
</tr>
<tr>
<td>• Diabetes mellitus</td>
<td>• Family history</td>
</tr>
<tr>
<td>• Dyslipidemia/hypercholesterolemia</td>
<td>• Increased age</td>
</tr>
<tr>
<td>• Overweight/obesity</td>
<td>• Low socioeconomic/educational status</td>
</tr>
<tr>
<td>• Physical inactivity/low fitness</td>
<td>• Male sex</td>
</tr>
<tr>
<td>• Unhealthy diet</td>
<td>• Obstructive sleep apnea</td>
</tr>
<tr>
<td></td>
<td>• Psychosocial stress</td>
</tr>
</tbody>
</table>

*Factors that can be changed and, if changed, may reduce CVD risk.
†Factors that are difficult to change (CKD, low socioeconomic/educational status, obstructive sleep apnea, cannot be changed (family history, increased age, male sex), or, if changed through the use of current intervention techniques, may not reduce CVD risk (psychosocial stress).

CKD indicates chronic kidney disease; and CVD, cardiovascular disease.
Prevalence of One CV Risk Factor in US Adults (20+ years)

NHANES 2011-2014

Prevalence

HTN: 45.5%
Prediabetes: 30.0%
Diabetes: 12.8%
High Cholesterol: 29.1%
Prevalence of Two CV Risk Factors in US Adults (20+ years) NHANES 2011-2014

- HTN + Prediabetes: 16.4%
- HTN + Diabetes: 9.9%
- HTN + High Cholesterol: 19.9%
- High Cholesterol + Prediabetes: 10.9%
- High Cholesterol + Diabetes: 7.6%
Prevalence of Three CV Risk Factors in US Adults (20+ years) NHANES 2011-2014

- **HTN + Prediabetes + High Cholesterol**: 7.4%
- **HTN + Diabetes + High Cholesterol**: 6.3%
Pharmacological interventions were reduced by 27–28% for hypertension and 25% for hyperlipidemia in the intervention group compared with placebo group.

Lifestyle intervention is cost-effective, and generic metformin is cost-effective, or even cost-saving, from a health system and societal perspective.

If a DPP group lifestyle intervention could be delivered at 1/3 lower cost than the DPP lifestyle intervention and achieve the same outcomes, it might also be cost-saving compared to placebo.


WH Herman, Clinical Diabetes and Endocrinology 2015 1:9
Published: 2 September 2015
The observed annual medical spending for people with diabetes was $13,966—more than twice that for people without diabetes.

X Zhuo, P Zhang, L Barker, A Albright, TJ Thompson and E Gregg
Diabetes Care 2014 Sep; 37(9): 2557-2564.
Co-Moderator – Robert Eckel, MD, FAHA

Three Sessions

1. Understanding the role of the healthcare system and quality improvement in supporting people with cardiometabolic disorders
2. Prevention through increasing patient awareness around cardiometabolic risk and empowering individuals to be engaged in their care
3. Activating communities and leveraging technology to advance the complex health needs of people living with cardiometabolic and cardiovascular diseases
Panel Recaps and Next Steps

- Prioritize most impactful short-term and long-term strategies for AHA and stakeholders to reduce the cardiovascular outcomes of prediabetes and diabetes
Cardiometabolic Disorder and Diabetes Management in the U.S.

Bryce Smith, PhD, MSSW
Samuel Arce, MD, FAAFP
Reducing Incidence and Complications of Diabetes: The Role of Evidence-based Interventions

Bryce D. Smith, PhD, MSSW
Division of Diabetes Translation
Centers for Disease Control and Prevention
Our Public Health Challenge...

30 million Americans have diabetes

84 million Americans have prediabetes

9 out of 10 adults with prediabetes don’t know they have it
Estimated age-adjusted prevalence of diagnosed diabetes by race/ethnicity and sex among adults aged >18 years, United States, 2013-2015

Trends in Age-standardized Rates of Diabetes-Related Complications from 1990 to 2010 among U.S. Adults with Diagnosed Diabetes
<table>
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<tbody>
<tr>
<td>Prevent type 2 diabetes</td>
<td>Prevent complications, disabilities, and consequences related to diabetes through improved approaches to care</td>
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</table>

Goal 3.
Reduce differences in health that impact people affected by diabetes
Goal I: Prevent Type 2 Diabetes

Surveillance and Research
Conduct surveillance, epidemiology, and effectiveness research regarding type 2 diabetes prevention, and disseminate findings to stakeholders.

Prediabetes and Associated Risk Factors Awareness
Build awareness of prediabetes, its risk factors, and behaviors that contribute to type 2 diabetes – including their impact on public health.

Applied Research and Translation
Conduct applied public health research and execute a translation agenda for type 2 diabetes prevention, and disseminate findings to stakeholders.

National Diabetes Prevention Program
Increase preventive behaviors for type 2 diabetes by scaling and sustaining the National Diabetes Prevention Program (National DPP).
Overview of the National DPP

In the Diabetes Prevention Act of 2009, Congress authorized CDC to establish the National DPP.

