

# *First 1000 Days*



## **Creating Neighborhoods of Promise** Compassion, Connection, Empathy, and Goodwill

**A Public/Private Collaboration**

**Contact Wellness Foundation**  
02000 SW Palatine Hill Road  
Portland, OR 97219  
503-806-2424

## **First 1000 Days** **“partnering for life”**

- First 1000 Days Maternal Medical Home (FTD MMH) -a community-based embrace of pregnant women from conception to age 2.
- Emerging science of Developmental Origins of Health and Disease (DOHaD) is the foundation for “Good Nutrition in the Womb.”
- “Wellness Algorithm” – Effective approach to sustained health and chronic disease prevention.
- A multi-cultural Public/Private Collaboration transforming healthcare, with reduction in birth complications and chronic disease.
- Improved Quality of Life enabled through a holistic approach that includes Prevention.
- Sustainable program supported by “pay for success” Birthright Bonds™.
- Social Determinants of Health leveraging behavioral science with first-of-its-kind Longitudinal Study.
- A Win/Win Healthcare Transformation Partnership.
- Triple Aim: Better Healthcare -Better Health -Lower Cost.
- A New Standard of Care for Maternal and Child Health.

## First 1000 Days – A Summary

At Contact Wellness Foundation (CW), we seek to leverage promising new ideas from health and behavioral sciences through practical, broad-scale applications that empower and motivate women living with obesity, diabetes and/or other chronic disease to take control of their health and wellbeing. Such a paradigm change is predicated on the individual's motivation to embrace an alternative that is simple, proven, and highly-effective: adopting a healthy diet, engaging in regular physical activity, and maintaining active and rich connections with others. CW believes that a truly effective approach to sustained health and chronic disease prevention, what we call a "Wellness Algorithm," must include a powerful social and emotional component to support the individual's commitment to long-term change. Our Wellness Algorithm prescribes the formation of positive relationships with family, neighbors, and peers through direct human connection and virtual relationships (social networking).

We predict that within two generations the trajectories of obesity and diabetes can be reversed with a well-designed maternal and child health initiative informed by the emerging insights of a science known as Developmental Origins of Health and Disease (DOHaD). Primary clinical research and epidemiological data within DOHaD science suggests developmental programming is influenced by adverse early gestational environments (e.g., poor nutrition, stress, diabetes, smoking and substance abuse) and is, in turn, associated with incident obesity, type 2 diabetes and other chronic diseases over one's lifespan. DOHaD science suggest that as expectant mothers optimize their health through better nutrition and exercise, their children's lifetime risks of developing chronic diseases like type 2 diabetes, obesity, and heart disease are significantly reduced. Assuming DOHaD science is valid, the health of the next and subsequent generations is largely determined by the body compositions and diets of today's girls, young women, and mothers. In light of the profound impact this "New Science" may have on reversing the incidence of chronic disease, CW seeks partners to conduct research and advance groundbreaking interventions to improve maternal and early childhood health. Through a process known as "fetal programming," the metabolic function of the mother is mirrored in the offspring, and has a tremendous impact on the child's long-term health. Malnourishment can cause negative fetal programming that has an intergenerational transfer effect extending from grandmother to mother to child, thus resulting in an increased lifelong risk for chronic disease (e.g., metabolic disease, cancer, and cardiovascular disease). The combination of poor diet, sedentary lifestyles, and the ballooning elderly population has created the ideal environment for the propagation of obesity and diabetes, resulting in hundreds of millions of people currently living with obesity and pre-diabetes. These people are at an increased risk for heart disease, stroke and kidney failure. If even a portion of these patients make the necessary lifestyle changes to prevent obesity and diabetes, it will dramatically decrease the cost of healthcare.

