The United States of Diabetes

Outcomes Innovation Capital

Outcomes-based security to
lower incidence of Type 2 Diabetes

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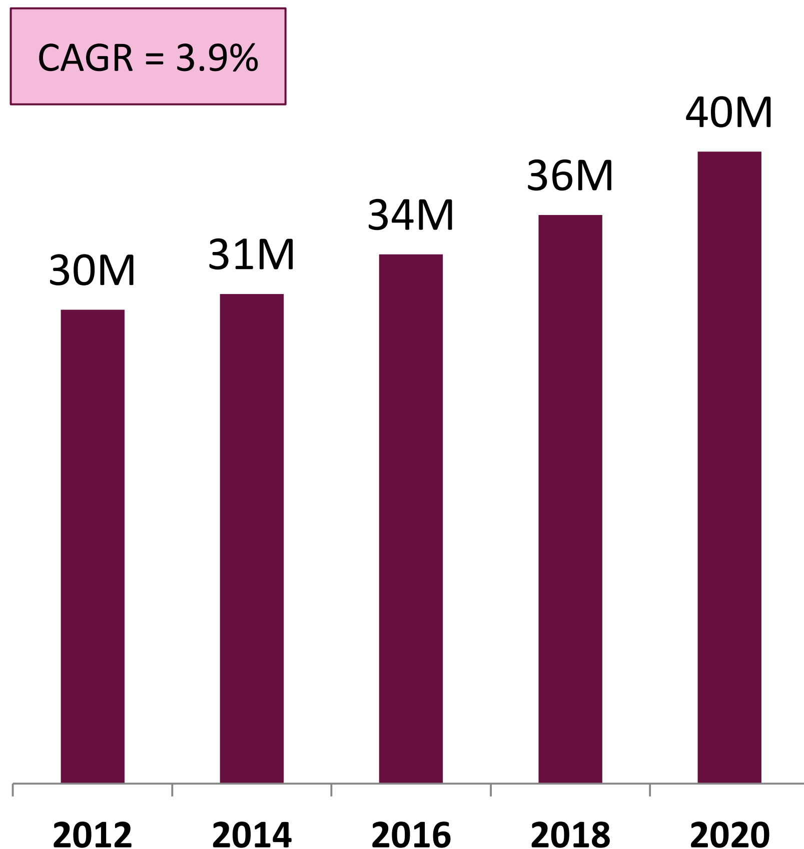
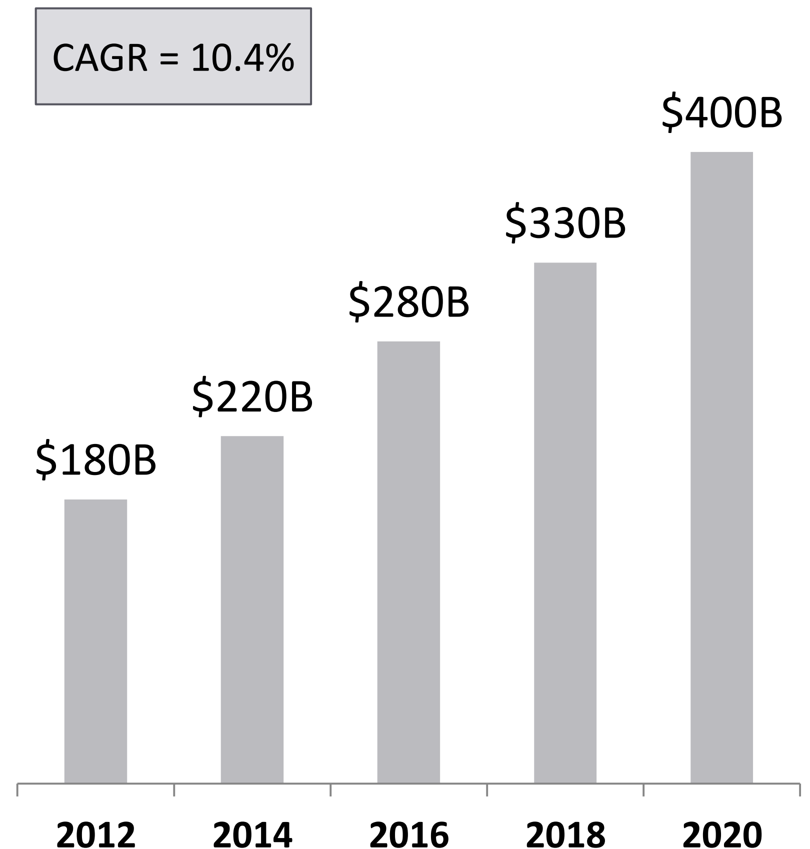
The prevalence and costs of diabetes are growing…