The core of the National DPP is a CDC-recognized, year-long lifestyle change program that offers participants:

1. A Trained Lifestyle Coach
2. A CDC-Approved Curriculum
3. Group Support Over the Course of a Year

To successfully implement the program, the National DPP relies upon a variety of public-private partnerships including community organizations, private insurers, employers, health care organizations, faith-based organizations, and government agencies. Together, these organizations work to:

- Build a workforce that can implement the lifestyle change program effectively
- Ensure quality and standardized reporting
- Deliver the lifestyle change program through organizations nationwide
- Increase referrals to and participation in the lifestyle change program

Increase Program Coverage & Reimbursement

Many public and private insurers are offering the National DPP as a covered benefit.

**Commercial Insurers & Employers**

Many commercial health plans and private sector employers provide some coverage for the National DPP. **Examples include:**

- AmeriHealth Caritas
- Anthem
- BCBS Florida
- BS California
- BCBS Louisiana
- Denver Health Managed Care: *Medicaid, Medicare, Public Employees*
- Emblem Health: NY
- GEHA
- Costco
- Humana
- Kaiser: CO & GA
- LA Care: *Medicaid*
- MVP’s Medicare Advantage
- Priority Health: MI
- United Health Care: *National, State, Local, Private, and Public Employees*
- LL Bean

**Public-Sector Coverage**

**State/Public Employees:** Over 3 million public employees/dependents in 12 states have the National DPP as a covered benefit

**Medicaid:** Four states have approved coverage for Medicaid beneficiaries: Montana, Minnesota, New Jersey (2018), and California (2018)

**Medicare:** Medicare DPP coverage starts on April 1, 2018

Goal II: Prevent Complications, Disabilities, and Consequences Related To Diabetes Through Improved Approaches to Care

**Surveillance and Research**
Conduct surveillance, epidemiology, and effectiveness research regarding diabetes care, and disseminate findings to stakeholders.

**Program Implementation**
Support the expansion & implementation of Diabetes Self-Care Management Education & Support (DSMES) and other strategies for preventing complications, disabilities, & burden associated with diabetes.

**Applied Research and Translation**
Conduct public health applied research and execute a translation agenda for diabetes care.
Diabetes Self-Management Education and Support (DSMES)

- **Overview:** An evidence-based intervention program that teaches medication management, nutrition, and physical activity skills to people with diabetes to optimize their ability to self-manage the disease.

- **Accreditors:** American Diabetes Association (ADA) and American Association of Diabetes Educators (AADE)

- **Locations:** 4,568 program sites across the U.S with approximately 90,000 new participants annually

- **Referral:** The treating physician or qualified non-physician provider must provide a written referral indicating a diagnosis of diabetes

- **Duration:** Up to 10 hours of diabetes-related training within a consecutive 12-month period and 2 hours of follow-up annually.

- **Reimbursement:** Medicare, Medicaid and most health plans cover diabetes education. 46 states plus District of Columbia have state insurance laws that mandate coverage of DSME by private payers.

### Participant Benefits
- Lower health care costs and hospitalizations
- Achieve better metabolic control
- Improve lipid levels
- Reduce blood pressure
- Improve quality of life: less blurred vision, frequent urination, fatigue

### Program Challenges
- Lack of program awareness
- Program accessibility; transportation issues; timing
- Program length and time commitment
- Concerns about patient costs

- **Only 6.8%** of newly diagnosed type 2 diabetes patients with private insurance
- **Only 5%** of Medicare recipients participated in DSMES programs

**Sources:**
1) [AADE: Diabetes Education Program](https://www.diabetes.org/education/)
2) [Joint Statement: ADA and AADE on DSME](https://www.diabetes.org/professionals/education-support/)
3) [National Conference of State Legislators](https://www.ncsl.org/)
4) [DSME Providers](https://www.diabetes.org/)
5) [DMSE Providers](https://www.diabetes.org/)
Goal III: Reduce Differences in Health that Impact People Affected by Diabetes

Disparities-Focused Surveillance
Conduct surveillance, epidemiology, and effectiveness research regarding progress made in reducing diabetes-related disparities among different groups

Targeted Program Implementation
Establish and implement an approach for making strategic, scientifically sound investments to rapidly scale-up core diabetes prevention and management programs and interventions in focused areas of urgent need
Why we do it.
Thank You!

For more information please contact Centers for Disease Control and Prevention

1600 Clifton Road NE, Atlanta, GA 30333
Telephone: 1-800-CDC-INFO (232-4636)/TTY: 1-888-232-6348
Visit: www.cdc.gov | Contact CDC at: 1-800-CDC-INFO or www.cdc.gov/info

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.
Cardiometabolic Disorder and Diabetes Management in the U.S.

What’s Working / What’s Not Working
In the Detection and Management
of Cardiometabolic Diseases and Diabetes

Samuel Arce, MD, FAAFP

Immediate Past Chairman, National Hispanic Medical Association
Past Member of the Board of Directors, American Diabetes Association
Member of the Governing Council, Minority Affairs Section, AMA
Practicing Physician in Primary Care
Cardiometabolic Disorder and Diabetes Management in the U.S.