CW First 1000 Days (FTD MMH) and Origins FTD, both Oregon corporations, intend to serve as Conveners, managing a public/private collaboration in an initiative known as the First 1000 Days Maternal Medical Home program (FTD MMH). This FTD program will provide enhanced prenatal care within a patient-centered Primary Care Home Model for pregnant women and their children. Our vision is to educate, encourage and empower the expecting mother and her family so that she might optimize her nutrition, moderate her weight gain, and manage her emotional stress in the course of her pregnancy and post-partum, all leading to more positive birth outcomes and healthier babies. The focus will be on the 1000 day period from conception to age two, a critically important window in which to positively shape a child's physical, emotional, cognitive, and social development. Through a combination of innovative technologies and delivery systems, we will improve health outcomes, thereby realizing vast opportunities for improved quality of life with reduced healthcare cost. The FTD program uses a collaborative care model and health communication technologies to enhance the perinatal experience, improve the pregnant woman's health and positively affect birth outcomes, resulting in fewer Neonatal Intensive Care Unit (NICU) admissions.

## First 1000 Days Program and the Wellness Algorithm

We have created the framework for a Wellness Algorithm that, when successfully defined and implemented, will result in the monetization of prevention, and provide a return on investment several times larger than the initial cost outlay. The ability to scale the FTD program will depend upon our collective success as evidenced by fewer birth complications in the context of simultaneously bending the healthcare cost curve. These health and economic outcomes will drive acceptance of the program in the healthcare community and allow translation of the DOHaD science into practice, leading to a New Standard of Care for Maternal and Child health.

We propose to integrate the scalable FTD program as an augmentation to traditional prenatal care. The conditions in which infants are born are important measures of a community's health status. Birth sets the stage for the rest of a person's life. The conditions of birth affect not only infants, but also their families and the community at large because of the emotional and monetary costs of caring for people with special needs. Key to improving birth outcomes is to identify and enroll pregnant women and their families in prenatal care as early as possible. We will integrate a comprehensive set of enhanced services within the prenatal care protocol as well as provide novel technologies to enhance patient/provider communication. Services will address behavioral, psychological, and social factors faced by women during pregnancy. Provided by both licensed and unlicensed professionals, the services include nutritional and psychosocial counseling, wellness opportunities, and small group support. We seek to increase the **frequency** of physical contact and connection with pregnant women and their families, and extend the **duration** of that contact with compassionate supporters in addition to the obstetrician. The services will be technology enabled, providing secure cloud-based services. As low-income and uninsured women are less likely to receive adequate prenatal care, a primary element of the program is to seek to establish tighter connection between those groups gaining early awareness of pregnancy and prenatal care providers.

Goals and objectives that integrate biomedical and socio-environmental (contextual) aspects of pregnant women will be established to form the basis for the customized Wellness Algorithm that addresses and includes "good nutrition in the womb." Nutrition, broadly defined in this case, relates to nourishment of the body, mind and spirit. The process, guided by a facilitator, is influenced by the unique needs of the pregnant woman who is progressively encouraged to take charge of her own wellness, supported by a small group (e.g. case manager, peer support, family) comprising a "circle of influence" that embraces and encourages her in her journey to better health, increasing the likelihood of birthing a healthy child not predisposed to chronic disease.

Bending the healthcare cost curve requires a reduction of chronic disease "at the source," which requires a focus on "good nutrition in the womb." By developing an effective, scalable instructional platform that ensures widespread clinical dissemination and fidelity, and incorporates tailored curricula and booster training, we can reduce the risk of significant birth complications and long-term health problems for both expectant women and infants. By innovatively combining tenets of nutrition and physical activity with psychosocial components, leveraging electronic technology and treat-to-target clinical approaches for addressing relevant biological and psychosocial parameters, and empowering patients to improve their health behaviors, we believe the following results are possible:

### Short-term Outcomes

- Empowered patients as a result of person-centric inter-disciplinary care teams.
- Fewer adverse birth outcomes resulting from better health of pregnant women.
- Fewer birth complications, reducing the number of NICU admissions.

#### Medium-term Outcomes

- Improved child physical, emotional, cognitive, and social development.
- Children better prepared for learning, increased executive function.
- Increased and improved self-care monitoring and wellness management.

#### Long-term Outcomes

- Chronic disease substantially reduced within two generations.
- Significant cost savings from reduced chronic conditions and more productive citizens.
- Shift from disease focus to wellness provides for improved health at lower cost.

Total FTD MMH budget is \$6.0 million over the two-year demonstration period. Following the initial \$6.0 million program established in rural Oregon, CW intends to seek an additional \$28.5MM in funding required to provide the program to all 36 counties in Oregon, including 3 counties in the Portland metropolitan area. Our projections of the FTD program show short-term healthcare savings begin in year two and increase annually, ultimately returning over 10x from reduced birth complications.

