WILSON + WILKERSON 2011

# BRAIN HEALTH + BRAIN SKILLS = BRAIN CAPITAL

**FINAL REPORT**

Global Business and Economic Roundtable on Addiction and Mental Health 2011

+

**GREY PAPER**

NEW Workplace of the 21st Century – toward a productivity revolution through mental health & innovation

# CONSTELLATION OF ISSUES

## 01: THE CRISIS OF CO-MORBIDITY

The road to advancing mental health in the workplace is a long but better-marked road than it was 10 years ago. There's more science and more engaged employers, more conferences and more interest. Mental health in the workplace is 'hot,' frankly, but that's dangerously close to 'flavour of the month.' We must vigilantly guard against the latter.

For this very reason: A constellation of issues continues to form a night's sky worth of concerns and barriers which must be reined-in and cleared away to allow for accelerated progress to give mental health in the workplace a permanent location in the global economy.

Depression is at the centre of this complex constellation through its co-occurrence with a wide range of common and big name chronic illnesses. There is ample evidence that depression's alliance with cardiovascular disease, diabetes, addictions and other major chronic illnesses alters the course and outcome of these conditions.

Knowledge of this phenomenon sprang from two streams of groundbreaking research over the past 15 years:

**I) The findings of legendary epidemiologist, Dr. Ron Kessler of Harvard University who broke new ground chronicling the disabling effects of depression on several chronic disorders through influential studies at the end of the 20th and early in the 21st.**

The first Kessler study established the fact of co-morbidity between 'mental and physical' conditions and the second documented the impact on work performance of depression co-morbid with bone and joint disease, respiratory disorders, chronic stomach ailments and other conditions.

The Kessler study also found that when co-occurring with asthma, arthritis and hypertension, depression was the decisive reason why there was any measure of work days lost attributable to these chronic conditions.

This study was among the first to evaluate the effects of depression on work performance, leading to a multi-national study by Dr. Kessler years later through which he found that all the chronic conditions studied – depression, ulcers, asthma, hypertension among them – were under-treated.

Dr. Kessler was one of the first scientists to link the under-treatment of depression and its disabling effect on other conditions to 'the loss of human capital' in the world economy. He stressed the importance of nations to collect data on the impact of depression compared to other chronic illnesses.

**II) Clinical research in Canada found depression increasing the risk of sudden, fatal heart attacks by 500%.**

Drs. Francois Lespérance and Nancy Frasure-Smith, then at the Montreal Heart Institute, conducted clinical studies revealing that co-occurring depression increased the risks of heart attack and sudden death. Dr. Robert Swenson in Ottawa expanded on those findings and tutored the Roundtable extensively.

Dr. Paul Dorian, a cardiologist at St. Michael's Hospital in Toronto was among the first in his field to facilitate psychiatric care to treat depression among his heart patients (psychiatric cardiology) while Dr. Susan Abbey, Toronto General Hospital, led research into depression and heart disease among women.

Each of these all-star pioneers took part in the Roundtable's inaugural event in 1998 that focused on depression 'at the heart of the matter.' How and why the roots of depression wind around the human heart, immune, endocrine and glucose-handling systems, and other organs, is still not well-understood.



But research has found cellular and experiential commonalities between depression and other chronic conditions. King's College researchers in London, England say "depression can no longer be described as only a (brain) disorder; it is a series of changes spanning the brain, genes and body."

In 2006, the European Union's Consultative Report concluded that "evidence of co-morbidities is persuasive" and all health services and research institutions should reach out and cooperate with the mental health scientific community.

Depression wields a nasty influence.

Depression kills – through suicide, cardiovascular disease and even conceivably, some forms of cancer. Therefore, by investigating the cause and course of depression, science is shedding light on how to prevent complications for other serious conditions.

In effect, improving the treatment of depression – and increasing the rates of remission – through patient-oriented, clinically-relevant and applied research will advance the fight against heart disease, stroke and diabetes among other major, big name, well-funded health problems.

According to the Director of the US National Institute of Mental Health, mental illnesses including depression are believed to reduce life expectancy by 25 years. This is not a scare tactic. It is a wake-up call. Lest depression research command adequate funding and political appeal, efforts to contain chronic illnesses are doomed.

For generations, health authorities split health research into two distinct silos: infectious and non-infectious disease. A global shift from the communicable or infectious disease to non-communicable disorders as the premiere public health issue is underway.

The World Health Organization expects depression to be the 'leader of the pack' as this historic transition accelerates. Serious depression and ischemic heart disease are projected to become the leading cause of lost years of work in the global economy through disability and early death by 2020.

Dr. Don Milliken, then President of the Canadian Psychiatric Association, launched a Roundtable of Stakeholders in 2006 by declaring that *"untreated depression will significantly shorten the life span of patients with diabetes or cardiac disease."*

He said *"when these patients die the reported cause of death is the cardiac or endocrine abnormality. The effect of depression is missed."* Canada's Chief Medical Officer of Health, Dr. David Butler-Jones, says chronic disorders are the most important health issue facing the world today.

## 02: THE GREAT DEPRESSION MATRIX

UK scientists say depression can influence the onset and transmission of infectious disease, presumably due to its oppressive blanketing of the immune system.

The 'co-morbidity crisis' noted earlier is a network of conditions allied within what we will unveil here as The Great Depression MATRIX.

The Great Depression MATRIX figures prominently in this report's proposals outlined in Part Three. What needs to be known is the impact of the MATRIX on public health and the economy – and is ignored at our peril. Depression is also known to co-occur with other conditions not represented here.

# The Great Depression Matrix

THE GREAT DEPRESSION MATRIX IS AN ORIGINAL CONCEPT AND DESIGN PRODUCED SPECIFICALLY FOR THE FINAL REPORT OF THE GLOBAL BUSINESS AND ECONOMIC ROUNDTABLE ON ADDICTION AND MENTAL HEALTH.

## 03: THE RISE OF CHRONICITY

The Depression MATRIX embodies the complexity of an epidemic of chronic illnesses while public health leaders prepare to respond effectively.

In a New York Times column August 21, 2011, Yanzhong Huang of the Council on Foreign Relations in the US writes:

"With globalization, urbanization, and economic growth, non-communicable diseases are the major cause of death and disability, even in the developing world. About 85% of deaths in China, 81% in Russia, 75% in Brazil, and 53% in India are caused by chronic diseases."

He describes a 'global explosion of diseases like diabetes' and while the UN General Assembly met on the subject this year, 'there is little evidence of a paradigm shift in disease prevention and control' and one US official said his country will hold fast to international goals focused on infectious disease.

Wrong-headedly so.



## 04: THE DEATH VALLEYS OF RESEARCH

Meanwhile, Canada's principal research funding agency, the Canadian Institutes for Health Research (CIHR), has called for a 'pan-Canadian patient-oriented research effort' to improve clinical research lest the country lack the necessary tools to meet the challenge of mental illness and the rise of chronicity.

In a 2011 report, CIHR says that investments in biomedical discoveries have produced only 'limited uptake of these results into clinical practice.' Critical data for the development of preventative, diagnostic and treatment interventions are routinely lost in two 'Death Valleys:'

One 'Death Valley' is Canada's failure to transfer basic research into clinical knowledge at a sufficient clip, and volume, and the second 'Death Valley' is a similar 'failure to transfer' clinical science and knowledge into clinical practice and health care decisions on the front lines.

Canada has 'significant deficits' in the leadership and coordination of clinical research directly related to patient needs and is 'rapidly falling behind other industrial countries,' according to the CIHR.

In the next few years, CIHR says Canada will be unable to generate the scientific evidence needed to meet the needs of its people in mental health care, primary health care and chronic disease management – a deficiency that stalks the country sight unseen by the public, politicians and health professionals.

Should Canada slip significantly behind other industrial countries in our capacity to deliver science into health care that directly benefit people, we will be witness to – and victims of – a breakdown in public policies governing the health sciences. A most unwelcome shift.

## Hyper-Connected World

Meanwhile, the world more broadly is going through a series of historic changes that are relevant to the mental health of working populations. Social and economic change continues to produce major non-medical determinants of mental health. Stress pollution foremost among them.

The Great Depression MATRIX – in its entirety – is susceptible to the trigger-like effects of chronic stress and social environments in the workplace that can affect healthy brain function. An era of psycho-social stress is upon us. Why so? The world we have created for ourselves.

Today's hyper-connected world produces chronic stress like fossil fuels degrade the air we breathe. Dealing effectively with chronic conditions on a large societal scale means coming to grips with the culture of chronic stress that tends to define contemporary work environments.

The Internet has created a global economy where the interests of investing and trading countries are inter-dependent. Within this configuration, we see the advent of what the Roundtable has called the brain-based economy.

In this brain-based economy, **cognition is the ignition** of productive work, mental energy is key to innovation and innovation is hailed by governments and economists as the key to future prosperity.

The European Union's 2006 Consultative Report says this:

*"The mental health of the European population is a resource for the attainment of some of the EU's strategic policy objectives such as putting Europe back on the path to long-term prosperity ... and bringing practical benefits to the quality of life of (our) citizens.'*

The EU treaty enshrines the concept of a 'high level of human health protection' and Europe, along with the United States and Canada have launched transformative mental health initiatives. But where is the transformation? Where is real change? When will we see concrete reforms and a cause for real hope.

Like all the major contemporary issues – energy, security, trade, economic development – mental health in the workforces and workplaces of nations merit an international response.

Recapping the reasons for this:

- The research needed to realize needed breakthroughs in our knowledge of genetic, epigenetic and brain-based features of mental illness will be carried out in many countries. The key is to build international networks to ensure this new knowledge is pooled and used globally.
- Sources for global funding for this research must, over the next ten years, include global corporations to defend their investment in the productive capacity of their people.
- Progress in finding a pathway to depression specifically will require international cooperation among scientific organizations and public and private sector employers.
- The World Health Organization expects depression 'to lead the pack' of chronic disorders that pose the greatest risk to historic gains in life expectancy, child mortality and occupational health and safety. These are matters of universal concern in free market economies.
- The economic costs of mental disorders flow freely across regions of the world and the borders of sovereign states. The means to manage, and reverse these costs must be developed, shared and leveraged internationally.

Let us examine the cost picture in greater detail as it has unfolded across the world's two greatest trading blocs – the European Community and North America.