- Community Assessment for Diabetes
  - ADA Projection for Diabetes in American population: 1:3
  - ADA Projection for Diabetes in Black American population: 1:3
  - ADA Projection for Diabetes in Hispanics: 1:2!!!!!!!

- Community Assessment for Heart Disease
  - Every year about 735,000 Americans will have a heart attack
  - 1:4 deaths in the United States are due to heart disease
  - Every 40 seconds someone has a heart attack

- Combination of Both (disastrous explosion!)
  - Adults with diabetes are 2-4 times more likely to die from heart disease
Cardiometabolic Disorder and Diabetes Management in the U.S.

- Cardiometabolic Syndrome

  - **Diabetes**: Insulin Resistance
  - **Hypertension**
  - **Hyperlipidemia** (elevated LDL, low HDL, Triglycerides)
  - **Obesity** (visceral/abdominal/central)
  - **Sedentary Lifestyle** (physical inactivity)
Community Risk Factors

- Poor diet (high salt intake)
- Physical inactivity
- Excessive alcohol use
- Smoking
- Lower socioeconomic level
- Lower educational level
- Lower financial status
Cardiometabolic Disorder and Diabetes Management in the U.S.

What’s not working?

- **Age**: as we mature, our risk increases!
- **Genetics** is still not being altered!
- **Cultural bias** (provider and patient)
- We are not addressing **Prediabetes** appropriately
- **Access** to quality healthcare is not always available
- **Cost** of “good medicine” is out of control!
- Radical **lifestyle changes**!
Cardiometabolic Disorder and Diabetes Management in the U.S.

- What is working?
  - Increasing **cultural competence** training
  - Increasing linguistically-appropriate **communication**
  - **Affordable** healthcare insurance
  - Cessation of **smoking**
  - **Education, education, education!**
The Future

- Prevention!!!!!
- DASH diet (Dietary Approaches to Stop Hypertension)
- Culturally-sensitive lifestyle modification is needed!
- “Population health” groups
- Community education: fresh fruits and vegetables
- Better access to healthcare services
- Address and overcome stereotypes about minority groups
Understanding the Role of the Healthcare System and Quality Improvement in Supporting People with Cardiometabolic Conditions

Moderator - Robert Eckel, MD, FAHA

Gregory Schwartz, MD, PhD, FAHA
Robert Eckel, MD, FAHA
Jim Dudl, MD
Barriers to Clinical Management of Diabetes
(Type 1 and 2) Along the Lifespan

Robert H. Eckel, MD, FAHA

Professor of Medicine
Division of Endocrinology, Metabolism and Diabetes
Division of Cardiology
Charles A. Boettcher II Chair in Atherosclerosis
University of Colorado Denver Anschutz Medical Campus
Barriers to Clinical Management of Diabetes (T1DM) Along the Lifespan

- Diagnosis can be confusing – 50% now occur after age 30
- Individualization of glycemic control avoiding severe hypoglycemia and DKA
- An endocrinologist/diabetologist (+ CDE) almost always needs to be involved
  - Nutrition, physical activity, alcohol
  - Insulin management – multiple daily injections vs. insulin infusion pump
  - Continuous glucose monitoring systems
  - Closed loop systems
  - β-cell replacement therapy
  - Psychosocial issues
  - Pregnancy
  - Complications – assessment and management
- Evidence from RCTs lacking for CVD prevention
  - Lipids – statins, goals, when?
  - BP – meds, goals, when?
  - Aspirin
- Cost!
Barriers to Clinical Management of Diabetes (T2DM) Along the Lifespan

- Diagnostic criteria vary.
  - Fasting glucose, OGTT, HbA1c

- When does the relationship between the metabolic syndrome and/or impaired glucose metabolism and its CVD risk begin?

- Weight loss is so often needed and effective treatment needs much time, expertise and to be individualized.

- The management of T2DM is complex, and RCTs using newer therapies have CVD benefits.
  - ADA, AACE
Barriers to Clinical Management of Diabetes (T2DM) Along the Lifespan

- Diagnostic criteria vary
  - Fasting glucose, OGTT, HbA1c
- When does the relationship between the metabolic syndrome and/or impaired glucose metabolism and its CVD risk begin?
- Weight loss is so often needed and effective treatment needs much time, expertise and to be individualized
- The management of T2DM is complex, and RCTs using newer therapies have CVD benefits
  - ADA, AACE
- Is metformin always the first drug?
- What about sulfonylureas, cheap but hypoglycemia and increased CVD risk?
- In more difficult patients newer therapies are expensive and may require more expertise and experience than is present in the usual PCP practice.
Diabetes Prevention, Diagnosis, and Treatment Using a Simple POPULATION System

R. James Dudl, MD

Diabetes Lead
Care Management Institute & Community Benefit
Kaiser Permanente
Principles: Use a Simple System for Population Care