Execution of the FTD program requires developing an innovative sustainable model for funding prevention and wellness. This can be achieved with a new type of financing vehicle that promises to accelerate social innovation and capture the cost savings associated with disease prevention, returning a portion to initial investors and the rest to taxpayers. This vehicle is the Social Impact Bond (SIB), also known as “Pay for Success,” is described in the next section. The concept is simple: the government/society pays the bond purchaser from the savings generated and financed by the SIB, **if and when the program achieves the designated success metrics**. Our goal is to create a FTD program financed by a series of SIBs. The FTD intervention will translate DOHaD science, leading to more positive birth outcomes in the short-term, increased cognitive function and learning readiness in the medium term, and reduction of chronic conditions in the long term.

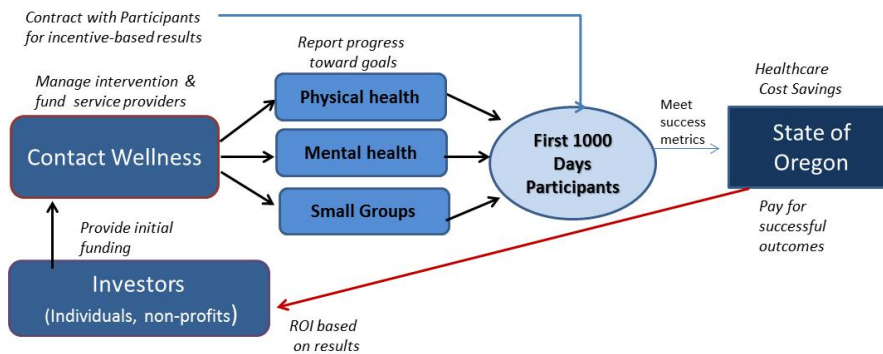
## Social Impact Bonds The Birthright Bond™

CW is developing a financing vehicle known as The Birthright Bond™ to encourage the funding of the FTD interventions and ultimately a Longitudinal Study, all laying the foundation for a New Standard of Care for Maternal and Child Health. DOHaD Science suggests, in a process known as “fetal programming,” that IF a woman can manage her metabolic function within normal ranges by maintaining proper nutrition and exercise during her pregnancy, and psycho-social-economic factors such as anxiety and depression are controlled, the baby will be born not predisposed to type 2 diabetes, obesity, or other chronic conditions. And the converse also appears true; IF a mother has elevated blood sugar and other metabolic dysfunction during her pregnancy, the fetus will mimic the mother’s metabolic function, also experiencing elevated blood sugar. If DOHaD science is positively translated into clinical practice and good nutrition in the womb can become the norm, then over a period of two generations, the trajectory of chronic conditions will have been reversed and savings to society will be enormous.

The early financing of prevention in the form of a Birthright Bond™ can yield extraordinary results. We believe a public-private partnership in support of preventive care is critical to reversing the tsunami of rising healthcare costs and improving quality of life. The Birthright Bond™ is purchased by a combination of public and private enterprise, (public charities, NGOs, wealthy individuals, or socially-minded companies). Such purchasers are typically inclined to provide funding for charitable purposes without expectation of a return, and this provides a socially responsible investment with a return based on participants achieving pre-determined successful outcomes.

Following is a graphic representation of the bond transaction. Note that the red arrows are public funds and the black arrows are private funds. Public funds are returned to investors only after pre-determined success metrics have been achieved.

### Pay For Success – Outputs to Outcomes



Details of bond structure are subject to negotiation. We expect a structure in which Bond Holders earn a coupon rate through year 10, at which time payment is remitted based on participants meeting objective success measures over the time period, suggested as conception through child’s age 10. Payment will be funded from healthcare cost savings as a result of healthy birth outcomes, school readiness, and reduction in chronic conditions. The child, the child’s family, and society benefit as the result of a healthier, more productive child not predisposed to chronic conditions during his/her lifetime.