> "Every significant challenge we face – economic, demographic, security, energy and health – has international dimensions. I would absolutely include mental health in this."
>
> *Honorable Michael Wilson, Canada's Ambassador to the United States, February, 2007.*

## 05: SURGING COSTS OF MENTAL DISORDERS

A special analysis of the North American Free Trade Area and the European Community was commissioned for this Report based on the assumption that the economic costs of mental disorders are representatively distributed as four per cent of the Gross Domestic Product of these regions.

This analysis found a tsunami of economic loss hitting these free market economies, a ONE TRILLION DOLLAR A YEAR PROBLEM. Displayed in Figure (1): NAFTA and EEC.

**The Trillion Dollar Mental Health Challenge**

| (MILLIONS) | GDP (US$)* | 4% OF GDP |
|---|---|---|
| **NAFTA** | | |
| Canada | $ 1,281,064 | $ 51,243 |
| United States | $ 14,256,275 | $ 570,251 |
| Mexico | $ 1,465,726 | $ 58,629 |
| **Total** | **$ 17,003,065** | **$ 680,123** |
| **EUROPEAN ECONOMIC COMMUNITY** | | |
| Belgium | $ 389,518 | $ 15,581 |
| Denmark | $ 204,060 | $ 8,162 |
| France | $ 2,108,228 | $ 84,329 |
| Germany | $ 2,806,266 | $ 112,251 |
| Greece | $ 341,688 | $ 13,668 |
| Ireland | $ 188,112 | $ 7,524 |
| Italy | $ 1,740,123 | $ 69,605 |
| Luxembourg | $ 40,025 | $ 1,601 |
| Netherlands | $ 658,228 | $ 26,329 |
| Portugal | $ 235,904 | $ 9,436 |
| Spain | $ 1,360,605 | $ 54,424 |
| United Kingdom | $ 2,139,400 | $ 85,576 |
| **Total** | **$ 12,212,157** | **$ 488,486** |
| **Total Combined:** | **$ 29,215,222** | **$ 1,168,609** |

* GDP BASED ON IMF 2009 DATA

These numbers compare to independent estimates of $51 Billion a year in Canada, and as of 2003, $300 Billion a year in the US. And while significant, these dollar numbers are not the whole picture. A wide range of 'hidden costs' contribute to a total burden not yet established.

We discuss this later. Meanwhile, prevalence rates are another indicator of cost. A word on that.

## Higher Prevalence Rates

Up to now, the annual prevalence rates of depression have been estimated in the range of 5 to 10 % of the population. But these estimates of annual depression rates appear to be low. The largest workplace public opinion survey ever done presents a different picture.

Commissioned by the Roundtable and sponsored by Great-West Life, Ipsos Reid polled 6,000 Canadian and US employees and found 'a country within a continent' of depression in the workplace. Some 30% of those surveyed knew someone who was diagnosed with depression, 18% were themselves diagnosed.

A 2005 report by the European Economic Commission suggests that current estimates of the prevalence of mental disorders is low, contending that nearly 30% of adult Europeans experience at least one form of mental ill health during any given year.

The disability incidence of depression is stubbornly high. The landmark Kessler Co-Morbidity Study found that 17–21% of the working population with depression went on short-term disability in a given year. The table below compares prevalence of depression in the workforce and general population.

Recent US data published by the US Centre for Disease Control estimates that 25% of US adults will experience a mental illness in a given year and one half of the population will do so over a lifetime.

The Ipsos Reid and European data suggest that the annual and lifetime prevalence assumptions should be re-examined. It is more likely that the annual prevalence rate of depression in the workforce is between 18% and 25% and the general population about half that. Figure (2) demonstrates this.

**Figure (2)**
**The Prevalence of Depression as only one form of Mental Illness**

| | CANADA | US |
|---|---|---|
| **POPULATION** | | |
| Working Population* | 16.9M | 141.3M |
| Total Population ** | 34.0M | 307.0M |
| % of Total Population | 49.7% | 46.0% |
| **PREVALENCE OF DEPRESSION** | | |
| Working Population | 18% – 25% | 18% – 25% |
| Total Population | 9.0% – 12.5% | 8.3% – 11.5% |
| **MEDIAN AGE ***** | | |
| Working Population | 40.5 yrs | 41.2 yrs |
| Total Population | 40.1 yrs | 36.7 yrs |

SOURCES: * HRDC/US CENSUS ** WORLD BANK; ***STATSCAN/US LABOR DEPT

### Perspective: How Common are Mental Disorders?

Schizophrenia is one of the rarest (and most serious) forms of mental illness yet it is diagnosed twice as often as Alzheimer's disease, five times more than multiple sclerosis, six times more than insulin-dependent diabetes, 60 times more than muscular dystrophy.

(www.schizophrenia.com/szfacts.htm – adapted from J.A. Lieberman)

## 06: SUICIDE: SPECIAL BURDEN OF THE YOUNG

Dollars and cents are one measure of the cost of mental disorders. The loss of human lives is another. Depression is present in 7–9 out of 10 suicides. In addition, the face of suicide is disturbingly young.

Suicide is an especially deep ravine in human experience and is now the leading source of violent death in the world today. The authors commissioned an analysis of the suicide death toll across NAFTA and EEC through most recent data available.

According to this analysis, 74,000 persons in EEC and NAFTA took their lives in the year 2000 and 76,000 in 2005. If we project across the ensuing decade ending in 2010, it is conceivable nearly three quarters of a million people took their own lives in North America and Europe in that period. A deadly decade.

Figure (3) depicts this international tragedy.

**Figure (3): 1990–2005 Suicide Rates by Country**

| | 1990 | 1995 | | | 2000 | | | 2005 | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Total Suicides | Total Suicides | % Change Population | % Change Suicide | Total Suicides | % Change Population | % Change Suicide | Total Suicides | % Change Population | % Change Suicide |
| **NAFTA** | | | | | | | | | | |
| Canada | 3,529 | 3,933 | 5.6% | 11.4% | 3,600 | 4.8% | -8.5% | 3,651 | 5.0% | 1.4% |
| United States | 30,953 | 31,687 | 6.7% | 2.4% | 27,693 | 0.0% | -12.6% | 32,533 | 11.1% | 17.5% |
| Mexico | 1,831 | 2,825 | 9.5% | 54.3% | 3,429 | 7.5% | 21.4% | 4,227 | 5.2% | 23.3% |
| **Total** | **36,314** | **38,446** | **7.2%** | **5.9%** | **34,722** | **2.1%** | **-9.7%** | **40,411** | **9.1%** | **16.4%** |
| **EUROPEAN ECONOMIC COMMUNITY** | | | | | | | | | | |
| Belgium | 1,894 | 2,159 | 1.7% | 14.0% | 1,866 | 1.1% | -13.6% | N/A | N/A | N/A |
| Denmark | 1,228 | 925 | 1.7% | -24.7% | 726 | 2.1% | -21.6% | 628 | 1.5% | -13.4% |
| France | 11,347 | 11,916 | 2.0% | 5.0% | 10,837 | 1.8% | -9.1% | 10,714 | 3.4% | -1.1% |
| Germany | 14,139 | 12,899 | 2.8% | -8.8% | 11,098 | 0.7% | -14.0% | 10,226 | 0.3% | -7.9% |
| Greece | 366 | 372 | 4.7% | 1.7% | 382 | 2.7% | 2.7% | 400 | 1.7% | 4.6% |
| Ireland | 333 | 404 | 2.9% | 21.4% | 464 | 5.4% | 14.9% | 403 | 9.3% | -13.1% |
| Italy | 4,311 | 4,548 | 0.2% | 5.5% | 4,043 | 0.2% | -11.1% | 3,692 | 2.9% | -8.7% |
| Luxembourg | 68 | 63 | 7.0% | -7.4% | 63 | 6.8% | -0.2% | 82 | 6.6% | 31.0% |
| Netherlands | 1,450 | 1,515 | 3.4% | 4.5% | 1,497 | 3.0% | -1.2% | 1,567 | 2.5% | 4.7% |
| Portugal | 871 | 822 | 1.3% | -5.6% | 522 | 2.0% | -36.6% | 1,213 | 3.2% | 132.6% |
| Spain | 2,913 | 3,190 | 1.4% | 9.5% | 3,382 | 2.2% | 6.0% | 3,385 | 7.8% | 0.1% |
| United Kingdom | 4,637 | 4,293 | 1.3% | -7.4% | 4,417 | 1.5% | 2.9% | 4,035 | 2.3% | -8.6% |
| **Total** | **43,557** | **43,108** | **1.8%** | **-1.0%** | **39,297** | **1.4%** | **-8.8%** | **36,346** | **-0.1%** | **-7.5%** |
| **Total Combined** | **79,870** | **81,554** | **4.6%** | **2.1%** | **74,019** | **1.8%** | **-9.2%** | **76,757** | **4.8%** | **3.7%** |

NOTES: SOURCE SUICIDE RATES: WHO, 2009 SOURCE: POPULATION, WORLD BANK, 2009 NOT INCLUDING BELGIUM

## Burden of Suicide

Tana Nash, Coordinator of the Suicide Prevention Council of Waterloo Region, west of Toronto, in Canada's largest province, Ontario, reports that in their region alone there is on average one suicide a week.

Across Canada, there is an average of 10 suicides a day, nearly 4,000 a year. But the burden of suicide is reflected not only in the number of deaths, but in the injuries and suffering of suicide attempts: 17,500 Canadians were admitted to hospital in 2010 for self-inflicted injuries.

The Canadian Medical Association Journal reports that 45 Canadians enter hospital daily for treatment of self-inflicted injuries, and when combined with 10 deaths from suicide each day, the suicide burden for Canada is 20,075 lives lost or hurt each year.

The highest concentration of admissions to hospital was among young women 15–19 years of age with men 50% fewer but more than 3 times more likely to die from suicide than women. The CMA report says 70% of those who attempt suicide suffer a mental disorder (probably depression) but 30% do not.

Several countries, communities and institutions have embarked upon suicide prevention strategies. In England, (not the whole UK), suicides dipped significantly. This is in line with a goal set in 2002 to reduce suicide deaths by at least 20% by 2010.

## 'Let the Kids Live'

Worldwide, suicide is one of the three leading causes of death among young people 15–24 years of age. In the US, an estimated 5,000 teenagers take their lives each year, about 14% of the total. In Canada, suicide is the second leading cause of death of children.

In the US and Sweden, suicide rates declined since the 1980s except in this younger age group and in Ireland, 40% of all deaths among young men 30 years of age and under are due to suicide.

