

MENTAL HEALTH INTERNATIONAL

BRAIN HEALTH IN
A BRAIN ECONOMY

**BREAKING
THROUGH**

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Sole responsibility for this Report rests with Mental Health International. Visit mentalhealthinternational.ca for full text and the “Reference Report” – an edited verbatim account of the 5th US/Canada Forum on Mental Health and Productivity.



LUNDBECK CANADA

Mental Health International expresses its gratitude to Patrick Cashman, President and General Manager, and Daniel McCarthy, Senior Director, External Relations, Lundbeck Canada Inc. for their generous sponsorship of this Report.

Based in Montreal, Lundbeck Canada Inc. has been part of the Canadian pharmaceutical industry for close to twenty years, producing important innovations for the management and treatment of psychiatric and neurological disorders.

A subsidiary of H. Lundbeck A/S, an international research-based pharmaceutical company which specializes in diseases of the central nervous system, Lundbeck Canada recently extended its knowledge of specialist medicines into the field of oncology.

Lundbeck is mandated, worldwide, by its owners – a non-profit foundation – to devote a specific percentage of revenues to research and through its Foundation and operating companies to carry out projects serving the public interest.

In the past year alone, Lundbeck Canada:

- Has entered into a 3-way partnership with the Mental Health Commission of Canada to produce 30 case studies of employers implementing Canada’s National Standard for Psychological Health and Safety in the Workplace;
- Became a national partner in Bell Canada’s Clara’s Big Ride Campaign and worked with a number of mental health organizations including Partners for Mental Health, the Mood Disorders Society of Canada and Canadian Mental Health Association.

Mental Health International salutes Lundbeck’s commitment to serving those who live with central nervous system disorders and its resolve to sustain that commitment worldwide.

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In Appreciation

Dr. Bruce Pollock, Vice-President – Research at the Centre for Addiction and Mental Health, and Rupert Duchesne, Group CEO, Aimia Corporation (parent of Aeroplan) and Chairman, Brain Canada served as the science and business co-chairs of the 5th US/Canada Forum. We are grateful to both.

Our special thanks go to Dr. Pollock and Dr. James Kennedy, Director of the Tanenbaum Centre for Pharmacogenetics at CAMH for their enormous contribution to the substantive nature and overall success of the 5th US/Canada Forum.

The Canadian Imperial Bank of Commerce (CIBC) – and former CEO John Hunkin – hosted the 5th US/Canada Forum on Mental Health and Productivity. We thank Mr. Hunkin and Mr. Gerry McCaughey, President and CEO of the Canadian Imperial Bank of Commerce and CIBC’s tremendously-effective executive conference staff.

We wish to acknowledge the valuable contribution of all the participants who attended the 5th US/Canada Forum and for their post-facto comments and interviews which helped shaped this report. The full list of the participants is included in the Reference Report which is posted on Mental Health International’s website.

US/Canada Diplomats for Mental Health

Canada’s Ambassador to the United States, Michael Wilson, and the United States Ambassador to Canada, David Wilkins, reached across the border of the world’s greatest trading partnership to convene the US/Canada Forum on Mental Health and Productivity.

Ambassador Wilson hosted the 1st Forum at the Canadian Embassy in Washington. Ambassador Wilkins, the 2nd at his official residence in Ottawa. Harvard University Provost Steven Hyman and famed Harvard epidemiologist, Dr. Ron Kessler, hosted the 3rd in Boston at the Harvard Medical School, and the TD Bank convened the 4th Forum on the 54th floor of the TD Centre in Toronto.

The US/Canada Forum has been productive. Among its deliverables, CEO Guidelines and a CFO Framework for Mental Health and Productivity. The Forum examined the unique pressures facing working parents whose children live with mental illnesses: more job loss and marital breakdown.

The Forum also explored – with US and Canadian military and law enforcement leaders – the profoundly difficult issues of depression and PTSD among their front-line personnel. This segment of the series was dedicated to “mental health in the workplace of heroes.”

The 6th US/Canada Forum on Mental Health and Productivity is scheduled for Denver on September 26, 2014. The subject is suicide prevention.

BREAKING THROUGH



03

FOREWARD

By The Honourable Michael Wilson

CHAIRMAN, BARCLAYS CANADA, VICE-CHAIRMAN, CANADIAN INSTITUTES FOR HEALTH RESEARCH, CHANCELLOR, UNIVERSITY OF TORONTO, FORMER CANADIAN AMBASSADOR TO THE UNITED STATES AND CHAIRMAN, GLOBAL BUSINESS AND ECONOMIC ROUNDTABLE ON ADDICTION AND MENTAL HEALTH

This Report is the first step toward building a business plan for an International Business + Science Partnership for Brain Health in a Brain Economy. This Partnership was first proposed in the 2011 FINAL Report of the Global Business and Economic Roundtable on Addiction and Mental Health that Bill Wilkerson and I co-authored.

This Report frames the proposition: can a business-brain science alliance strengthen the fight against brain-based mental disorders in the working population, and if so, how? The business plan for the proposed Partnership must answer this question.

This Report draws heavily on discussions at the 5th US/Canada Forum on Mental Health and Productivity in Toronto on November 20, 2013 where this matter was discussed and from other expert sources including the Collegium Internationale Neuro-Psychopharmacologicum (CINP) Summit in Munich, Germany.

The 5th Forum, it should be noted, is a continuation of many years of collaboration and dialogue around mental health in the workplace through the Global Business and Economic Roundtable on Addiction and Mental Health.