Elements to be further defined include the success metrics, verifiable performance, and the time period. Short-term savings from the avoidance of adverse birth outcomes which often lead to NICU admissions can be calculated based on historical data. Positive, age-appropriate child assessments and kindergarten readiness can lead to medium term

cost savings as a result reduction in the number of children participating in foster care and/or the juvenile justice system. Certain health outcome predictions can be made based on a child's height and weight at age five. Specialists will need to be consulted for the longer term performance measures and quantifying savings. However, current literature provides guidance for determination of successful office-based childhood measures predicting the presence and absence of future type 2 diabetes at 9 years after baseline.<sup>i</sup> Childhood insulin measurement improved prediction, facilitating approaches to primary prevention of type 2 diabetes. Systolic Blood Pressure, BMI, and triglyceride concentration in the top fifth percentile predicted type 2 diabetes; along with glucose level of 100 mg/dl or higher, and high-density lipoprotein cholesterol (HDL) in the bottom fifth percentile. In the Princeton Follow-up study, if childhood BMI, Systolic Blood Pressure, and Diastolic Blood Pressure were all lower than the 75<sup>th</sup> percentile, the likelihood of type 2 diabetes at age 39 was 2%; the likelihood was 1% if the parents did not have diabetes.

Since the success of a program such as FTD is highly dependent upon the motivation of the individual to make positive choices, a portion of the healthcare cost savings should be shared with those participants successfully meeting the object success measurements over time. Rewards and positive reinforcement are potential tools to drive sustained behavior change. This model includes an incentive-based 529 savings bond, a scholarship component to promote advanced education for the child.

### **Quantifying Healthcare Cost Savings Opportunities**

Annual medical expenses related to preterm birth in the U.S. are approximately \$26 billion. The average cost of a preterm newborn's medical care is \$51,000. For premature infants born at less than 28 weeks, medical costs in the first year of life average \$190,467.<sup>ii</sup> In contrast, the average cost for a baby delivered at term is \$3,325. Additionally, preterm babies generate long-term health care costs related to treatment of conditions resulting from complications of their prematurity, such as chronic lung disease or developmental disorders.

Maternal obesity is another major public health problem that has increased significantly over the past 20 years. Currently, 1 in 5 pregnant women in the United States is obese. Maternal obesity results in higher rates of cesarean section, higher rates of infant birth defects and a three-fold higher incidence of neonatal death. Babies born to obese mothers, even if born at a normal weight, have been shown to have multiple metabolic problems with lifelong consequences.<sup>iii</sup> Obesity now affects 17% of all children and adolescents aged 2 – 19 (12.5 million) in the United States, triple the rate from one generation ago.<sup>iv</sup> In 2007, the cesarean delivery rate increased to 32%, marking the 11<sup>th</sup> annual increase. This rate has climbed by more than 50% since 1996.

Good nutrition in the womb can result in significant reductions in healthcare costs as the incidence of chronic conditions such as diabetes and obesity are significantly reduced. According to an actuarial-based study by Milliman, the projected impact of diabetes on our society is an increase in the overall healthcare expenditure for people with type 2 diabetes from \$340 billion in 2011 to \$1.6 trillion in 2031. These costs are driven by the higher rate of several comorbidities that are prevalent in people with type 2 diabetes. Among the most common serious complications are heart attacks, strokes, amputations, blindness and kidney failure. People with diabetes have two times the prevalence of hypertension and congestive heart failure than people without diabetes. These complications (and resulting costs) can be avoided with proper management and control of one's blood glucose, as shown in the Diabetes Control and Complications Trial (DCCT). Currently, 40% of the US population with chronic conditions account for 84% of all healthcare spending as this population is the heaviest users of health care services, and are more likely to have unnecessary hospitalizations, more health care visits, and more likely to fill prescriptions.

Longer-term savings from reduction of diabetes are projected based on evidence from the DCCT which shows reductions of 50-70% in complications are possible with tight management and control of blood glucose. This financial impact of this reduction is contained within the Milliman report, showing significant annual cost reduction with improved control. Reductions in complications vary among payer group due to age differences. Milliman calculates that a 50% reduction of uncontrolled type 2 diabetes translates to an annual reduction of 239,000 diabetes-related complications, for an expected annual cost reduction of \$196.5 billion.