In Europe, 22.2 per 100,000 young boys take their own lives compared to 4.8 per 100,000 young girls. In 2006, co-author of this Report, Michael Wilson, then Canada's Ambassador to the US, spoke to the Pan American Health Organization in Washington:

*"In North America, suicides outnumber homicides. Suicide has global reach. Perhaps as much or more than global warming or the threat of terrorism on human life, suicide poses a fundamental risk to the rights of citizenship and opportunity."*

*"It is important that we see suicide not as an expression of the weak but as a choice of the desperate – desperation often prodded and deepened by major depression. We must embrace prevention. Advocacy is important to that.*

*"Prevention is possible if we invest in research to track down and determine the pathway to major depression. Let us see in suicide … not a lost cause … but a just cause."*

### Suicide Postscript

By the 'Brain and Behavior Research Foundation (formerly NARSAD, the National Alliance for Research in Schizophrenia and Depression):

"Abundant evidence suggests changes in one of the brain's neurotransmission systems may occur among people who attempt suicide. Researchers are looking at one version of one gene in particular ('serotonin transporter protein') which appears to increase this risk.

"In fact, researchers are already looking at treatment options for those who carry this vulnerable gene, using brain imaging technology to trace neural circuitry associated with suicidal ideation. Notably, studies are now assessing the impact of suicide on family survivors including children."

*(cont'd)* "Parental suicides heighten the risk that a child will follow suit – not all do. But what are the factors that make this life and death difference, what are the treatment options, conceivably by adopting cognitive behavioural therapy or anti-depressant use to treat those at risk for suicide?"

PART THREE – GREY PAPER

# NEW WORKPLACE OF THE 21ST CENTURY

## TOWARD A PRODUCTIVITY REVOLUTION THROUGH MENTAL HEALTH & INNOVATION

## 01: THE END OF DEPRESSION

"Mental health is the only area of medicine today in which we are not talking about cures or working on preventative vaccines. This needs to change."

*Dr. Tom Insel, Director of the US National Institute of Mental Health*

### Plausible Goal

Turning, then, to the decade ahead, we see the need for a vigorous global campaign of workplace-based research, education, and primary (reducing risk) and secondary (improving care) prevention. We must galvanize business and scientific leaders to take real action in real time to fund and find a cure for depression. This will define the decade ahead.

We propose, in outline, the components of such a campaign blending new research, cataloguing and transferring existing science into clinical and preventative action and forging a new leadership paradigm among global employers and international science.

The Roundtable opened a 'new front' (the workplace) in an old war (against mental illness). Surely, the time has come to say when and how that war will be won. There is urgency to this. If the Roundtable had a material impact or benefit, the effect will be lost without a breakthrough visible to all.

### Tracking the Tractable

We propose a series of workplace-based initiatives in three countries – US, UK and Canada. The idea of advancing these objectives through business and science is applauded by Harvard Provost Dr. Steven Hyman.

In a message to the Roundtable Dr. Hyman says *"building cooperation between leaders in business and science, between Canada and the United States, has great significance to the advancement of research, improved care and greater productive capacity in the labour force."*

Finding a cure for depression is a common-sense candidate for this initiative, as Canadian neuroscientist Dr. Tony Phillips says, because it is tractable, prevalent and economically significant.

The prestigious research journal LANCET says estimates of the costs of mental disorders neglect their impact on so-called 'physical' health issues including both communicable and non-communicable disease as well as accidental and non-accidental injuries.

Science has proven the physicality of mental illness. The American Psychiatric Association: *"There is much that is physical about mental disorders and much that is mental about physical disorders."* Historically, health has been described as 'physical.'

But a paradigm shift is underway. The 'mental' and the 'physical' must merge into a single construct of human health wherein the brain and the body are indivisible. Period, full stop.

### The Addictions Factor

The end of depression is a new chapter for the advancement of mental health in the workplace – to neutralize depression as a principal source of disability and premature death. And in setting forth this objective, we wish to emphasize this.

Addictions are part of the Great Depression MATRIX, part of the Roundtable name and mission, and when we discuss 'depression,' it is suitable to note that we are inherently referring, at all times, to the implications of self-medication and the two-way street between addiction and depression.

The Centre for Addiction and Mental Health (CAMH) is Canada's largest mental health and addiction teaching hospital and was formed and named through the merger of pre-eminent mental health and addiction treatment and research facilities.

In arguably, depression and substance abuse must be treated concurrently when they occur concurrently, and that presumption applies to this report, recognizing that the 'silo effect' separating the clinical specialties in addiction and mental illness continues to confound.

The opportunity, though, is to create an integrated depression/addiction model of the nature embodied by CAMH through depression research channelled via the MATRIX into several areas where concurrent disorders must be diagnosed and treated on an integrated, concurrent basis.

Notably, it is the workplace where the early signs of both substance abuse and depression most evidently occur and co-occur. It is also through employee assistance plans where early intervention in these matters is available. Workplace screenings for 'Depression Plus' makes sense.

All in all, when we speak of depression, implicitly, we refer to the Addictions Factor.

## Thousands of Lives, Billions of Dollars

*A campaign to end depression:*

- Will herald the beginning of the end of the world's fear and stigmatized aversion to holistic public dialogue and personal acceptance of mental disorders as part of the human experience.
- Has real promise as brain and genetic research converge with certain environmental factors as the dynamics that are most likely behind mental disorders such as depression. The timing is good.

A cure for depression is bound to save thousands of lives and billions of dollars. Suicide is a case-in-point. A vigorous suicide prevention effort for Canada could save 31,000 lives in the decade ending 2022 by reducing the annual suicide rate by slightly more than two-thirds by that time.

But our goal must go beyond that to prevent suicide attempts, which may outnumber the number of suicides that are actually completed by 10 to 20 times. Preventing 31,000 suicides over ten years would also mean preventing in the order of 300,000–600,000 injuries from suicide attempts.

Meanwhile, Canadian scientist and lawyer Dr. Martin Shain estimates that between $2.97 billion and $11 billion per annum could be saved in Canada by 'discretionary modifications' to the organization and management of work to make it less injurious to employee mental health.

The wide range of this estimate reflects the reality of the Canadian workplace. Variations in the prevalence of avoidable 'psycho-toxic' (mentally injurious) workplaces in Canada range from 10% to 25% of the total.

## Costs of Youth:

Depression, anxiety, bipolar disorder and schizophrenia take hold early in life, and young people are often blocked by inadequate access to timely treatment. A significant portion of the 'hidden costs' of mental disorders are embedded in the experience of young people.

For example, we find that in 2009, US researchers calculated an estimated $2.3B in tax revenue lost as a result of lost work time among young adults living with depression. In 2005, Statistics Canada found that Canadians 18 years of age, or older, lost 10% of their annual income (on a base of $40K) to depression.

## 02: GLOBAL CORPORATE LEADERSHIP

Twenty nine of the world's largest 'economic entities' are global corporations. This implies, very strongly, that a workplace-based, international initiative to find a cure for depression and to save lives from heart attack and other conditions by treating depression more effectively, logically, is led by corporations.

*For this, and other purposes we propose that leaders of business and science:*

- Create an **International Public/Private Partnership of Employers and Science** to build 'Networks of NEW Workplaces' to serve as sites and subjects for 10 years of research, education and prevention to rid workplaces and workforces of the costs and effects of major depression.
- Designate 2012–2022 as the **'The Decade of the Brain in the Workplace'** during which the Partnership demonstrates that curing depression:
- Saves lives from heart attack, stroke, suicide and other causes;
- Significantly mitigates economic loss;
- Restores lost productive capacity;
- Fosters innovation in the contemporary workplace.

**'No Health Without Mental Health'**
*World Health Organization*

The mantra – 'there can be no health without mental health' – was articulated by the World Health Organization and we propose that it serve as the Partnership's 'call to arms.'

## Re-Thinking Depression

As a first order of business, the Partnership will re-activate **'The Roundtable's US/Canada Forum on Mental Health and Productivity'** and include representatives of science and business from the United Kingdom. This Forum will 're-think' depression as the basis for finding the best way to end it.

The Forum will develop principles for building and sustaining the Partnership, for strategic action, scientific inquiry and knowledge transfer. The Forum will examine 'state of the art' brain, genetic and clinical science shedding light on the causes and effects of depression.

This dialogue will be critical. A debate among scientists has emerged challenging established conventions about what depression is and is not. The authors of this Report came upon this debate through a series of exclusive interviews with top neuroscientists and clinicians.

Highlights of those interviews are summarized here but their impact is felt throughout this report.

**Should Depression Be Classified as more than a Mental Disorder?**

Dr. Carmine Pariante of King's College in London, England, says depression can result in such drastic hormonal changes that it becomes an 'endocrine illness or immune disorder' where cortisol, our stress hormone, is flowing for much longer than biology intended.

Dr. Pariante and his colleagues remind us that *"depression can no longer be described as a simple disorder of the brain, but rather must be understood to be a series of biological changes that span mind, brains, genes and body – affecting both psychology and physical health."*

LANCET, the prestigious scientific journal, reports that depression alters the course of infectious disease, and is associated with an 'excess number' of deaths of all causes. Depression kills – through suicide and fatal heart attacks. Depression robs people of 20–25 years of life.

Dr. Roger McIntyre of the University Health Network in Toronto, says depression is a killer as it shortens life expectancy of those who live with this condition, but the actual cause of death is more likely to be cardiovascular disease than suicide.

Depression flows into our metabolism, cardiovascular system, pancreas, bones, joints and muscles, blood and immune system through the excessive production of hormones. It is prudent not to tackle depression as an isolated condition as it is part of a greater complex.

Since 1999, the Roundtable has pushed for the 're-positioning' of depression as a 'physical disorder' with physical and psychological symptoms to distance the concept of depression from the stigma of 'mental illness' but, more to the point, to represent it more accurately.

**This perspective of depression as a physical, brain-based disorder which penetrates almost the entire physical body changes, fundamentally, the assumptions that science and society must make about the nature of the condition and what the search for a cure really must entail.**

For example, if curing depression is said to mean lifting one's mood, relieving sleeplessness or renewing one's capacity to concentrate on work then that is clearly an incomplete description of what finding a cure for depression really means to society and to working populations and their employers in particular.

Dr. McIntyre says depression should be re-classified medically from a mood disorder to a metabolic disorder and that research into the co-morbidity of depression is needed to uncover new and novel approaches to treating depression. For example, Dr. McIntyre is testing insulin as a treatment for depression.

Dr. Helen Mayberg spoke to us from Emory University in Atlanta, Georgia: *"Depression is a disorder of brain circuits. Thinking in this manner could one day lead us to treatments targeting the abnormal brain wiring and the failure of communication between regions communicating thru those connections."*

She says, *"Scientists have learned that different groups of depressed patients display different brain scan patterns."* This might lead us to understand why some respond to talk therapy, others drug therapy, and others, both.