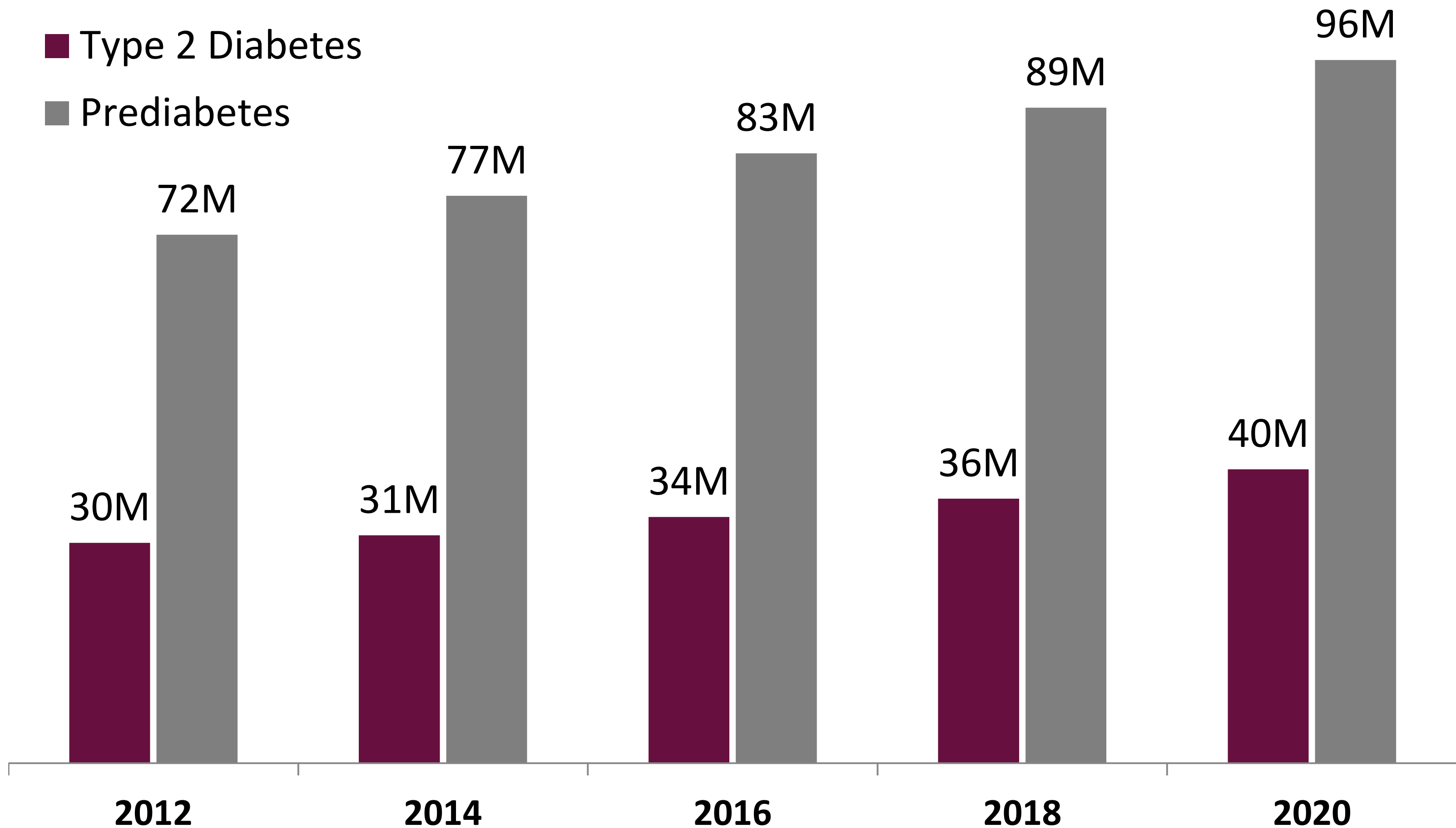




Source: "The United States of Diabetes: Challenges and opportunities in the decade ahead," UnitedHealth Center for Health Reform & Modernization; "Economic Costs of Diabetes in the U.S. in 2007," American Diabetes Association