## Estimated Program Costs

Following is a summary of costs expected to be incurred in several programs: the First 1000 Days Program, a Series of Pilot Studies implementing proven elements of the FTD program, and a Longitudinal Study. A closely related nutritional study is currently underway and results will become part of the future studies, although funding has been secured independently from the SIB approach and is not contained within this analysis.

There will be significant economies of scale within the FTD program as the program is expanded to include additional participants. In addition, start-up costs in the first few years to refine protocols and develop materials not necessary to successful operation in later years. Based on this, the projected first year cost of nearly \$5,000 per participant based on only 1,000 participants in the initial year is reduced to \$1,400 at the end of year three with 10,000 participants, and \$1,000 at the end of year five. We do not foresee additional reductions below the \$1,000 per person target.

In addition to the cost of providing the programs, we believe an additional incentive is necessary to ensure full participation of the pregnant women. Our proposal is to add a scholarship of \$1,000 for each woman completing the program with successful metrics. That scholarship would be established in the child's name, set aside in an interest-bearing fund and paid out towards education costs when the child reaches age 18.

	SHORT-TERM			MEDIUM-TERM				LONG-TERM			
	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	Years 11-20
<b>First 1000 Days Program</b>											
Number of Participants	1,000	5,000	10,000	15,000	20,000						-
Number of counties	6	18	33	36	36						
Cost per participant	\$ 4,948	\$ 1,892	\$ 1,409	\$ 1,133	\$ 1,000						
FTD Challenge	4,947,777	9,460,342	14,092,668	16,995,000	20,000,000						
<b>Evidenced-based Studies</b>	<i>Pilot Study</i>			<i>Pilot Studies in Support of Longitudinal Study</i>				<i>Longitudinal Study</i>			
Number of Participants	400	800	1,200	1,500	1,500	8,000	10,000	10,000	10,000	10,000	10,000
Number of counties	4	5	6	12	20	30	36	36	36	36	36
Cost per participant	<i>Funding secured</i>			\$ 4,000	\$ 3,500	\$ 3,000	\$ 2,500	\$ 2,000	\$ 2,000	\$ 2,000	\$ 2,000
<b>Total Study Cost</b>				6,000,000	5,250,000	24,000,000	25,000,000	20,000,000	20,000,000	20,000,000	200,000,000
Birthright Bond Funding™	\$ 4,947,777	\$ 9,460,342	\$ 14,092,668	\$ 22,995,000	\$ 25,250,000	\$ 24,000,000	\$ 25,000,000	\$ 20,000,000	\$ 20,000,000	\$ 20,000,000	\$ 200,000,000
Cumulative Funding	\$ 4,947,777	\$ 14,408,119	\$ 28,500,787	\$ 51,495,787	\$ 76,745,787	\$ 100,745,787	\$ 125,745,787	\$ 145,745,787	\$ 165,745,787	\$ 185,745,787	\$ 385,745,787

We are currently seeking an investment first of \$6 million and following the demonstration project an investment of \$28.5 million via the Birthright Bond™ to cover projected expenditures for the first 3 years of the First 1000 Days program. Thereafter, we believe that the short-term savings achieved from such a program will exceed the ongoing cost of the program, making it sustainable. Costs for years 4 and 5, in which the program is expanded to all counties in Oregon, are included above. The focus of First 1000 days program is pregnant women enrolled in Medicaid, although such an enhanced prenatal program could be applied across all populations.

Following implementation of successful First 1000 Days interventions across Oregon, CW will collaborate on a series of Pilot Studies that promote tight management and control of metabolic function, coupled with psycho-social-economic support for pregnant women. We envision the Pilot Studies will ultimately inform a landmark Longitudinal Study rivaling the DCCT, to be funded by more traditional sources including a public/private partnership that includes the NIH. The Pilot Studies will incorporate the knowledge gained from the initial First 1000 Days intervention and the smaller nutrition study. All combined, these studies will provide the necessary evidence to support a new standard of care for maternal and child health, which ultimately will result in better health and bending of the healthcare cost curve



## Estimated Savings

The average cost of prenatal care, calculated as Per Beneficiary, Per Year (PBPY) is approximately \$21,000 and growing each year (three percent inflation used below). We believe the improved birth outcomes as a result of healthier mothers and optimal sized, healthy babies will reduce the average prenatal cost to approximately \$18,000 PBPY. As the First 1000 Days program cost decreases over time, significant savings result to the point that the cost of the program is covered by the short-term savings. For example, in year 4, we expect cumulative costs related to First 1000 Days are \$45 million, whereas savings calculated to \$66 million, resulting in a \$21 million net savings, or approximately 7 percent.