Dr. Georg Northoff is a neuroscientist and brain imaging expert at the Royal Ottawa Health Care Group, and he sees depression as a 'social injury' – a confluence of biology and social experience. Depression is like a fever signalling that something is wrong.

In his special analysis for this Report, Dr. Gary Woodill acquaints us with higher levels of scientific knowledge of brain and genetic issues that are linked to the development and onset of depression.

Depression is a problem of brain circuitry with biological and genetic dimensions and there is consensus that it is 'not a single entity with a single cause' but most likely a 'combination of genetic, biochemical, psychological, environmental and life experiences.'

## Rational Problem

Dr. Rémi Quirion is the newly-appointed Chief Scientist for the Province of Quebec in Canada, a world authority on Alzheimer's disease and a leading advocate for closer scientific ties between brain science and psychiatry – and science and business.

*"Mental illness has natural causes and must be treated rationally,"* Dr. Quirion says. *"The brain is the main instrument of mental life. We need more information on key genes and interaction with the environment, and we must replace the 'trial and error' approach of current treatments."*

Dr. Quirion calls current treatment methods *"a result of happy accidents and the focus must be shifted to the scientific causes of depression."* Unchecked, symptoms will progress to dangerous levels, patients will become more treatment resilient, and general health will fail.

*"Biomarkers will be needed for this,"* Dr. Quirion said. *"And biomarkers may come from brain imaging, or blood, skin and saliva tests."*

Doing a brain briefing for business leaders as part of the Roundtable's series of CEO Summits, Dr. Rémi Quirion said *"we realize more and more that the brain, all through life, is very plastic and will change depending on the environment. The link between genes and the social environment is very, very important."*

Dr. Phillips, current Scientific Director of the CIHR Institute of Neurosciences, Mental Health and Addition (INMHA), subscribes to a *"bold international initiative that brings business and science together as equal partners to defend the greatest economic asset the world has, the human brain. Mental illness diminishes that asset,"* he said in an interview for this Report.

Dr. Phillips believes efforts to 'solve depression' are well-placed because 'depression is tractable' and business has a real stake in the issue. Depression is concentrated among men and women in their working years and reaches into many facets of our economic lives.

Ending the grip that depression has on productive capacity, lives and quality of life for millions of working people, would represent a major global public health breakthrough with enormous social and economic upsides.

Depression must be approached rationally. This means building a coherent 'fact base' at the proposed US/UK/Canada Forum to build a perspective on what constitutes depression, and a depression cure, that is shared by leaders of business and science.

From this, a scientific agenda, funding strategy, and partner recruitment plan for purposes of research and educational pilot projects must be fleshed out to 'rationalize' this international quest to prevent the disabling and deadly capacity of depression.

## Cure Scenario

Finding a cure for depression is one route to pre-empting the Harvard Global Burden of Disease forecast that ischemic heart disease and serious depression will become the leading causes of work years lost by 2020 through disability and premature death.

Finding a cure for depression will stimulate the prevention of suicide on a large scale. It is estimated that as high as 90% of all those who take their own lives suffer depression at the time. Serving this purpose means saving the lives of kids.

The 'cure scenario' represents an effective antidote to stigma. Studies have shown that the stigmatization of mental illness resists advertising campaigns or awareness-raising. The war on stigma more likely will be won through a critical mass of prevention and treatment success.

So, what does a 'cure' for depression entail? A cure for depression means reducing the 'excess number of deaths' that co-morbid depression is associated with; it means protecting the life expectancy of people who live with mental illness.

The cure scenario will halt the evolution of depression as a premiere source of premature death and disability in the working populations; it will increase knowledge of brain function and improve scientific understanding of the links between 'environment and genetic expression' in the onset of depression.

This knowledge will inform workplace policies and practices which can then become tools for the prevention of depression, and, at later stages, to prevent relapse. The international scientific community is moving toward a seminal moment: the integration of knowledge to build a pathway to depression.

Dr. Insel: *"Genetics, neuroscience and psychiatry are coming together in mental health research. Research tools now exist at molecular, cell, system, individual, and society levels, and we must use them to find pre-emptive and personalized interventions to stop mental illness in its early stages.*

*"Early intervention is critical for a 'developmental disorder' of this magnitude. Research makes a difference. If we look to the success of cardiovascular research we see a 63% reduction in cardiovascular mortality rates and trillions of dollars saved."*

Can the cardiovascular model be used to guide the effort contemplated in this report? The answer is yes but more than that, our knowledge of heart disease and stroke can itself be expanded and treatment outcomes improved even more by investing in workplace-based depression research.

We turn now to the NEW Workplace – a venue that will one day demonstrate breakthrough research, education and prevention.

## 03: THE ROAD TO REMISSION RUNS THROUGH THE WORKPLACE

The road to the ultimate remission of the symptoms of depression travels quite naturally through the workplace where the impact of this condition is heavily concentrated. The international campaign and partnership we propose here will establish targets to save lives and prevent disabilities.

Employers have an obvious stake in reducing lost time at work. But they are also heavily vested in health services used to treat and sustain the recovery from depression – drug plans, hospital services, psychological counselling, return to work supports and health assistance available to their families.

Workplaces are well-defined research venues that 'house' those that are vulnerable to depression. Larger-scale, affordable clinical trials can be designed for work sites, individually or in collections, to achieve the necessary demographic, industrial, geographic or ethnic variations.

A perspective of the 'physicality' of depression is not only valid, it is useful in helping the wider public comprehend that this condition is not an innate sign of human weakness but part of the human experience.

As implied by this scientific dialogue, depression is a dynamic process affecting the body, brain and mind, in which 'mind' may be conceived as a 'process' that emerges from brain function. The plasticity of the brain is known but not yet understood by science as to how or why it works. Current research on brain plasticity may offer unique insights into the link between brain function and depression.

The NIMH believes unified genetic and brain research is called for to map out the pathway to depression; objective criteria are needed to affirm diagnosis using biomarkers such as blood and saliva; and brain imaging capacity will customize and localize treatments in the brain.

As a general proposition, discoveries in brain sciences should stimulate support for depression research and specifically, discovery of brain plasticity clears the way for workplace-based research into the causes, effects and management of chronic job stress as a depression MATRIX risk factor.

During the heralded 'Decade of the Brain' of the 1990s, science learned that the human brain can change itself – and that external environments can affect internal brain function. Learning 'why' and 'how' this dynamic works has been described by Dr. Rémi Quirion as the 'Holy Grail' of brain research.

Through the proposed **International Public/Private Partnership of Employers and Science**, researchers will cut through the psycho-social underbrush of the contemporary workplace and look for signs of the GRAIL within. A word on that.

## Holy Grail of Brain Research



The Roundtable was one of the first national business groups to publicly discuss 'psycho-social health risks' in the workplace in the form of chronic job stress. Each of the conditions spanning the Depression MATRIX can be triggered, complicated and worsened by the effects of chronic job stress.

But, how and why does job stress affect employees differently? What do psychologically-healthy work environments look and feel like, and how can they be created and sustained? These are questions that can be asked and answered in the NEW Workplace.

Chronic job stress is a form of social climate change that melts the resilience and well-being of employees. There is consensus that prolonged exposure to slow-building, long-lasting job stress predicts burn-out and depression.

Humans are built to handle 'momentary spikes of stress,' as one writer put it, but when chronic stress grows into hours, days and sometimes months, internal mechanisms of the brain and body break down – from heart and brain function to sleep rhythms and the immune system.

Job and home stress are synergistic. Chronic stress triggers symptoms of depression, anxiety, and other mental illnesses among those who are vulnerable – and there are different levels of vulnerability.

The biological explanation for depression's impact on the human body is the activation of excessive hormones among vulnerable people for whom 'the acute stress response' seems permanently turned on.

A significant stress-related question to be resolved is: what type of environmental factors 'trigger' or 'restrict' genetic predisposition in the development of depression, and why? This is the next great post-genome challenge and meeting it will help lead to sustainable psychologically-healthy workplaces.

Brain cells (neurons) respond to the external world via sensory organs devoted to different brain functions. Salk Institute and Princeton University researchers tell us, "Brain damage in depression might be the result of both cells dying and not being born – but the condition may be reversible."

*"It would be a breakthrough if we understood how external events interact with the internal functioning of the brain,"* according to the Chairman of Psychiatry at Johns Hopkins University, Dr. Raymond DePaulo.

## Symphony of Genes

Dr. Anne Bassett is head of Clinical Genetics at the prestigious Centre for Addiction and Mental Health in Toronto. She zeroes-in on the kind of stress that appears most hurtful as a factor of risk in emotional distress or mental disorders.

She speaks of the importance of relationships at home, work and in the community in sustaining or recovering health. In the workplace, 'tone of voice is huge' especially for employees already in distress or suffering undiagnosed depression. The person who is ill may be more sensitive. A calm and supportive environment will help recovery, as for any illness.

Dr. Bassett: *"We are all born with genetic risks or vulnerabilities and fully one half of all our genes relates to our brain and nervous system. Genes are the most important part of causation of serious mental disorders."*
The implication of this statement: a root cause of mental illness comes from wholly natural sources – our genetic make-up.

Notably, genetic changes may be inherited or spontaneous changes that are not inherited (a familiar example would be the extra chromosome in Down syndrome). Each of us may have one or more small change that could affect how we develop and/or how our brain cells work.

Neuroscientist Dr. Rémi Quirion, in an interview for this report, concludes that the combination of 'genetic predisposition' and social environment ('gene-environment') including stress, trauma, lifestyle and nutrition likely determine one's risk to depression, anxiety and other conditions.

The same is true, however, for chronic conditions which constitute the 'Great Depression MATRIX.' In the development and onset of mental disorders, the communication between brain cells is more important than the loss of brain cells. Scientific consensus: depression is a 'brain circuit' (or systems) disorder.

Understanding genetics as 'the most important part of causation of serious mental disorders' will lead us, eventually, to a new understanding of how and why these conditions develop, and then to how treatment can be improved, Dr. Bassett says.

She points to a particular chromosome with a portion that can be naturally deleted. This specific genetic change – invisible to the naked eye but now testable with advanced clinical lab methods – renders one in four people with this change vulnerable to schizophrenia.

*"The genome is like a symphony orchestra. In this case, one instrument is missing and the sound of music changes. Naturally occurring genetic changes are how evolution – including evolution of the human brain – continues,"* explains Dr. Bassett.