…and there are 72 million prediabetics at high risk of progressing

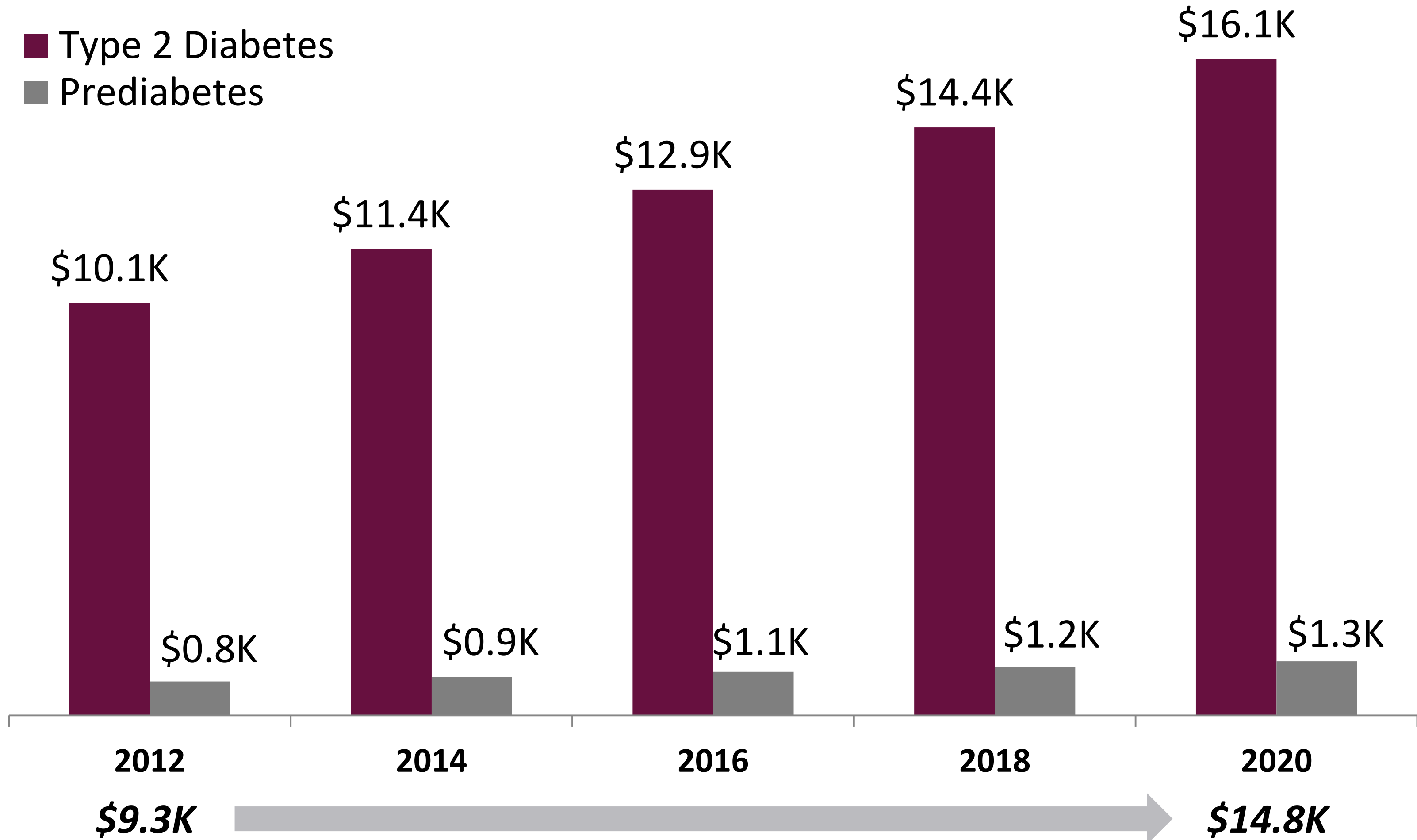
Diabetes and prediabetes prevalence, American adults
Millions of people



Source: "The United States of Diabetes: Challenges and opportunities in the decade ahead," UnitedHealth Center for Health Reform & Modernization; "Economic Costs of Diabetes in the U.S. in 2007," American Diabetes Association

In 2012, the annual cost differential of treating a diabetic versus a prediabetic is $9,300

Medical cost of diabetes versus prediabetes per patient per year
$ Thousands



Source: "The United States of Diabetes: Challenges and opportunities in the decade ahead," UnitedHealth Center for Health Reform & Modernization. Based on saving projections for Medicare and Medicaid dual eligible population

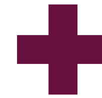
Fortunately, there is a proven intervention that lowers annual progression from 11% to 5%

Proven, Research-Based Solution	***Significant Impact***	***1-Year Lifestyle Intervention***	***Developing Provider Network***

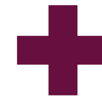
11% progression

5% progression

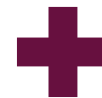
Identify



Recruit



Deliver



Measure

Source: "Reduction in the Incidence of Type 2 Diabetes with Lifestyle Intervention or Metformin," The New England Journal of Medicine.