1. Set few, simple, measurable treatment targets, and do continual surveillance.
2. Consider “treatment intensification” of every patient at every opportunity
   1. Fix provider & TEAM accountability
   2. Develop a single treatment algorithm that is OK with providers for 80% patients (all type 1 pts are exceptions)
      1. Add “personalization” as branches that fit onto your system
3. Action: treatment intensification: Titration, Initiation Adherence (TIA)
   1. Assure with a metric
3. Measure, feedback, & correct until target
Fix Physician accountability to use an algorithm with statin, ASA, & HTN drugs

Use a simple Treatment target algorithm:

- If over 40yo start a statin. Use L for lipid lowering (L)
  - Consider adding ASA if over 10% CVD risk. A for aspirin: (AL)
- If CVD add Lisinopril (L) or alternative ACE/ARB: (ALL)
- If hypertension, add a combination of BP meds, like Thiazide/Lisinopril (TALL)

Insure Treatment Intensification TIA: rechecks monthly till target

- Adherence: pharmacy refills till =>80% or Drug Reconciliation 6-7 days/wk
- Titration: HTN: consider ½ to 1 to 2 pills/dose standard
- Initiation: if both adherent @=>6 days/wk, and max titration, add the next medication.
  - Lipid lowering: ezetimibe, SGLT2 inhibitors, GLP1 agonists when the main path is insufficient to get to outcomes. PCSK9 are infrequently indicated using GRADE implementation criteria*.

Measure, feedback & correct system till target.

* BMJ 2004;328:1490–4
Does It Work? Observational Studies

- KP Implemented “ALL” in 70,000 DM>55 or CVD pts, after 2 yrs c/w no Rx in 170,000 pts:
  - A decline of MI’s or Strokes 15/1000 low adherence [>60% decline] 23/1000 high adherence*

- Decline in all MI’s in Northern Cal Kaiser over 10 yrs: >30% Non STEMI & 60% Stemi MI’s**

- Hypertension control <140/90 in No Cal Kaiser >80% in 10 yrs***
  - 5 Principles of population medicine

*** JAMA. 2013;310(7):699-705
Fix provider **TEAM accountability** to use an **algorithm** of lifestyle & starting with **metformin, add glipizide, & add NPH insulin if needed**

**Treatment target** of an **A1C** & Measure self-monitored blood glucose [**SMBG**] and consider telecommunications for results and **f/u optimally every 1-2 wks**

- **Insure Treatment Intensification (TIA):**
  - **Adherence:** insure =>6 days/wk
  - **Titration:** ½ to 1 to 2 pills/dose standard or Insulin increase 1u/d
  - **Initiation:** if both adherence is =>6 days/wk, and max titration, **add** next medication
    - **Pioglitazone**, SGLT2 inhibitors, GLP1 agonists, etc. are options to be used when indicated, consider if hypoglycemia is a concern.

- **Remeasure, feedback &/or correct system** till target.

**Results: HEDIS No Cal Kaiser > 95%ile moderate or poor A1C control, (appendix)**

* Arch Intern Med. 2011 September 26; 171(17):
Prediabetes: Kaiser Permanente’s Diabetes Impact to Surge Over Time

KP Members at risk for diabetes in 2016¹
1,514,820

29% develop diabetes over 3 years²

NEW cases of diabetes by 2019
439,298

52% develop diabetes over 10 years²

NEW cases of diabetes by 2019 through Q3 2015³
550,291

NEW cases of diabetes by 2026: 787,706

¹ – Preliminary data; CMI Analysis April 2017.
² – Diabetes Prevention Research Group; Diabetes Prevention Program
³ – Preliminary data; CMI Analysis, as of Apr 2016. CORE KP HEDIS Diabetes cohort, minus expected 10% of Type 1 diabetes per CDC national prevalence.
Could Screening for DM starting 45yo Every 3 Yrs save lives, MI’s and micro-vascular complications?

<table>
<thead>
<tr>
<th>Number needed to treat</th>
<th>MI's Saved</th>
<th>Micro Vasc Saved</th>
<th>$/QALY</th>
</tr>
</thead>
<tbody>
<tr>
<td>153</td>
<td>6</td>
<td>129</td>
<td>45yo Q3Y</td>
</tr>
<tr>
<td>115</td>
<td>6.5</td>
<td>115</td>
<td>45yo Q3Y</td>
</tr>
<tr>
<td>129</td>
<td>7</td>
<td>129</td>
<td>45yo Q3Y</td>
</tr>
<tr>
<td>122</td>
<td>7.5</td>
<td>122</td>
<td>45yo Q3Y</td>
</tr>
<tr>
<td>144</td>
<td>8</td>
<td>144</td>
<td>45yo Q3Y</td>
</tr>
<tr>
<td>324</td>
<td>8.5</td>
<td>324</td>
<td>45yo Q3Y</td>
</tr>
<tr>
<td>236</td>
<td>9</td>
<td>236</td>
<td>45yo Q3Y</td>
</tr>
<tr>
<td>108</td>
<td>9.5</td>
<td>108</td>
<td>45yo Q3Y</td>
</tr>
</tbody>
</table>

Lancet 2010; 375: 1365–74
Lifestyle Programs Can Be Successfully Implemented in the Community.