## Job Stress and Social Pressure

Research to nail down why and how 'chronic job stress' happens among some employees and not others will serve as a stand-in for other 'external' influences on internal brain function. This could lead to a 'prevention pathway' to reduce psycho-social risk in the workplace.

Stress is not a state, it is a process; a set of variables; it is how we react to circumstances at work or in life; it is an individual experience. There is a relationship between stress, the nervous system and brain regulation of the cardiovascular system.

This demonstrates the physical basis of stress-related problems, including depressive disorders, and other conditions spread across the Depression MATRIX. Human beings have a protective mechanism which alerts us to withdraw when the anxiety form of stress faces us. Uncertainty is one source.

## Screening for Stress

While genes may offer unique insights in the fight against mental illness, they do not act alone. Indeed all major systems in the body, including endocrine, immunological and neural systems may contribute to and/or be affected by the occurrence of mental ill health. Dr. Quirion, a world figure in neuroscience, reminds us that the bloodstream and saliva contain markers for stress.

In time, through these markers, we may know who is at risk for changes in the regulation and expression of brain cells, and thus, vulnerable to depression. Dr. Phillips calls for the development and eventual use of biomarkers that will provide a precise diagnostic accuracy comparable to blood glucose analysis in diabetes.

Dr. Phillips calls for this as part of a 'Gold Standard' for depression diagnosis and treatment. He also believes the consequences of stress will routinely be assayed as a means to reduce the onset of depression. Hopefully the time is near when depression screenings will happen in every doctor's office, as well as every cardiovascular, diabetes and cancer clinic.

Driving depression and other chronic health conditions into remission faster is the principal goal of the screening process.

## Stress Traps

In the contemporary workplace, there are a number of 'stress traps' that snare employees: job demands that chronically exceed available resources is one example of a stress trap. Employee perception of workplace practices that are routinely unfair or illogical is a second.

A third example is denoted by the 'struggle to juggle' obligations of home and work that never let up. Job and home stress are synergistic.

Workplace stress that intensifies near the close of the workday, and is taken home, poses a greater risk to the cardiac health of people than smoking. (IWH, Toronto).

When job stress becomes chronic, it can override our natural defences to ward off infection and viruses, escalate the production of inflammatory hormones that drive heart disease, obesity and diabetes, spark flare-ups of rheumatoid arthritis, trigger depression, increase risks of substance abuse and cause accidents on the job.

Employees especially vulnerable to the health risks of chronic stress include working women who are pregnant; employees returning to work from heart attack, stroke, depression or anxiety; and employees with chronic conditions such as asthma, depression or diabetes.

## STRESS AND PERFORMANCE MATCH-UP

In the workplace, it is important to align goals and expectations to create realistic possibilities. This links healthy stress and conditions of performance.

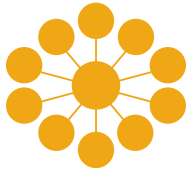
*2006 BUSINESS AND ECONOMIC PLAN FOR MENTAL HEALTH AND PRODUCTIVITY GLOBAL BUSINESS AND ECONOMIC ROUNDTABLE ON ADDICTION AND MENTAL HEALTH



## 04: UNRAVELLING THE GREAT DEPRESSION MATRIX

The search for a cure for depression is best channelled through the dynamics of its co-morbidity with chronic illnesses, and through workplaces where working populations are vulnerable to a wide panoply of environmental risk – which is a key feature of neuro-genetic inquiry.

*See full MATRIX diagram (page 37)and how depression is related to other chronic illnesses..*



Several disciplines will be needed for this international campaign of research, education and prevention and this assembly might best be described as an expression of *'neuro-economic research'* which relates brain function to economic decision-making and organizational behaviour.

The research we have in mind will define the experience of depression not only in terms of the individual who is suffering the condition but, more broadly, the attitude and response of co-workers and managers to the circumstances in which that individual is placed.

In an interview for this report, Dr. Robert Post of George Washington University in Washington, DC, underlines the point for us. *"New data shows that environmental events can change DNA structure in relation to mental disorders."* Dr. Quirion traces mental disorders to genetics and experience.

The questions that will be probed range from *'why depression increases the risk of heart attack?'* to *'what kind of workplace culture is needed to ensure the right intervention at the right time?'* and *'what kind of culture can be sustained where managers/co-workers are pro-actively supportive?'*.

The scientific disciplines needed for this work include neuroscience, genetic science, management and social sciences, clinical psychology, psychiatry and other medical specialties relating to the chronic conditions represented on the Great Depression MATRIX.

Therefore, we visualize the proposed **International Public/Private Partnership of Employers and Science** pursuing its goal through research that is focused on the complexities of the Depression MATRIX. For example, why does depression increase the risk of fatal heart attacks and how do we prevent that?

The links between depression and chronic illness have a basis in biology, genetics, life experience and social environments. The Depression MATRIX constitutes a strategic framework for an historic breakthrough in treating depression to save lives from heart attack, cancer, diabetes and obesity.

## Practical Clinical Trials

We visualize workplaces being used as venues for what Dr. Insel describes as 'practical clinical trials' and one objective of the campaign will be to help clinicians find alternative methods to diagnose those brain disorders that we call mental illnesses.

Dr. Tom Insel: *"The diagnostic system in place is based on observation, detection is late and prediction is poor. Prevention is not well-developed for most mental disorders (depression included) and treatment – the real manifestation of under-developed diagnostic process – is trial and error."*

*"There is no cure and no vaccines for mental disorders and neither prevalence nor death rates have decreased,"* Dr. Insel told the Montreal scientific Forum but he also laid out the NIMH strategy in response.

The National Institute of Mental Health seeks 'gains in neuroscience and genetics that are key to understanding the complexities of mental disorders' and funds brain discoveries that fuel research into the causes of mental disorders. These NIMH objectives are a guiding light for this Report.

The NIMH believes greater emphasis must be placed on measuring the 'functional outcomes' of clinical research which is all-important to employers and employees alike.

NIMH will build 'a new framework for diagnosis of mental disorders based on cognitive science, neuroscience and genomics,' biomarkers for early detection and individual treatment and making ultimately the best use of current treatments to achieve results important to public health overall.

A scientific agenda leading to a cure for depression must involve both medical and non-medical branches of interest including questions of the health and safety of the work environment itself.

The Canadian Institutes for Health Research – specifically the Institute for Neuroscience, Mental Health and Addiction under Dr. Phillips' leadership – has supported research teams to study various questions of co-morbidity relevant to the search for a cure for depression through the Great MATRIX.

Among other things, CIHR is looking for the links among depression and anxiety – along with epilepsy and many other neurological conditions – to update treatment guidelines and to facilitate assessment of dual diagnosis of co-morbid disorders. Dr. Insel suggests heart disease may be a 'gateway' to depression. The reverse may also be true.

Dr. Phillips supports an 'all-out push' to find an answer to depression. He notes that *"depression affects far more people than many cancers and that a significant increase in scale and scope of attention and support is needed."*

## Preventing Heart Disease by Treating Depression

The value of investigating the links between depression and heart disease is to produce evidence for novel approaches to treatment, and achieving ultimate remission of symptoms for depression and those conditions with which it co-occurs. Therefore, the purpose of finding a cure for depression is to:

- Save lives from heart disease and stroke by treating more effectively.
- Save lives and family suffering by treating depression more effectively.
- Reduce the health risks of diabetes by treating depression more effectively.
- Reduce the risks of substance abuse by treating depression more effectively.
- Reduce the dangers of cardiovascular disease for those living with diabetes by treating depression more effectively.
- Prevent worsening of the prognosis of some cancer by treating depression more effectively.
- Counter the course of obesity by treating depression more effectively.
- Lessen the grip of chronic pain on tens of millions of people by treating depression more effectively.
- Protect world gains in life expectancy by treating depression more effectively.
- Protect coming generations of kids against the onset of depression and anxiety in their adolescence and early teens by treating depression more effectively.

So let's understand more particularly why this International Partnership, as proposed, will target depression through its affiliation with major chronic illnesses.

## The Great Depression MATRIX in review.

### Cardiovascular Disease

Depression increases the risk of sudden death from a 2nd heart attack among heart patients by 500% within six months of the first. It worsens outcomes of both coronary and ischemic heart disease, increase risks of clotting, impairs oxygen flow to the heart, reduce heart rate variability, increases risks of ventricular arrhythmia.

Heart attack survivors with depression are less likely than non-depressed heart patients to survive one year. Research has shown that the incidence of depression may increase 15–30% in the first month after a heart attack and about 20% of first-time heart attack victims have depression.

Depressed people have two to four times more cardiovascular disease and on August 11, 2011, it was reported that depression is an independent risk factor for stroke among women.

Dr. J. Raymond DePaulo, Chairman of Psychiatry at Johns Hopkins University, says *"some patients with depression and no history of heart disease develop a heart attack. And depression doubles and quadruples the risk of sudden death."*

Nonetheless, Dr. DePaulo feels *"we are poised on the brink of some remarkable discoveries about depressive illness. Genetic and advanced brain imaging technologies allow us to understand brain structure and function in ways we could only dream about in the 80s."*

Breakthroughs, though, won't be easy and *"it will take the same commitment to research that has been made in the past for cancer and heart disease."* Dr. DePaulo says *"our objective must be to speed-up the time it takes make an accurate diagnosis."*

*"And,"* he says, *"it would be a major breakthrough if we understood how external events (environment, social experience) interact with the functioning of the brain."*

### Diabetes

US population studies found that depression is associated with complications of diabetes affecting eyesight (retinopathy) and is **'significantly associated with death'** within the type II diabetes population.

Depression and diabetes are both linked to insulin-related inflammatory and glucose-handling problems.

Depression is more than twice as prevalent among those living with diabetes. Schizophrenia, bipolar disorder, and adult Attention Deficit Hyperactivity Disorder (ADHD) can be co-morbid with obesity, metabolic syndromes, and Diabetes Type 2, as reported by Dr. Robert Post.

Dr. McIntyre found that serotonin, the brain chemical linked to depression, provides 'effective insulin signalling' that improves insulin sensitivity and acts as an anti-inflammatory. Diabetic patients show 'improved mood with insulin.'

Alzheimer's, depression and diabetes, Dr. McIntyre says, are 'inter-related' and an insulin nose spray is being tested as a treatment for depression. *"We need to re-think depression as a neural-degenerative condition, what drives it, and what are the connections to abnormalities in insulin?"*

### Cancer

The New England Journal of Medicine reports that diabetes raises the risk of dying from cancer by 25% and the Canadian Diabetes Association says 80% of those living with diabetes die from cardiovascular disease. This also applies to those living with both diabetes and depression.