Misaligned incentives and lack of capital have impeded scale; an outcomes-based security can change the game

Problem

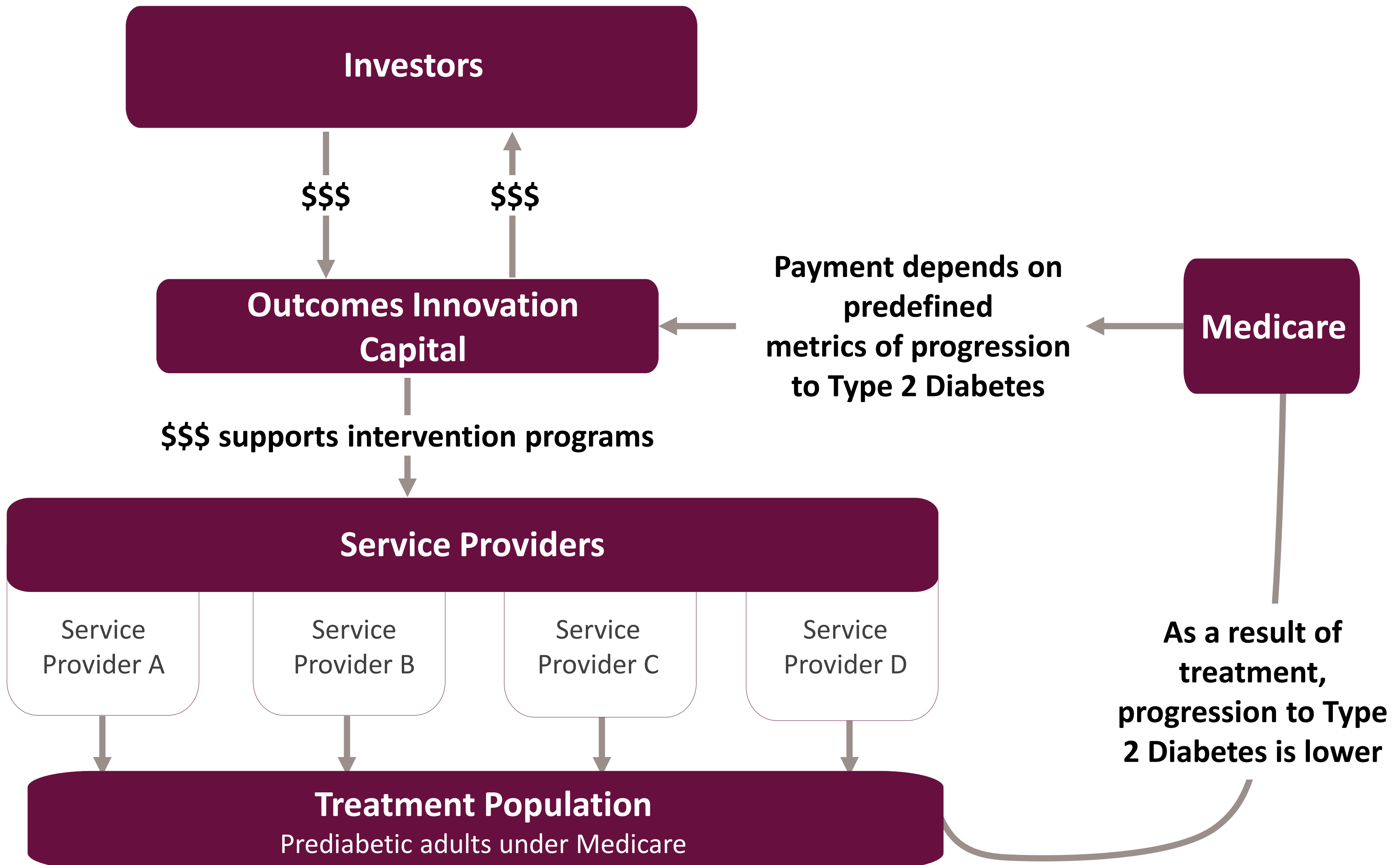
- Misaligned incentives
- Lack of capital
- Failed legislation
- Low program awareness

Solution

An outcomes - based security

aligns incentives of individuals, providers, payors, and investors

The benefits flow of an outcomes-based security aligns stakeholders



Medicare is an ideal payor partner for our outcomes-based security

Economic Impact

- Medicare has a large population of treatable prediabetics

	Prediabetes	Diabetes
Treatable population	**20M**	**10M**
Healthcare costs (total)	**$16B**	**$103B**
Healthcare costs (pp)	**$830**	**$10,100**

Non-Market Opportunities

- *Federal:* Medicare seeks cost reduction through innovation, prevention, and performance (e.g., Center for Medicare and Medicaid Innovation)
- *State:* Illinois and Oregon have both passed recent legislation that seeks to reduce Medicare costs through improved health outcomes

Source: "The United States of Diabetes: Challenges and opportunities in the decade ahead," UnitedHealth Center for Health Reform & Modernization. "Governor Quinn Announces Illinois is Second State to Launch Social Impact Bond Program," http://www.enewspf.com/latest-news/latest-local/42013-governor-quinn-announces-illinois-is-second-state-to-launch-social-impact-bond-program.html, "Experiment in Oregon Gives Medicaid Very Local Roots," New York Times.