Systematic Review
All Qualifying 50 Programs
To Prevent DM
Decreased It 41%  P<.001


0.59
And Be **Cost Effective** for Preventing **Diabetes**

Systematic Review all programs for diet/exercise if increased risk for DM

Delivery method

<table>
<thead>
<tr>
<th>Method</th>
<th>Cost</th>
<th>(IQI, Range)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individual-based</td>
<td>$15,846</td>
<td>(7980 to 72,723)</td>
</tr>
<tr>
<td><strong>Group-based</strong></td>
<td><strong>$1,819</strong></td>
<td>(−5027 to 16,443)</td>
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</table>

Kaiser’s Prediabetes Program

Fix provider **accountability** to use an **algorithm** which includes using **lifestyle** or **metformin**

**Treatment target** is $A1c < 6.5%$:
* Initiate: consider lifestyle first, a **CDC approved lifestyle program** for 1 yr
  - If that is not done or is ineffective, consider **Metformin** initiation [encouraged recently]

- **Insure Treatment Intensification:**
  - **Adherence**: if metformin, confirmed => 6d/wk or refill data, then
  - **Titration**: consider ½ to 1 to 2 pills twice a day if max dose,
  - **Initiate**: If patient develops DM go to DM algorithm

- **Remeasure, feedback &/or correct system** till target.
  - Repeat screening test at least annually

- **Screen for CVD** risk factors; see DM protocol for CVD prevention

**Results:** **Lifestyle** for **10,000 members** (80% virtual, 20% in-person) **5% wt loss achieved by 50%** (appx)
Panel 1 - Questions and Answers

- 9:50 – 10:05 am
- 15 Minutes
Panel 1 - Breakout Session

- 10:05 – 10:35 am
- 30 minutes
Understanding the role of the healthcare system and quality improvement in supporting people with cardiometabolic conditions

- What are the 3 short-term solutions that could have the largest impact?
- What are the 3 long-term solutions that could come out of the summit?
Break

- 10:35 – 10:45 pm
- 10 minutes
Prevention Through Increasing Patient Awareness Around Cardiometabolic Risk and Empowering Individuals to be Engaged in their Care

Moderator - Anne Sumner, MD, FAHA
Kimberly Ketter, MSN, AGNP-C, CDE
Goutham Rao, MD, FAHA
Doris Browne, MD, MPH
Shannon Christen, RD, CDE
The Complex Needs of Persons Living with Cardiometabolic Disease

Kimberly A. Ketter, MSN, AGNP-C, CDE

President/Nurse Practitioner
Case Management Associates, LLC
Diabetes Wellness Center
Goals of This Discussion

- Identify 4 specific challenges that patients with cardiometabolic disease experience
- Discuss reasons why these challenges exist
- Develop a plan to satisfy the needs of these complex patients using the nursing process.
- Discuss unique nursing care/clinic models
Patient Challenges

- Compliance issues: Medication costs (including insulin, glucose testing supplies), addiction, other physical impairment (blindness, memory loss)

- Socio-Economic issues: Low household income, disabilities, inadequate family support, substance abuse, illiteracy, lack of trust in the medical community, lack of resources including mental health services and transportation
Food Deserts: Limited access to fresh fruits and vegetables, unhealthy food selections at “corner stores”

Poor health literacy and access to health education: Limited Diabetes Self-Management Education (DSME)/Heart health education classes in communities and low referral rates to existing programs.
**Definition:** “The nursing process is considered the appropriate method to explain the nursing essence, its scientific bases, technologies, and humanist assumptions that encourage critical thinking and creativity and permits solving problems in professional practice.”

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<th>Area</th>
<th>Description</th>
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<tr>
<td>Assessment</td>
<td>Collecting and analyzing data using a holistic approach</td>
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<td>Diagnosis</td>
<td>Answers the question “What is wrong?”</td>
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<td>Plan</td>
<td>Is measurable and goal-oriented. “How do we fix the problem and what is the deadline?</td>
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<tr>
<td>Implementation</td>
<td>Nursing care is implemented using a step-by-step process. Follow the recipe!</td>
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<td>Evaluate</td>
<td>Were the efforts effective?</td>
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Meeting the Need

- Perform a detailed community needs assessment
  - What is available, what is lacking, what is the population’s demographic

- Expand the availability of diabetes/heart health education in the community
  - Utilize places of worship, primary care

- Encourage involvement of community stakeholders
  - Program grants, promote/support local community health resources

- Empower patients to become the CEO of their health care

- Encourage culturally-sensitive community case management entities
  - Encourage innovative, advanced-practice nursing models
  - Resource centers, nurse-operated diabetes education/management clinics, etc.
Case Study

- Patient D.M. 47 y.o. AM
- Type 2DM, HTN, CHO, Obesity
- A1C >16; BMI > 35
- Referred by primary care office for DSME/Management
- Blind r/t sarcoidosis
- Not independent, on insulin, wife giving injections
- Reports depression
- Not checking blood sugars or BP