Research at the University of British Columbia and published by the Canadian Cancer Society finds that **depression can affect cancer survival** and systemic screening for psychological distress and subsequent treatments among cancer patients is a valid option to manage these cross-over effects.

Many studies have shown that mental attitudes can affect the course of bodily disease. University of British Columbia researchers found no fewer than 26 studies involving 5,417 patients that examined the effects of depression on cancer.

They reported that *'we found an increased risk of death in patients who report more depressive symptoms than those who have neither exhibited symptoms nor have been formally diagnosed.'* The analysis revealed:

Death rates among cancer patients were **25% higher** among patients who say they have symptoms of depression symptoms and **39% higher** among those who are were actually diagnosed with depression.

Other studies estimate that 10–30% of cancer patients suffer depression and according to a 2005 study in the Journal of Supportive Oncology *"cancer-related depression is associated with faster tumour progression and shortened survival time."*

Ten years ago, King's College researchers in the UK found that depression among cancer patients has a biological and biochemical basis, and depression may be a side-effect of cancer-treating chemical therapies.

### MS and Parkinson's

King's College researchers believe that fluctuations in the immune systems of MS sufferers have 'something in common' with the fluctuating mood of someone living with bipolar disorder. Dr. Helen Mayberg says the treatment of Parkinson's Disease may inform the treatment of depression.

The largest worldwide study ever to compare the health decrements of depression and other chronic conditions (250,000 people in 60 countries across all regions of the world) found that between 9% and 23% of those living with some form of chronic illness also suffer depression.

### Pain

In 2003, the American Medical Association reported that **65% of patients with depression have clinically-significant pain while 37–58% of patients with pain live with depression.** Depression patients have 'significantly more unexplained' physical symptoms including pain and fatigue.

Family doctors fail to diagnose depression in 50% of these cases and studies found that depression predicts future episodes of low back pain and other forms of muscle and bone discomfort. Depression and pain are believed to follow the same central nervous system pathway.

### Diet/Digestion

King's College researchers: "There is now considerable evidence relating **fatty acid** and prostaglandin blood and tissue level **to rising rates of depression through the modern era.**" Diet, blood content, depression and anxiety are linked.

Findings published by Gastroenterology Magazine, say that disrupting the 'delicate balance' of bacteria in the digestive system can influence brain chemistry and behaviour. Experts suggest that the digestive system may influence emotions (butterflies in the stomach).

Scientists are learning that the brain and gut have a relationship. Intuition has told us that for a long time. Science is catching up. The digestive system houses 1,000 trillion bacteria and 100 million nerve cells and some leading scientists call it 'the second brain.'

### Infectious Disease

LANCET, the world's leading health science journal:

*"In reality, the interactions between mental disorders and other health conditions are widespread and complex … constituting risk factors for the development of communicable and non-communicable diseases, and contributing to accidental and non-accidental injuries.*

*"For some infectious diseases, mental disorders increase the risk of transmission; many health conditions increase the risk for mental disorder or lengthen episodes. The ensuing co-morbidity complicates help-seeking behaviour, quality of care and outcome of treatment of 'physical' conditions."*

In the landmark 'multi-country Depression and Work Performance Study' by Dr. Ron Kessler and funded by the McArthur Foundation, we learn that in the case of asthma (and similar breathing disorders such as COPD) absence from work soars from less than one day per month to 2.6 days per month when depression is present.

'Pure (single-occurring) disorders are less impairing,' the study says, and 'physicians should recognize that the vast majority of impairment among young and middle-aged patients due to common-occurring chronic disorders is actually associated with co-occurring mental disorders.'

## The MATRIX Multiplier of Death and Disability

In a special analysis for this report, we see clearly the enormous numbers of people – and families – touched by the Great Depression MATRIX:

### Cardiovascular Disease

Assuming 20% of Heart patients develop Depression:

| | CANADA | US | UK | TOTAL |
|---|---|---|---|---|
| Annual Prevalence of Heart Patients | 1,300,000 | 26,800,000 | 2,700,000 | 30,800,000 |
| Assumption: Annual Prevalence of Heart Patients with Depression | 260,000 | 5,360,000 | 540,000 | 6,160,000 |
| SOURCES: | HEART & STROKE FOUNDATION 2007 | CENTERS FOR DISEASE CONTROL & PREVENTION 2009 | BRITISH HEART FOUNDATION 2009 | |

### Cancer

Several sites provide data on the prevalence of cancer (all types) however it is to be noted that the definition of 'prevalence' is generally interpreted as 'currently diagnosed' and 'recovered' (i.e. still living), and calculates the figure using data of the prior 10 years. Single year data did not appear to be available.

Assuming 10–30% of Cancer patients suffer Depression:

| | CANADA | US | UK | TOTAL |
|---|---|---|---|---|
| Prevalence of Cancer Patients | 748,897 | 11,714,000 | 2,700,000 | 12,970,737 |
| Assumption: Annual Prevalence of Cancer Patients with Depression | 74,890 – 224,669 | 1,171,400 – 3,514,200 | 50,784 – 152,352 | 1,297,074 – 3,891,221 |
| SOURCES: | CANADIAN CANCER SOCIETY, CANCER STATISTICS 2007, PUB 2011 | AMERICAN CANCER SOCIETY, 2007 | CANCER RESEARCH UK, 2006 | |

### Diabetes

Statistics vary on the ratio of deaths by the combination of heart disease and diabetes. The World Health Organization (August 2011) states that 50% of 'diabetics' die from cardiovascular disease annually, while other estimates are as high as 80%.

| | CANADA | US | UK | TOTAL |
|---|---|---|---|---|
| Annual Prevalence of Diabetic Patients | 1,300,000 | 18,800,000 | 2,800,000 | 22,900,000 |
| Assumption: Annual No. of Diabetic Patients who die of Cardiovascular Disease | 650,000 – 1,040,000 | 9,400,000 – 15,040,000 | 1,400,000 – 2,240,000 | 11,450,000 – 18,320,000 |
| SOURCES: | STATISTICS CANADA 2005 | NATIONAL DIABETES CLEARING HOUSE 2011 | DIABETES UK 2010 | |

### Workplace Data

While many articles have been written about the effect and impact of these diseases in the workplace, no reliable statistical data was found on actual number of patients who are currently in the workplace and are diagnosed or living with the above diseases.

However, *c3 Collaborating for Health* (UK) in February, 2010 reports that diabetes is becoming an issue for employers in the UK, particularly given that the workforce is aging (an issue common to Canada and the US as well), and the prevalence of Diabetes rises sharply in middle age.

In England, for example, Diabetes prevalence is 1.2% among 25–34 year olds, but by age 55–64 prevalence is 8.5% among men and 6.0% among women. (C3 also stated that some companies are leading by example, providing health screening, healthy cafeteria options, showers and bike storage for those who want to cycle to work – additional costs to the employer.)

Question: How much more prevalent is the combination of one of these diseases and depression in the workforce by age category (e.g. 25–34, 35–54, 55–64), and what is the direct cost effect or increase that this combination has on each of those age groups? An inquiry for another time.

### Drug Therapy Patterns

An analysis of **employee group drug plans in Canada by Cubic Health of Toronto** was donated to this Report and it shows that virtually all employees being treated for depression are also taking medication for migraine headaches. Based on this analysis, we see that:

Depression is also highly concentrated among those being treated concurrently for stomach acid, high cholesterol, arthritis, diabetes and high blood pressure. The conventional notion that mental illness is 'all in your head' is thus provably untrue.

### Depression: A Life and Death Matter

Depression kills – through suicide, through cardiovascular disease, and through other diseases. In this light, depression research, for the first time, will be positioned as a 'life and death' matter and this changes forever the argument for parity, at least, in funding research into the disease burdens of the world.

And, as a 'life and death matter,' depression research is more attractive to funders and clearly a matter of importance to the cohesion and opportunities of citizenship that free societies value. Finding a cure for depression is also an act of recognition of the interests of children, and working families.

Therefore, we propose that the International Partnership fund be called **'Defeat Depression this Decade'** – the **'3D Fund'** – and its funds be calculated as an appropriate percentage of the GDP of the 3 countries which will launch the initiative.

**Note:**

More research is needed to verify the implications of data discussed in this section of the Report. And while the risk of cancer deaths associated with depression is relatively small, physicians are encouraged to screen cancer patients for depression and provide necessary treatment.

## 05: THE **NEW** NEUROECONOMIC WORKPLACE

"We must now believe in the human mind and spirit and capacity for innovation more than ever."

*Charles Schwab, Investment Legend – 2001*

The **NEW** or **N**euro**E**conomic **W**orkplace is the workplace of the future. This NEW Workplace – as a venue for research, prevention and education – must be designed, managed and sustained to promote and protect the mental health of working populations as a straightforward duty of asset management.

There is ample evidence that brain health and brain skills will define the competitive edge that corporations doing business in the global economy will need. Dr. Michael Porter has reported that new technology and pricing no longer provide the differentiation that companies need to compete.

Therefore, the NEW Workplace will be based on the tenets of a socially and psychologically healthy environment in which people not only earn their pay-cheque but earn and exchange respect as a defining feature of this environment. That said, where should this new energy be focused?

Let us turn to that question.

**Brain Health + Brain Skills = Brain Capital = Access to Innovation**

Innovative thinking begins with a clear sense of purpose among employees and managers who make time for creativity and who are 'always in the hunt' for new ideas, according to management experts Andy Boynton (Boston College) and Bill Fischer (Int'l Institute for Management in Switzerland).

Gordon Nixon, President and CEO of the Royal Bank of Canada, as quoted in Part 1, describes *"an economy of mental performance where employees are expected to think and be creative."* This is the stuff of innovation.

Innovation, in turn, is the stuff of brain health + brain skills which equal a new commodity we call brain capital in the workplace. This is the key to the door that provides access to innovation which has been heralded widely by economists, governments and business as the key to future prosperity.

Therefore, brain-based mental health in the workplace by definition is part of the quest to promote a sense of purpose and on-going ingenuity as Boynton/Fisher and William Bole, co-authors of 'The Idea Hunter' identify as key to promoting innovative thinking, and realizing the benefits.

These authors make another important point to the subject of this report: inclusion is part of the equation of innovation and new ideas.