To develop the security, Outcomes Innovation Capital will need to:

1

Negotiate with Medicare

- Agree upon shared savings
- Determine progression outcome goals

2

Locate initial investors

- Secure early stage philanthropic investors
  - e.g., Robert Wood Johnson Foundation

3

Fund service providers

- Identify service providers
- Facilitate CDC accreditation

4

Track outcomes

Outcomes Innovation Capital

- Track and measure outcomes
- Partner with third-party auditor

Outcomes Innovation Capital's expertise will enable us to develop the outcomes-based security and scale the intervention

Outcomes Innovation Capital's Role

Pricing and risk expertise

- Identify category risk for individuals, geographies
- Price securities

Service provider expertise

- Support participant recruitment efforts
- Provide service providers with best practices

Measurement and evaluation expertise

- Optimize payouts for outcomes
- Ensure accuracy of data collection

Financial Perspective

Four cash flow categories drive the security's return to investors

Cash Outflows			*Cash Inflows*
Intervention Spend (year t = 1)	**Evaluation Spend (years t = 2, 3)**	**Management Fee (years t = 1, 2, 3)**	**Shared Savings Outcome (years t = 1, 2, 3)**
• 10,000 initial participants • 70% annual attrition • 3,000 successful participants • $550 per successful participant • Payments for meeting milestones	• $100 per successful participant • Sample successful participants	• 2% annual maintenance fee • 20% performance fee over 10% IRR hurdle	• 50% cost savings shared with investor • Payout based on expected progression − **No intervention:** 11% − **Intervention:** 5%, 7.5%, and 9%

Two key drivers impact Internal Rate of Return (IRR): intervention attrition and progression to Type 2 diabetes

3-Year Internal Rate of Return of Intervention by Attrition and Progression

Progression Rate (Yrs 1-3)	Attrition Rate: 60%	65%	70%	75%	80%
5%, 5%, 5%	44%	39%	33%	26%	19%
5%, 6%, 7%	35%	30%	25%	19%	12%
5%, 7.5%, 9%	23%	18%	13%	8%	1%
6%, 8%, 10%	7%	3%	-2%	-7%	-14%
6%, 10%, 11%	-16%	-19%	-23%	-27%	-32%

Expected IRR (highlighted: 13%)

Strategies to mitigate risk of key drivers can improve financial and social outcomes

Attrition Mitigation Strategies

- **Incent and train providers**
  - Retention performance awards
  - Best practices guide
  - Provider online community
- **Reward individuals**
  - Monetary rewards
  - Non-monetary awards