- A-Blind, dependent, depressed, uncontrolled diabetes
- D- Knowledge deficit r/t diabetes and hypertension diagnosis
- P- Switch from insulin syringe administration to insulin pen, enroll in DSME. Refer to center for the blind/Vision of Hope
- I- Monitor BG logs, BP logs, scheduled for DSME/Heart Health classes
- E-A1C improving, PT and wife report increased independence, improved med compliance and mood. F/U self assessment in 6 months

Challenges in Identifying Individuals with Pre-Diabetes and Those At Risk in Adults and Children

Goutham Rao, MD, FAHA

Immediate Past-Chair, Obesity Committee, American Heart Association
Jack H Medalle Professor and Chairman
Department of Family Medicine and Community Health
University Hospitals of Cleveland and Case Western Reserve University
Cleveland, Ohio
Definitions

- **American Diabetes Association**
  - Impaired glucose tolerance: 2-h glucose of 140-200mg/dL
  - Impaired fasting glucose: 100mg/dL-125mg/dL
  - HbA1C%: 5.7% -6.4%

- **World Health Organization**
  - IFG: 110mg/dL – 125mg/dL
  - IGT: 2-h glucose of 140-200mg/dL
37% of American adults (86 million people)
50% of Chinese adults (~ 500 million people)
16% of American adolescents
Problems

- Heterogeneity
  - IGT ≠ IFG ≠ increased HbA1C

- Diabetes Prevention Program
  - 2.8 year lifestyle intervention resulted in 58% risk reduction in incident diabetes
  - Persistent risk reduction up to 15 years later
  - Highly motivated overweight adults; 150 minutes of exercise per week
  - Most subjects in DPP and similar studies had IGT
  - Success in translation to community settings is highly variable (16-26% based on weight loss).
  - Demonstrates reduction in risk factors though not events or mortality.
Comparison of A1C to Oral Glucose Tolerance Test for the Diagnosis of Prediabetes in Overweight and Obese Youth

- Khokhar et al – Clinical Diabetes July 2017
- A1C alone is a poor discriminator of prediabetes in our study population, with low sensitivity (70%) and specificity (48.8%). BMI z score, A1C, and homeostatic model assessment of insulin resistance are significant predictors of prediabetes and, when taken together, provide better discrimination for prediabetes.
What Are the Risks?

- Type 2 diabetes
  - HR, of IFG (110-125mg/dL) of 4.4 in a 10-year population based study.

- Cardiovascular events
  - FPG of 100-125mg/dL associated with increased risk of cardiovascular event in univariate but not multi-variate analysis in the Multi-Ethnic Study of Atherosclerosis (MESA)
So What to Do?

- Value of conveying risk upon patient behavior
  - E.g. coronary calcium scoring
- Diabetes is under-diagnosed
  (7.2 million among 30.2 million adults with diabetes)
- Continue our current practices
- Consider a better label: “at risk for diabetes”
Challenges and Opportunities in Supporting Undertreated Audiences in Risk Management

Doris Browne, MD, MPH

President
National Medical Association
Diabetes Ethnic/Racial, Sex Prevalence > Age 18 in U.S.
ADA Standards of Care Guidelines: Prediabetes and Diabetes

- **Lifestyle Modification**
- **Self-Management Education:** Certified Diabetes Educator who
  - Cares and teaches with enthusiasm
  - Respects and understands patients
  - Understands patient’s culture
  - Uses appropriate technology and media
Advantages of Advanced Diabetes Management Professionals

- Adjust medication
- Treat and monitor acute & chronic complications and other comorbidities
- Adjust psychosocial issues
- Participate in research monitoring
Lifestyle Modification & Pharmaceutical Adherence

- ADA sponsored A1c Champions’ lectures:
  - Better accepted with calorie appropriate meal and prizes

- Health Fairs:
  - Invite stakeholders (patients), families & neighbors
  - Provide freebies: educational literature, gifts & healthy foods
  - Literature accepted to “give to family members” when not accepted for stakeholders
Lifestyle Modification & Pharmaceutical Adherence

**Prevention:**
- Publicizing advantages of exercise, caloric restriction, normal BP with culturally appropriate material (via radio, tv, social media sites, movies, etc.)
- Hyper- and hypoglycemia – destroys brain cells = cognitive dysfunction

**Protection:**
- Stakeholders need safe housing, safe travel and food & water free of known harmful products

**Partnerships:**
- Government Agencies
- Providers (include Psychiatrists and Psychologists)
- Public & Private Corporations
- Pharmaceutical Companies
- Community organizations
Effective Strategies to Motivate Lifestyle Changes, Evaluation, and Counseling

Shannon Christen, RD, CDE

University of Colorado Hospital
UCHealth
Motivations for Lifestyle Changes

- Find out the “why”
- Then dangle it – even though that “why” is not your “why” many times
  - Revenge weight loss
  - Competition – between family members, friends, spouses
  - They want something else but need to change or improve something
  - Major Events in life – weddings, births, deaths, reunions
- Most adult learners are not motivated by consequences
Evaluation

- What are the barriers?
  - Food insecurity
  - Change in Routine
  - Cultural beliefs

- What is considered success?
  - Weight in pounds, clothing size, improved labs
  - They traded a poor choice food for a better choice
  - They started tracking their intake with an app or measuring cup