Savings	<u>Sustainability Period Projection</u>				
				Year 4	Year 5
<b>Current costs without FTD intervention</b> (assumes 3% inflation )					
Number of program participants	1,000	5,000	10,000	15,000	20,000
Total PBPY Cost of Care of Program Participants	\$ 20,616	\$ 21,234	\$ 21,871	\$ 22,528	\$ 23,203
Total Affected Spend	\$ 20,615,950	\$ 106,172,143	\$ 218,714,614	337,914,078	464,068,667
<b>Proposed Intervention: FTD</b> (assumes 3% inflation)					
Number of program participants	1,000	5,000	10,000	15,000	20,000
Total PBPY Cost of Care of Program Participants (pro forma)	\$ 17,284	\$ 17,802	\$ 18,336	\$ 18,886	\$ 19,453
Cost of FTD Intervention	\$ 4,948	\$ 1,892	\$ 1,409	\$ 1,133	\$ 1,000
Cost of Care Per Beneficiary including FTD Intervention	\$ 22,231	\$ 19,694	\$ 19,745	\$ 20,020	\$ 20,453
Total Affected Spend	\$ 22,231,297	\$ 98,470,470	\$ 197,453,531	\$ 300,292,534	\$ 409,055,081
<b>Savings from Program over Current Cost</b>	\$ (1,615,347)	\$ 7,701,672	\$ 21,261,082	\$ 37,621,544	\$ 55,013,586
<b>Cumulative savings</b>		\$ 6,086,326	\$ 27,347,408	\$ 66,584,298	\$ 113,896,212
<b>Percentage savings</b>	-7%	8%	11%	13%	13%
<b>Savings per beneficiary</b>	(1,615)	1,540	2,126	2,508	2,751
<i>Total Cost of Intervention to be funded by investor</i>	\$4,947,777	\$ 9,460,342	\$14,092,668	\$ 17,000,000	\$ 20,000,000
<i>Cumulative cost of intervention</i>	\$4,947,777	\$ 14,408,119	\$28,500,786	\$ 45,500,786	\$ 65,500,786
<i>Cumulative savings from intervention</i>	-	\$ 6,086,326	\$27,347,408	\$ 66,584,298	\$ 113,896,212
<b>Savings in excess of intervention cost</b>				\$ 21,083,512	\$ 48,395,426
<b>Cumulative Savings as percent of cost</b>				7%	12%

In addition to the short-term savings from reduction in birth complications for mother and child, there are medium-term savings from children better prepared, physically, emotionally, cognitively, and socially, for their educational years, and substantial long-term savings to be achieved from children born not predisposed to chronic disease. Although not related to this study, Milliman calculated the potential savings from a reduction in chronic disease. Following is a table showing the financial implications of reduction in uncontrolled diabetes based on a 10%, 30% and 50% reduction. On the next page is an additional extrapolation of savings to the FTD population.

	Reduction of Uncontrolled by 10%	Reduction of Uncontrolled by 30%	Reduction of Uncontrolled by 50%
<b>2011</b> (21.9 million people with T2D)			
Number of Reduced diabetes complications	31,000	94,000	155,000
Annual Savings from reduced complications	\$800,000,000	\$2,300,000,000	\$3,800,000,000
<b>2031</b> (32.2 million people with T2D)			
Number of Reduced diabetes complications	48,000	144,000	239,000
Annual Savings from reduced complications	\$39,300,000,000	\$117,900,000,000	\$196,500,000,000

## Applying Long-term Cost Savings from the First 1000 Days

Following is a CW-calculated summary of potential savings which can be achieved specifically from long-term savings due to a new standard for maternal and child health based on DOHaD science. For this calculation, we focused on the gap between the annual cost of care for a person with chronic conditions, and the annual healthcare expenditure for a person without chronic conditions based on the Medical Expenditure Panel Survey, 2006. The gap amounted to approximately \$13,000 per year additional healthcare expenditures per person due to one or more chronic conditions. Applying that 13,000 to the WIC population, both within Oregon and nationwide, calculates to a potential savings of over \$300 million per year. Knowing that any program will not achieve 100% success rate, we have reduced the savings to show the effect if either 50% or 10% of the target WIC population is successful in delivering a healthy baby, and that offspring remains in good health throughout his/her lifetime. Over the 10-year period covered by the social impact bond, using these metrics, savings range from \$300 million to \$1.5 billion.