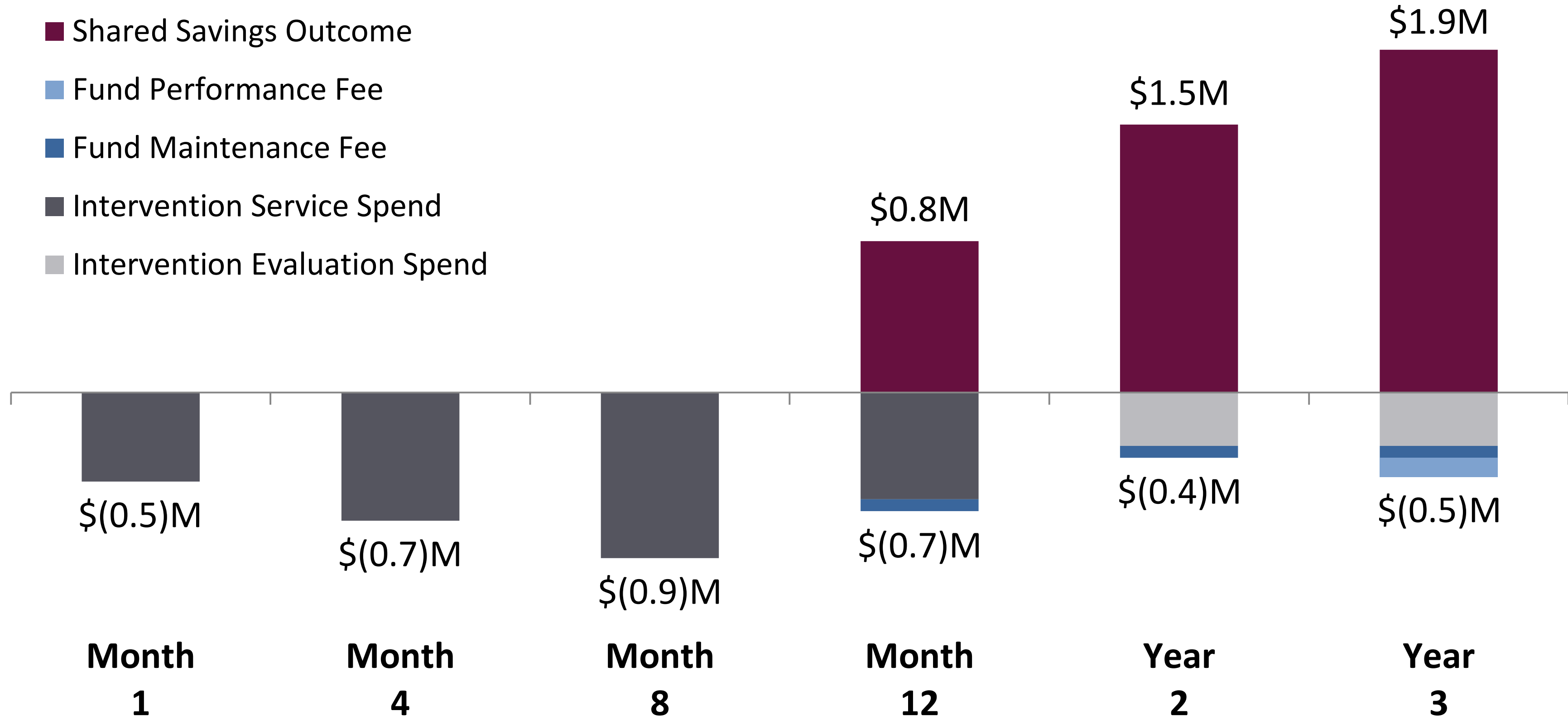
Progression Mitigation Strategies

- **Offer self-management tools**
  - Tracking tools (e.g., mobile apps, pedometers)
  - Gym memberships
  - Communications tools
- **Provide additional programming**
  - Alumni support and mentorship
  - Quarterly check-in meetings
  - Extracurricular activities (e.g., cooking classes)

The pilot of 10,000 participants yields a 13% internal rate of return

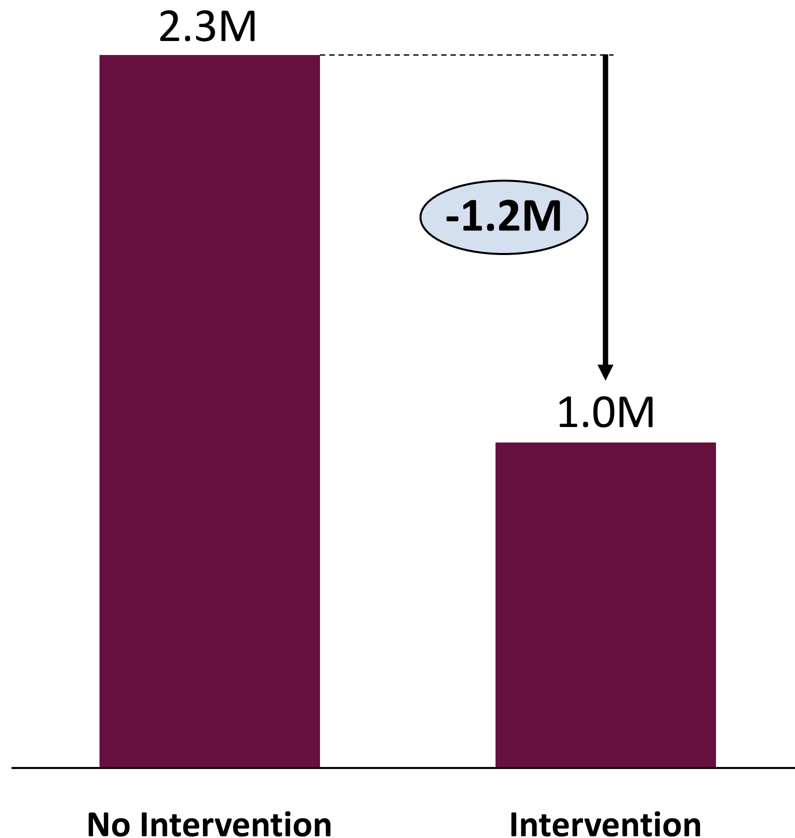
Diabetes Outcomes-Based Security 3-Year Cash Flows