*"Other people,"* they say in the Toronto Globe and Mail (October 12, 2011), *"must be part of the plan to get new ideas … take an interest in the work of others."*

The principle of inclusion, cooperation sharing and mutual encouragement are seen through this lens as features of fostering innovation and creative thinking. Not surprisingly, these are also an indigenous part of a psychologically-healthy workplace.

## Brain Healthy Innovation

We envision the principal focus of the workplace-based, international campaign of research, education and prevention proposed here to focus sharply on 'innovation in psychologically healthy workplaces' as a principal deliverable.

But let's be clear about what innovation is and is not – about what mental health in this context is and is not:

**Innovation:** to renew, to create, to improve and to make more effective products and services, not to be confused with invention or renovation. Innovation suggests substantial positive change to a business practice, product or service not merely an incremental adjustment or improvement.

**Mental health in the workplace:** a holistic sense of wellbeing, perspective, judgment, freedom to collaborate and think outside the box, job fulfilment, clear expectations, inclusion and a clear sense of purpose.

These are cognitive functions, sources of and demand for mental energy, stimulated by and needing a sense of place and teamwork, dependent on management practices that permit, facilitate, empower and reward employees who operate effectively in a healthy, innovative environment.

Innovation, we submit, must be distinguished from that concept of productivity defined exclusively by cost-cutting, job-cutting, doing more with less and other conventional economic precepts. True innovation is that which is practiced by enlightened employers.

Therefore, we suggest this: the next stage of development for mental health in the workplace be focused on innovation as a deliverable of psychologically-healthy workplaces and employee mental health as the facilitator of employee-based competitive advantage.

## Investments in Sustainability

In the NEW Workplace, the statement 'brain health + brain skills = brain capital' proves true – and investments in mental health constitute investments in brain health and brain skills.

Just as **eco investments** protect the sustainability of our natural environment and, in some cases, the viability of business, **neuro investments** do the same for work environments.

In the NEW Workplace, managers will learn to motivate the cognitive capacities of employees and a sharp distinction between what constitutes a healthy and unhealthy work environment will be clear to all.

Fairness, respect, job clarity, clear purpose, recognition, getting things done versus micro-managing, embedded frustration, distrust, tension, unclear expectations, and leadership ambiguities. In the NEW Workplace, managers are well-trained in dealing with employee emotional distress and the functional impact of that.

In the NEW Workplace, empathy is learnable. Managers talk with employees about how they feel about things, knowing that employee morale is a leading indicator of financial performance. In the NEW Workplace, the treadmill effect gives way to common sense deadlines.

Job/skill mismatches are avoided; face to face discussions successfully compete with emails and text messages. Managers will learn what goes into a psychologically-healthy workplace – and how the brain and body connect.

In the NEW Workplace, managers will learn what kinds of policies and practices, training and incentives will motivate employee innovation. In doing so, employers who buy-into the concept of brain-based mental health in the workplace begin to fuel a revolution in productivity.

This revolution in productivity, as described by Canadian economist David Rosenberg, will be fuelled (in part, we say) by growth in the supply-side of the economy (Canada is his example) – specifically, through capital spending.

## Brain Capital Investment

We would add a new dimension to the concept of supply-side economics to include investment in and of brain capital to parallel capital investments in technology and equipment. The reason is this:

Historically, according to Statistics Canada, the infusion of new information technology over the past two decades has failed to improve Canada's productivity because it happened without new investments in employee training, work distribution and the processes and philosophies of innovation.

Narrow-casting capital investments in physical, inanimate assets will replicate that experience and repeat history. Therefore, we visualize the NEW Workplace being equipped with technology AND people – both of which are construed and protected as a form of capital investment to be protected.

This will truly sow the seeds of the kind of revolution in productivity that will sustain:

- The human factor as the key differentiator in the market place and thus a source of competitive advantage to find and retain new customers.
- Psychologically-healthy work climates as the key differentiator in the workplace and thus a source of competitive advantage to recruit and retain the best people.
- Both objectives were cited by participants in the Roundtable's unprecedented 2005 CEO Survey on Mental Health as validation of investments in the mental health of employees.

The benefits of a psychologically-healthy workplace span a wide operational spectrum: retention and recruitment success, employee engagement as an indicator of sustainable financial performance, productive capacity and high standards of occupational health and safety.

## Neuro Strategies for the Workplace

Studies track the 'morale boosting' affects that eco investments have on employees. New entrants into the workforce show a preference for employers who do business this way. Green strategies are a savvy response to a changing world.

Similarly, GREY strategies, ('grey' as in neuronal brain matter), benefit the employer, the employee, and also the community. The result will be psychologically-healthy work environments where mental health thrives, brain skills flourish, and brain capital will grow.

This idea of neuro investment blends with the new concept of 'shared value' introduced by management legend Dr. Michael Porter who believes that investments that equally benefit the community and the business are 'a way to save capitalism.'

Dr. Porter tells us of companies who reduce their use of natural water supplies in India and therefore reduce costs and sustain productivity demonstrate 'shared value.' The community benefits and the business benefits.

**Neuro investments** by employers to build psychologically-healthy and safe workplaces will become a parallel concept aimed squarely at defending the capacity of workplaces to be innovative, to promote and effectively deploy the brain skills of their people.

We see this approach encouraging **'creative capitalism'** as Bill Gates characterized innovations in business that will sustain communities and people. We see new concepts to express this in terms discussed in this Report:

**Neuro-Trade:** a new form of free trade – free in the sense of 'open borders' and 'no/low cost' in the exchange of information, prototypes, models and experiences among employers to advance internationally the promotion of brain health, brain skills and the assembly of brain capital for a brain-based economy.

**Neuro-Cultures:** workplace environments that are friendly to brain health, brain skills and brain capital – the essence of psychologically-healthy workplaces.

**Neuro-Leadership:** a generation of new hard managerial skills to motivate, incent and facilitate the productive use of employee cognitive capacity, the promotion and rewarding of employee creativity and the long-term development of workplace and customer relationship skills.

**Neuro-Asset Management:** workplace policies and practices to promote and protect the asset value of employee mental health in a brain-based economy.

Harvard's Michael Porter: *"companies have 'exhausted the market advantage of costs and technology' and their people are now the main source of comparative advantage."*

The Senior Vice-President, Group Benefits of Great-West Life, Michael Schwartz, who serves as Executive Director of the Great-West Life Centre for Mental Health in the Workplace, developed a model for promoting healthy management practices.

**The CEO** of the NEW Workplace will recognize the link between a healthy culture and a healthy future and take an investment portfolio approach to employee health expenditures, measuring objectives, benefits and return on investment.

**The CEO** will bring mental disabilities down from 30%–40% of their total disability experience to 10%, reduce long-term disability for mental health purposes to virtually zero, and engage the CFO and top human resources executive as co-leaders of mental health in the workplace.

**The CEO** will set hard, achievable financial targets to reduce and prevent mental disability and make it crystal clear that employees on disability leave are assets with continuing value. Line managers will be accountable for mental health in the workplace and full recognition of employee rights.

**The CEO** will deem chronic job stress a 'work hazard' like air pollution and unsafe equipment, where senior management understands that **employee attitudes** are leading indicators of financial performance – to be nourished - while 'financials' are a lagging indicator – to be accounted for.

## Building psychologically-healthy workplaces begins with these questions:

01 What is senior management's perception and understanding of psychological risk?

02 Is the CEO or equivalent engaged in defining and mitigating this risk?

03 Are there ways to quantify psychological risk for disability insurance purposes?

04 What level of risk is acceptable to insurers to write and price disability insurance?

## Employee Renewal in the NEW Workplace

The NEW Workplace will introduce a workplace model of **'Shared Care'** to support family physicians in diagnosing and treating depression and the effects of the Depression MATRIX on employee health and productivity.

The NEW Workplace will introduce the concept of 'strategic case management' and 'employee renewal' for those suffering from a mental illness.

Employee renewal in the face of emotional distress, depression or off-the-job disability leave proceeds through three phases:

- **Renewal** of the employee's clinical health through the reduction of symptoms.
- **Renewal** of the employee's functional health – which lags symptom reduction and must be managed carefully when determining the pace of return to full-time work.
- **Renewal** of the employee's 'emotional readiness' to go back to work. This includes the renewal of self-esteem, emotional strength and mental energy.

Three principles will anchor these concepts:

- **The Principle of Affirmation:** the value of employees to the organization will be affirmed throughout the period of illness or injury.
- **The Principle of Accommodation:** returning to full-time work will be facilitated by managerial commitment and accountability to the integrity and effectiveness of the process. There will be provisions for off and on-the-job employee renewal through modified work.
- **The Principle of Shared Responsibility:** management and unions will remove the 'Renewal' process from the roster of disputable collective bargaining issues and jointly provide the employee with needed support and cooperation to facilitate renewal to full function.

A primary tool of the recovery and renewal phases is the Roundtable's Recovery & Renewal Tracking Chart which puts the emphasis on prognosis while simultaneously tracking medical and non-medical concerns.

This original Roundtable concept was known formally as the Green Chart. It underscores the importance of social and environmental issues in the workplace. Utilization of this chart as a focal point in the return to work plan by the employee, the manager, the employee's medical doctor, and the organization's occupational health specialists encourages an emphasis on functional prognosis rather than illness symptoms.

The Recovery & Renewal Tracking Chart can be downloaded from: mentalhealthroundtable.ca

## Physician's – Recovery & Renewal Tracking Chart

In the space provided explain and/or list specific accommodations that can be made by the employer to ease the Return to Work process

| | 01<br>At this time, the task is impossible for the employee to perform | 02<br>The employee can perform some aspects of this task with accommodations | 03<br>The employee can perform this task with accommodations | 04<br>The employee performs this task well although some accommodations are still necessary | 05<br>The employee can easily perform this task with little or no special assistance |
|---|---|---|---|---|---|
| **General Work Skills** | | | | | |
| Understanding and following instructions | | | | | |
| Performing simple and repetitive tasks | | | | | |
| Maintaining a work pace appropriate to the work load | | | | | |
| Relating to other people beyond giving and receiving instructions | | | | | |
| Influencing others, accepting instructions, planning | | | | | |
| **Specific Job Functions or Requirements (not covered above, as outlined by the case manager)** | | | | | |
| | | | | | |
| | | | | | |
| **Information Required by the Physician** | | | | | |
| Character of the workplace – pace, dynamics and history | | | | | |
| Patterns of absence or downtime in the last 30 days | | | | | |

Mental Health Roundtable. Reviewed by Sr. Sol Sax and Dr. Bruce Rowat, 2006.