- What is the risk/benefit of this change?
  - Cost – clothes, food, medications
  - Time commitment
  - Body shaping
Counseling

- **Share**
  - Success, struggles, empathize and cheer them on because CHANGE is HARD

- **Create a cut point for corrective action**
  - The 2 pound rule

- **Need to mitigate expectations**
  - Slower approach to weight loss is ok in many cases

- **Follow the golden rule**
  - Don’t ask your patients to do things you are NOT willing to try yourself
Panel 2 - Questions and Answers

- 11:10 – 11:25 am
- 15 Minutes
Panel 2 - Breakout Session

- 11:25 – 11:55 am
- 30 minutes
Prevention through increasing patient awareness around cardiometabolic risk and empowering individuals to be engaged in their care

- What are the 3 short-term solutions that could have the largest impact?
- What are the 3 long-term solutions that could come out of the summit?
Poster Showcase - Networking Lunch

- 11:55 am – 12:30 pm
- 35 minutes
- Posters
  - Cardiometabolic Health and Diabetes Activities
- Networking Lunch
Activating Communities and Leveraging Technology to Advance the Complex Health Needs of People Living with Cardiometabolic and Cardiovascular Diseases

Moderator – Tracy Wang, MD, FAHA

Cindy Lamendola, NP, MSN, FAHA
Kate Kirley, MD, MS
Patrick Wayte, SVP
Educating and Mobilizing Provider Communities to Improve Multidisciplinary Team Communication and Increase Clinical Best Practices Across the Spectrum of Care

Cindy Lamendola, NP, MSN, FAHA

Stanford University
Preventive Cardiovascular Nurses Association
PCNA
Barriers to Health Changes For Patients

- Low income and poverty, disparities in care
- Cultural sensitivity, Literacy levels
- No social support
- Pill burden – number of medications and costs
- No access to regular care or difficulty getting to appointments
- No access to settings for lifestyle changes sidewalks, grocery stores
- Multiple jobs or high stress positions, family responsibilities
There are 3 million nurses across the United States and are the most trusted profession.

Nurses work in all disciplines with opportunities to educate patients with prediabetes, diabetes and metabolic syndrome as well as families.

Nurses educate other nurses – local lecture series, webinars, annual symposiums, online education, mini behavioral certificates.

Nurses can reach out to the community educate lay people, students, employees and employers.
The Preventive Cardiovascular Nurses Association: Linking Diabetes and Cardiovascular Disease

The Power of Partnerships
PCNA recognizes the importance of partnering with other organizations to expand our reach and advance the role of nurses as part of the cardiometabolics team. We partner with dozens of organizations, including:

- American College of Cardiology
- American Diabetes Association
- American Heart Association
- Mended Hearts
- The National Forum
- Women Heart

PCNA actively participates in guidelines development and review, including the most recent hypertension guidelines update.

Professional Education
- In-person meetings (national, international and regional)
- Live and recorded webinars
- Publications - monographs and journal articles

CE topics include:
- CVD Risk Management in Patients with Diabetes
- Engaging Patients in Health Behavior Change
- Management of Hypertension
- Obesity and Health Behaviors
- Physical Activity
- Race and Ethnicity: Impact on Heart Disease
- Lipid Management in High Risk Patients
- Heart Failure

Patient Education (English/Spanish)
- Diabetes and CVD (available 2018)
- Hypertension booklet & fact sheet
- Cholesterol booklet & fact sheet
- Triglycerides fact sheet
- Heart-healthy toolkit fact sheets on weight management & lifestyle
PCNA Members Work

- Cardiology
- Preventive Cardiology
- Cardiac Rehab
- Heart Failure
- Family Practice
- Primary Care

- Internal Medicine
- Public Health
- Women’s Health
- Universities
- We Have International reach
Proffessional Barriers to Implementation

- Limited resources for counseling and sustained follow up support and dietitian services
- Time restraints or lack of financial incentives or reimbursement for health promotion
- Insufficient information on most effective strategies, lack of skills/lack of confidence to provide counseling to use preventive strategies for long term behavior change

Resources: William Polonsky, William Miller and Stephen Rollnick
http://www.motivationalinterview.org/training/trainers.html
Artinian, N Circ 2010; 122;406-441
PCNA Behavior Change Mini-Certificate

- Develop skills and knowledge to effectively partner with patients to develop and implement lifestyle changes to minimize risk in primordial and primary prevention of cardiovascular disease and to develop and implement realistic plans of care to manage their risk factors as secondary prevention.
Behavior Change Objectives

- Perform cardiovascular risk assessments using the most effective individualized tool and communicate the results effectively to patients.
- Utilize risk communication strategies based on individualized patient characteristics.
- Develop beginning knowledge and skill in using motivational Interviewing and coaching to move patients toward behavior change.
- Select and implement a variety of behavior change strategies for an individual and work collaboratively to develop goals, a plan for changing behavior, and mechanisms to evaluate goal completion.
Summary

- These patients represent a challenging population with an increased risk of CVD, multiple CV risk factors, comorbid conditions, and multiple medications