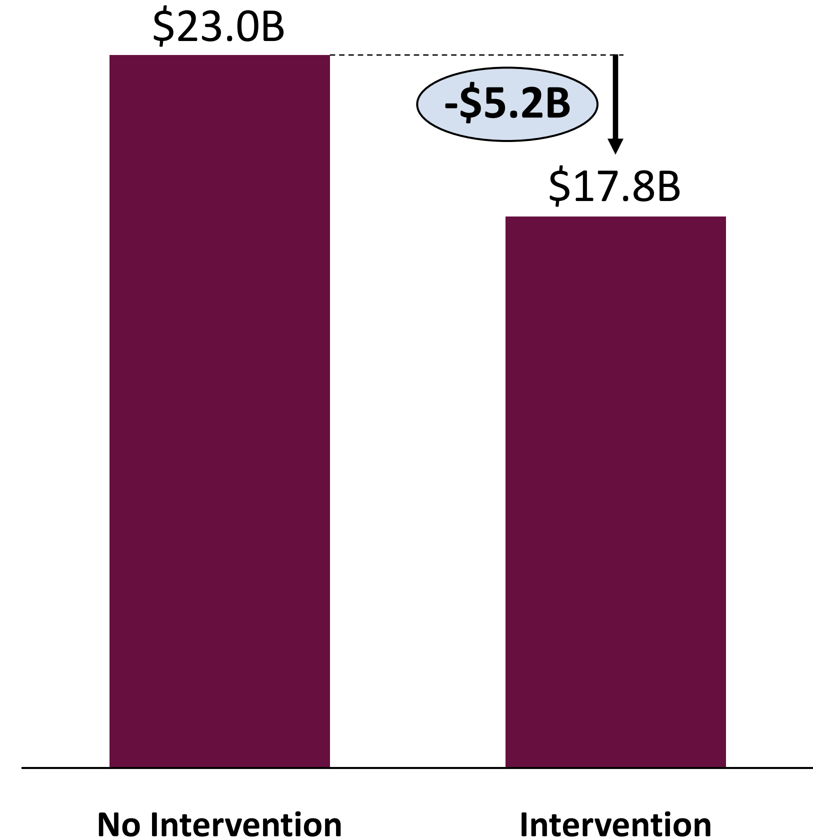
$ Millions



IRR = 13%

At scale, the security could save millions of lives and billions of dollars

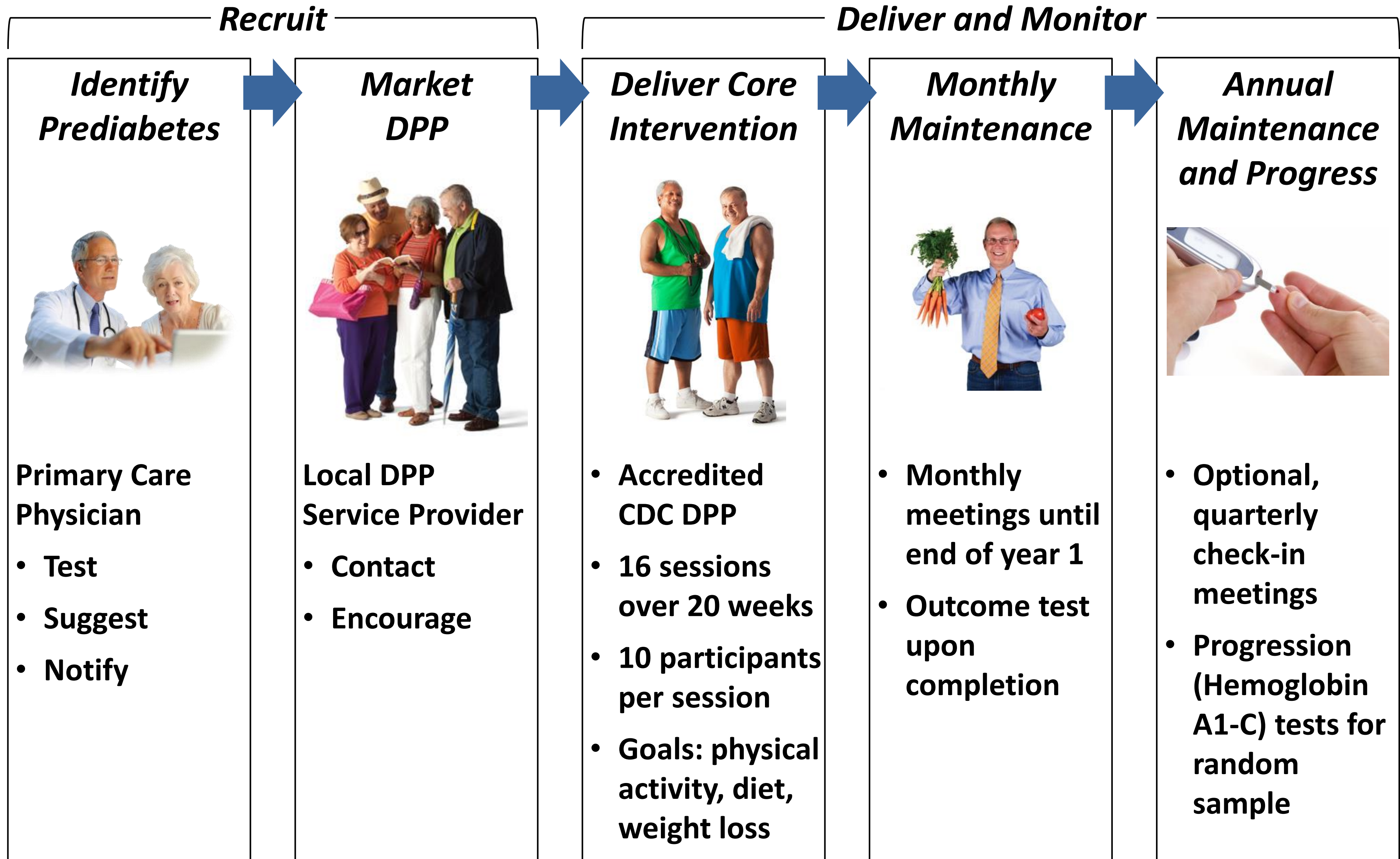




Questions

Appendix

The Diabetes Prevention Program (DPP), a proven lifestyle intervention, reduces annual Type 2 Diabetes progression from 11% to 5%