<b>Cost Savings from Reduction in Chronic Conditions</b>	<b>United States</b>	
	<b>Annual Expenditure</b>	<b>80 year period</b>
U.S. Healthcare expenditures (2010)	2,500,000,000,000	-
Annual U.S. Healthcare expenditure for people with Chronic Conditions (84%)	\$ 2,100,000,000,000	\$ 168,000,000,000,000
Number of People with Chronic Conditions	140,000,000	140,000,000
Healthcare Cost per person with Chronic Conditions	\$ 15,000	\$ 1,200,000
Healthcare Cost per person with no Chronic Conditions	\$ 2,350	\$ 188,000
Increased Healthcare Cost associated with Chronic Conditions	\$ 12,650	\$ 1,012,000
	<b>Oregon</b>	
	<b>Annual Expenditure</b>	<b>80 year period</b>
<i>Application of Chronic Conditions Birth Metrics in State of Oregon</i>		
Approximate number of live births in the state of Oregon	48,000	3,840,000
Approximate number of live births to WIC women (target population)	24,000	1,920,000
Potential annual savings from babies born not predisposed to chronic conditions	\$ 303,600,000	\$ 24,288,000,000
Cumulative savings from successive years of babies born not predisposed to chronic conditions		\$ 1,943,040,000,000
Annual savings from 50% of target population born not predisposed to chronic conditions	\$ 151,800,000	\$ 12,144,000,000
Annual savings from 10% of target population born not predisposed to chronic conditions	\$ 30,360,000	\$ 2,428,800,000
	<b>10 yr period</b>	<b>20 yr period</b>
Cumulative savings savings over time period		
50% of target population	\$ 1,518,000,000	\$ 3,036,000,000
10% of target population	\$ 303,600,000	\$ 607,200,000

## Cost Savings – A Micro View

Following is a calculation of savings based on an individual participant within the First 1000 Days program:

Costs to be incurred	
Intervention cost (at scale)	\$ 1,000
Education scholarship	\$ 1,000
Bond earnings - 15%	\$ 12,000
<b>Total</b>	<b>\$ 14,000</b>
Savings to be realized	
Fewer adverse birth outcomes	\$ 3,750
Educational readiness	\$ 13,387
Avoidance of chronic disease (40 yrs)	\$ 218,775
<b>Total</b>	<b>\$ 235,912</b>
<i>Excess of savings over cost</i>	<i>\$ 221,912</i>
<i>Savings as a factor of original cost</i>	<i>16</i>

## Request for Partnership

CW seeks assistance from financial partners in this effort to stop the rising tsunami of health care costs. We propose a comprehensive business arrangement that contains the following elements:

- Commitment to purchase Birthright Bonds™, providing immediate funding for the initial FTD demonstration project in the State of Oregon
- Formal partnerships with Origins FTD management in the further creation and development of Origins FTD, in the scale-up and roll-out of a for-profit company providing products and services in support of the FTD programs.
- Participation in a groundbreaking, multi-national, multi-cultural Longitudinal Study organized by Oregon Health & Science University's Heart Research Center

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<sup>i</sup> Childhood Predictors of Adult Type 2 Diabetes at 9- and 26- Year Follow-ups Archives Pediatric Adolescent Medicine 2010; 164(1):53-60

<sup>ii</sup> Institute of Medicine Report on Causes, Consequences, and Prevention of Preterm Birth 2007

<sup>iii</sup> Society for Maternal, Fetal Medicine, High Risk Pregnancy Care, Research and Education

<sup>iv</sup> Centers for Disease Control & Prevention; Child Overweight and Obesity, [www.cdc.gov/obesity/childhood](http://www.cdc.gov/obesity/childhood)