- HCPs need to be knowledgeable about scientific evidence and national guidelines for CVD and T2DM risk reduction

- All HCPs need to be involved in:
  - Identifying and assessing CVD risk factors
  - Implementing treatment for CVD risk factors
  - Incorporating both lifestyle interventions and pharmacotherapy to decrease CVD risk
Community-Based Programs

Kate Kirley, MD, MS
American Medical Association
Community-Based Programs

Program Examples

National Diabetes Prevention Program
- One year
- Group sessions
- Lay or licensed coach
- CDC recognition

Diabetes Self-Management Program (Stanford)
- Six weeks
- Group session
- 2 leaders – at least one is lay individual, both with type 2 diabetes

Chronic Disease Self-Management Program (Stanford)
- Six weeks
- Group sessions
- 2 leaders – at least one is lay individual, both with a chronic disease

Program Providers

Community-based orgs
Employers
Health departments
Health/wellness vendors
Schools, universities
Healthcare systems
AMA's clients increasingly recognize the value of community-clinical linkages

- Allows physicians to offer our patients services – like intensive lifestyle change counseling – that they need, but that we don’t have the time/capacity to do
- Aligns to value based care trends
  - Included as Improvement Activities under QPP (MIPS)
  - Aligns with PCMH standards
- Increased frequency of insurance coverage or other methods to offset patient out-of-pocket costs for these programs
- Achieves the IHI Triple (Quadruple) Aim
  - Better care: Adheres to evidence-based guidelines for diabetes prevention
  - Better outcomes: Lowers incidence of diabetes by 58 percent
  - Lower cost: Medicare estimated savings at $2,650 per beneficiary
  - Improving Care Giver Experiences: Reduce
Community-Clinical Linkages: The Community Side

- Likewise, community-based organizations increasingly recognize the value of partnering with healthcare delivery organizations.
- Medicare DPP is a major step towards the “medicalization” of these programs.
- Data collection, storage, and sharing challenges.
- Reporting to receive certification/recognition.
- Billing/claims submission.
- Quality measures?
Facilitators and Barriers of Community-Clinical Linkages

Barriers
- Clinician lack of awareness
- Clinician skepticism and comfort-level
- Healthcare “speak”
- Technology infrastructure
- Program capacity
- Patient engagement and follow-through
- Inconsistent insurance coverage/patient out-of-pocket cost

Facilitators
- Outreach efforts to clinicians by CBOs
- Increasing recognition from healthcare leadership
- Strong evidence-base and support in clinical guidelines
- Shift towards team-based care
- Emerging technological solutions
- Evolving payment environment
The Role of Health-Tech in Cardiometabolic Health

Patrick Wayte, SVP

Center for Health Technology & Innovation
American Heart Association
Health Tech

+ 250,000
Health Apps
The Health Experience

- Too much information
- Too many choices
- Everything is difficult
- I feel all alone
- Who can I trust?
- What do I do next?
Widespread Adoption

- When to use apps and wearables
- Choosing the right product
- Trusting the device, process
- How to interpret and apply

- Defining use case
- Understanding pts, provider needs
- Incorporating into clinical care

- Inertia/sharing control
- Need the evidence!
- Incorporating into workflows
- IT implementation
- Reimbursement issues
Health Motivation - Applications

Rules and Logic + Digital Health Content
Learn More about CHTI

- The AHA Center for Health Technology & Innovation
- At [www.ahahealthtech.org](http://www.ahahealthtech.org)
Panel 3 - Questions and Answers

- 12:55 – 1:10 pm
- 15 Minutes
Panel 3 - Breakout Session

- 1:10 – 1:40 pm
- 30 minutes
Panel 3 - Breakout Session

Activating communities and leveraging technology to advance the complex health needs of people living with cardiometabolic and cardiovascular diseases

- What are the 3 short-term solutions that could have the largest impact?

- What are the 3 long-term solutions that could come out of the summit?
Break

- 1:40 – 2:00 pm
- 20 minutes
Electronic Voting for Prioritization

- 2:00 pm
- Eduardo Sanchez, MD, MPH, FAAFP
- Robert Eckel, MD, FAHA
Strategic Prioritization

The Impact/Effort Matrix

- Impact:
  - Low
  - Med
  - High

- Effort Required:
  - Low
  - Med
  - High
Strategic Prioritization

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<th>Low Effort Low Impact Why Bother?</th>
<th>High Effort High Impact Requires Plans</th>
<th>Low Effort High Impact Quick Wins</th>
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1. Quick wins or low-hanging fruit. These would be high-impact solutions that would require fewer resources, as well as less effort to plan or organize.

2. Strategic next steps that require planning. These would be high impact solutions that require more resources, as well as more effort to organize and plan.
Voting with Poll Everywhere

- Send to: 22333
- Send text message: priorities (use lowercase)
To Vote Type a Letter When a Question is Open
Voting Results and Wrap Up

- 2:30 pm
- Voting Results
- Review of Recommended Solutions
- Wrap Up
3:00 pm

Adjourn
Thank You