Given the state of Medicare today, it is an ideal target for the outcomes-based security

The economics of Medicare exhibit significant potential for savings:

- *In 2012, over 60% of the Medicare population had either prediabetes or diabetes*
  - 40% of the population have prediabetes (19.6 of 49 million)
  - 21% of the population have diabetes (10.2 of 49 million)

- *Of total spending related to prediabetes and diabetes in 2012, Medicare accounts for 58%*
  - 7% of total spending is attributed to prediabetes ($16 of $221 billion)
  - 51% of total spending is attributed to diabetes ($103 of $221 billion)

Additionally, the non-market environment is poised for innovation:

- *Affordable Care Act*
  - Established the CMS Innovation Center
  - Established the Prevention and Public Health Fund
  - Shift payments from fee-based to pay-for-performance

- *Increased interest in outcomes-based securities*
  - Federal government dedicated $100 million to investigating outcomes based securities in FY 2012
  - Multiple states have also set aside money, most recently Illinois

Source: "The United States of Diabetes: Challenges and opportunities in the decade ahead," UnitedHealth Center for Health Reform & Modernization; Public Press

Medicare is the ideal partner in executing this security

Payor	Prediabetes Population, 2010	SIB Partner Pros	SIB Partner Challenges
Medicare	17.7M (including dual-eligibles)	• Largest population • New Medicare Innovation Center may present opportunity to pilot • Time to participate (retired) • Clients don’t switch payors	• Federal gov’t bureaucracy • Scaling may require changes to federal laws • Low (but increasing) incentive for government to save • Age, shorter long-run savings
Medicaid	2.1M	• High-risk population • Long-run potential savings due to lower average age • State administration as above	• Low participation priority due to other life challenges • Scaling may require changes to federal laws
Private Insurers	32.8M	• Greatest incentives to save • Large long-run savings due to lower average age • Familiar with investments • Higher tolerance for risk and innovation	• Competition: UnitedHealth • Fragmented insurance market, many plans and relationships to manage • Insurers lack incentive to share long-run savings b/c of frequent client switching

Recommended Partner

Monitoring cohorts is the best method to accurately measure outcomes

Approach	Investor Payout	Pros	Cons
Cohort Monitor	Based on improvement of expected progression from prediabetes to diabetes for a cohort of individuals. Expected progression • Untreated: 11% per year • DPP Treated: 5% per year	• Based on most important metric, diabetes progression • Investors are compensated for full program impact	• May have to maintain several separate cohorts • Difficult to monitor and track • Requires annual tests • Requires longer program duration (5 years)
Weight & Body Metrics	Based on participant weight-loss and/or body metric targets (e.g., 10% of current weight, 3 inches of waste line).	• Tangible, visible outcome • Easier tracking – tied to individual outcomes • Could run program in shorter intervals	• Body metrics under predict progression by ~65% to 80% (i.e., progression is lower even w/out weight loss) • Determining savings sharing may be difficult
Physical Activity	Based on participants hitting designated levels of physical activity	• Best metric to determine improved outcomes • Tracking tied to individuals	• Expensive to administer (equipment, infrastructure) • Potential for fraud • Participants may find intrusive

List of interviewees

Health Care Management

Tim Koehler | President, Diabetes Prevention and Control Alliance, UnitedHealth Group

Stead Burwell | CEO, Alliance Health Networks

Rick Brush | CEO, CollectiveHealth

Diabetes Prevention Experts

Dr. Ronald Ackermann | Associate Professor in Medicine and lead designer and director of studies evaluating DPP interventions at the YMCA, Northwestern University

Donna Harakal | Clinical Research Nurse overseeing WeightWatchers/Diabetes Type 2 trial, Northwestern University

Megan Heavrin | Grant Specialist, YMCA USA Chronic Disease Prevention Program

Dr. Mark Pereira | Associate Professor in Epidemiology and Community Health, University of Minnesota

Institutional Investors

Paul Tarini | Senior Program Officer, Robert Wood Johnson Foundation

David Schnepp | Financial Advisor, Merrill Lynch

Impact Investing Experts

David Hutchison | CEO, Social Finance UK

Nirav Shah | Director, Social Finance US