## Case Manager – Recovery & Renewal Tracking Chart

| Employee: | | Case Manager: | Date: | Next Case Meeting: |
|---|---|---|---|---|
| | 01 Physician's Rating 1 to 5 | 02 Physician Recommendations | 03 Plan of Action | 04 Desired Outcome |
| **General Work Skills** | | | | |
| Understanding and following instructions | | | | |
| Performing simple and repetitive tasks | | | | |
| Maintaining a work pace appropriate to the work load | | | | |
| Relating to other people beyond giving and receiving instructions | | | | |
| Influencing others, accepting instructions, planning | | | | |
| **Specific Job Functions or Requirements (not covered above, as outlined by the case manager)** | | | | |
| | | | | |
| | | | | |

| Additional Tasks for Case Manager | Date | Comments |
|---|---|---|
| Re-entry interview scheduled | | |
| Employee invited to bring friend, family member or physician to re-entry interview | | |
| Employee assured his/her job is waiting for him/her | | |
| Employee formally welcomed back by employer | | |
| Re-entry plan established and reviewed; a realistic timeline implemented | | |

Mental Health Roundtable. Reviewed by Sr. Sol Sax and Dr. Bruce Rowat, 2006.

## Not Just Four Walls

Mental health in the workplace of police is gaining ground. The Canadian Association of Chiefs of Police, Canadian Association of Police Boards, and Canadian Police Association have held joint-meetings on the topic and are considering a 10-point plan presented to them in 2011 by the co-authors of this report.

These guidelines called C.O.P.S. – acronym for care, outreach, prevention and support – range from publically committing to mental health in the workplace of police to policing management reforms and training staff sergeants to become a powerful voice for mental health in the workplace.

(Full text of C.O.P.S. is available at mentalhealthroundtable.ca.)

## The Value of Peer Support

At a time when society is arguably more fragmented than ever before, and technology and social media have overtaken face-to-face communication, the power of human interaction has never been greater. Nowhere can it have more impact than in the lives of people experiencing mental illness.

LCol Stéphane Grenier was the pioneering force who brought mental health peer support to the Canadian Forces. He is now working through the Mental Health Commission of Canada to bring peer support into the civilian workplace.

In LCol Grenier's words: *"Peer support work occurs when a person who has lived with and recovered from a mental health problem or illness, provides emotional and social support to a person who is currently suffering."*

*"Due to the authenticity of shared experience, peer support results in significant improvement to rates of recovery and improved health,"* he says. A key goal is to avoid employee isolation at home.

## Workplace Stress Resiliency

Dr. Alan Langlieb, Director of Workplace Psychiatry at Johns Hopkins University in Baltimore, Maryland, has helped develop an evidence-based approach to 'immunity from distress in the workplace' through a model of employee 'resilience, resistance and recovery' in the management of workplace stress.

*"At its core,"* Dr. Langlieb said in an interview for this Report, *"this model is a management tool to build resistance or enhance employee resilience in the face of workplace stress, or to accelerate employee recovery from distress or stress-related downtime."*

The model, developed by Dr. Langlieb and other experts at Johns Hopkins University, provides employees with what he calls 'psychological body armour.' Resilience training and development, in this light, becomes part of the inventory for psychologically-healthy workplaces.

## 06: NEW WORKPLACE: VENUE FOR SUICIDE PREVENTION

The NEW Workplace will be a home for information, education and support for employees dealing with questions of suicide. The 'Guidelines for Working Parents to Protect the Mental Health of their Children' can be consulted at mentalhealthroundtable.ca

The authors invited one of the most effective suicide prevention advocates in Canada to speak out. The message of Tana Nash, Coordinator of the Suicide Prevention Council of Waterloo Region, Ontario, follows next:

## NOT TALKING ABOUT IT ISN'T WORKING

**The Need for Suicide Prevention Strategies**

In Ontario's Waterloo region, there is on average one suicide a week. Across Canada, there are 10 a day and nearly 4,000 a year. But still, we are reluctant to talk about it. That, clearly, isn't working.

Suicide prevention initiatives in Waterloo region reach 6,500 adults and young people through school-based and community training – and it saves lives.

Family members who lose a loved one to suicide face a higher risk. Thunder Bay firefighter Scott Chisholm, who lost his father to suicide, authored 'Collateral Damage: Images of Those Left Behind by Suicide'. This resource challenges stigma and promotes healing for those that need it the most.

Turning the tide on suicide is possible. But leaders must lead.

We call on (Canada's) Prime Minister Harper to:

- Invest in Canadians with a 10-year **National Suicide Prevention Campaign.** The goal: cut the annual death toll in half within the decade.
- Create a **Research and Education Centre** dedicated to this purpose in the spirit of David Batters, former Member of Parliament, Regina, Saskatchewan.
- Recognize **World Suicide Prevention Day** as a national day of mourning for lives lost to suicide, and a national day of celebration of lives saved through education, dialogue and informed intervention.
- Establish a **'Peace Corps' Youth Service Movement** to fight stigma and support family, friends, classmates, teammates and others in distress.

We also call on Canada's business community to take a leadership role by offering prevention and intervention training in the workplace. Equipping employees with a 'suicide prevention coaching certification' is an influential place to begin.

Tana Nash's INNOVATIVE efforts in her home community are remarkable evidence of what can be done when one is committed and creative. For example, she has taken suicide prevention into local high schools to:

- Train students to support each other in the face of bullying, suicide and gang violence.
- Heighten student awareness of suicide risk factors and warning sides.

Ms. Nash has delivered information packages to funeral homes to assist suicide survivors discuss and make the cause of death public if that's what the family wants to do.

Tana Nash looks beyond Canada's shores. "Global initiatives are already happening." Scotland has a "Choose Life" Program and 10-year national action plan to reduce suicides by 20% by 2013. Australia's Prime Minister earmarked $277 million for front line services.

In Mumbai, stores stock T-shirts with anti-suicide messages, and prevention programs are underway in New Zealand, UK, Finland, Sweden, Norway and the US where actor Glenn Close is active with the 'Bring Change 2 Mind' campaign.

## Recognizing the Drift Toward Suicide

The deaths of three professional hockey players – two by suicide, one through a drug overdose, a first cousin to suicide – have rocked the hockey world. The National Hockey League, its union and players' alumni say they will search for answers to the question 'why.'

Except that may be the wrong question. 'Why' is virtually unanswerable in any individual case. But 'how' is a question we can answer, and respond to, by recognizing a TEN POINT DRIFT TOWARD SUICIDE.

**01 Emotional isolation**
Malignant loss of self-esteem and usefulness

**02 Peer pressure and exclusion**
Deep sense of having lost acceptance, recognition, belonging

**03 Void of joblessness**
Deep sense of loss of identity, self-worth

**04 Emptiness of depression**
Pervasive loss of the energy and motivation to live

**05 Impulse**
Why not right now

**06 Drugs/alcohol**
Desperation peaks

**07 Available means**
Gun, rope, drugs, locale

**08 Family history of suicide**
Higher risk

**09 Youth and children**
Altered perceptions of death and dying; loss of place

**10 Social disadvantage and grievance**
The profound weariness of perpetual worry and seething.

** Various sources and reference documents used in the writing of this Report can be found at mentalhealthroundtable.ca*

These Ten Points were originally published in the Globe and Mail on September 7, 2011 in an article by Bill Wilkerson.

## Reflections

Dr. Tom Insel asks scientists to 're-think' mental disorders as brain and developmental conditions hoping to encourage brain discoveries that shed more light on the causes of mental health problems.

This Report reinforces that message by urging business leaders and employers to allow workplaces to become sites for brain research that will lead to a cure for depression, save lives and prevent disabilities among men and women in their prime working years.

The model proposed for this workplace-based research will flow from the original concepts of research and innovation founded by the Schlegel family of Kitchener, Ontario, Canada. The innovative vision of Schlegel Villages is creating healthier models of living for seniors – shifting away from the current institutional models of care.

Schlegel research priorities and design are guided by residents and front-line staff – not the researchers. This produces relevant research with real-time application thereby creating healthier models of living for seniors. This 'relevance test' is the genius core of their concept.

Meanwhile, brain research overall remains under-funded, and as it relates to mental disorders, even more so. Brain Canada gives us some perspective. Diseases and injuries of the brain and spinal cord are a greater health care cost in Canada than cancer or heart disease, representing 14% of the Canadian disease burden.



When disability and economic losses are factored in, 38% of the disease burden in Canada is attributable to brain disorders yet only $100M a year is devoted to brain research and there is no major single source of private sector funding.

There is real urgency to remedying this in light of the concerns of the Canadian Institutes of Health Research that Canada, is lagging other countries in its capacity to deliver research evidence into the clinical care of mental health problems, chronic illness and all-in primary care.

This is a crisis-in-the-making.

As the global financial crisis spreads, assumptions of social and economic sustainability are questioned.

The proposals here are, in effect, sustainability measures for human health and innovation-based growth in a struggling world economy.

## Expert Interviews

Exclusive interviews with, and input from, world-renowned scientists was an important part of the research done for this report. Our thanks to all who shared their knowledge with the Roundtable.

**Thomas R. Insel, MD**
Director, US National Institute for Mental Health (NIMH)

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**Raymond DePaulo, Jr. MD**
Psychiatrist-in-Chief, The Johns Hopkins Hospital and Chief of Psychiatry, Johns Hopkins University, Baltimore, Maryland, US

**Steven E. Hyman, MD**
former Harvard University Provost (2001 – 2011) and former Director of the National Institute of Mental Health (NIMH) (1996 – 2001)

**Ronald C. Kessler, PHD**
Professor, Health Care Policy, Harvard Medical School and Co-Director of WHO World Mental Health Surveys

**Alan M. Langlieb**
Director of Workplace Psychiatry, Johns Hopkins Hospital, Baltimore, Maryland, US

**Helen S. Mayberg, MD**
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## About The Authors

### Honourable Michael Wilson

Former Senior Chairman of the Roundtable, served as Canada's Ambassador to the United States and as Canada's Finance Minister. Mr. Wilson is currently Chairman of Barclay's Capital Canada Inc., building on his distinguished career in business, finance and government service. Mr. Wilson is a winner of several national awards for his work in the mental health field.

### Bill Wilkerson

Roundtable Co-Founder, Chairman, President and CEO, won several national awards for his Roundtable work. His business career spanned senior positions with major corporations, major league sports, health care and the arts where he served as CEO of the Toronto Symphony Orchestra during a financial crisis. Mr. Wilkerson was named mental health adviser to the Royal Canadian Mounted Police.

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