As you may know, Mental Health International is the successor to the Global Roundtable, and Bill is chairing a new European corporate initiative called “Target Depression in the Workplace.” Peter Høngaard Andersen and Tony Phillips were instrumental in bringing this project to life, and I’m pleased that my bank, Barclays, is one of several major global employers who are part of that work.

The formulation, “BRAIN HEALTH + BRAIN SKILLS = BRAIN CAPITAL” expresses the convergent interests of both business and science and serves as a framework for the Partnership concept itself. In fact, it unites the agendas of business + science when we consider that we live and work in a global economy where:

- Most new jobs demand cerebral not manual skills. This defines the brain-based economy;
- Brain-based mental disorders are emerging as one of the top two sources of work years lost in the global economy;
- Employee cognition is the ignition of productive capacity, and innovation is quite literally a ‘deliverable’ of employee mental health in the workplace.

The brain economy is based on having healthy minds in the workplace. So in my judgment, we must now move way beyond awareness-raising to concrete action to reverse prevailing mental health trends in the workplace.

Free Trade

The question is this: how best to bring business and brain science together, to promote and protect these vital assets across borders. In the Global Business and Economic Roundtable’s Final Report in 2011, we made these recommendations:

- One, that Canada, the US, Europe and other nations unite in a brain health and brain science free-trade agreement not through government in this case, except as employers in their own right, but through business and science.
- Two, that an international workplace-centered, 10-year business + science campaign be undertaken to reverse the tides of brain-based disorders among working families with specific aims to reduce economic costs.
- Three, for these purposes, we create an International Business + Science Partnership consisting of international corporations and the institutes and practitioners of brain science.

The purpose, to create a straight line of two-way information from business to science and back again, to accelerate the transfer of new knowledge into clinical innovation and to reduce workplace-based risks.

The Partnership must press for brain science to be translated more quickly into clinical innovations to meet the ‘unmet needs’ of a half billion or more people living with brain-based mental disorders worldwide.

World Tour

Brain Science is a ‘hot topic’ today. Dr. Anthony Phillips documents this through his “world tour of brain projects” in this Report. Let me also recognize a home-grown leader in this field.

Brain Canada embodies several of the features of the business + science alliance that we propose here. It is a public-private partnership with a business/science board and leadership group, and a proven model thanks to the outstanding success of its Brain Repair Program.

Brain Canada is also the steward of the newly-created Canada Brain Research Fund, a \$100-million commitment over six years by the Government of Canada to match funds raised by Brain Canada from private and non-governmental sources. Brain Canada is well on its way to achieving that goal.

As Vice-Chair of the Canadian Institutes for Health Research, I am also very proud of the public-private partnership formed by CIHR and the Graham Boeckh Foundation of Montreal creating a \$25 million network that will transform how we think about youth mental health.

An International Partnership between business and brain science reflects a reality of which I have spoken frequently. All the great issues of the day – energy, environment, security, trade – demand international solutions. I absolutely include brain health on this list.

Don Tapscott – a world authority on the digital revolution – speaks in this Report of fostering a “new era of collaboration” for brain science and mental health research and gives us a motivational insight with which to approach such a task: “Let’s not predict the future, let’s achieve it!”

Achieving the future demands vision, motivation and will. We will need all of these – and much more – to meet the challenge set out in this Report. But I’m confident we will. Because at long last, we know we must.



This Report sets the stage for a six-to-nine month process of developing a business plan for the creation of an International Business + Science Partnership for Brain Health in the Brain Economy.

Honourable Michael Wilson strongly encouraged Mental Health International – the successor to the Global Business and Economic Roundtable on Addiction and Mental Health – to take on the task, and this Report sketches out the issues and complexity involved.

Top scientists and business leaders at the 5th Forum endorsed the idea of a global business-brain science alliance. A verbatim account of that discussion can be found in the “Reference Report” online at mentalhealthinternational.ca.

The assumption to be tested is whether such an alliance can help solve problems that are inhibiting the significant advancement of prevention and treatment of brain-based mental disorders in the working population. In that regard, the 5th Forum was acquainted with clashing realities.

On the one hand, basic brain science is producing unprecedented gains in our understanding of brain function and dysfunction. On the other, unmet need persists among the half billion or more people who live with brain-based mental disorders.

Illustrating the former:

- For the first time, science is closing in on the causes of mental disorders;
- For the first time, science believes that mental disorders including dementia begin in childhood. Scientists recently learned that brain stem cells among people with psychiatric illness made subtle mistakes very early in life;
- For the first time, CAMH neuroscientists and family physicians are working together to improve the success rate of existing treatments of depression. So far, the success of these treatments is 90% compared to the 40% average previously;
- For the first time, nations across the world are launching ‘brain projects’ and free-trade styled international scientific exchanges improving dramatically the prospect of global cooperation to defeat mental illness.

Cure Scenario now Plausible

“We now have the first objective evidence ever of what mental illnesses actually represent at the molecular level,’ Dr. Daniel Weinberger says. “And yes, searching for a cure for mental illness is now plausible and realistic.”

Science has also discovered that several major disorders – depression, schizophrenia, or anxiety – share the same ‘risk factors’ via genes common to each. Genes are clues to causation, and knowing what causes mental disorders is a step toward finding out what will cure them.

This Report says: “The goal of the proposed partnership is to change the world’s experience with brain-based, mental disorders over the next 10 years. There are good reasons for believing that this goal is a practical and plausible one.

The neuroscience and genomics of mental health are close to telling us what these vexing conditions actually are – where it really counts, at a cellular level.”

Corporations help fund brain research, are ‘payers’ (one way or another) of the medical therapies used to treat mental ill health among their own people and their families, provide workplace-based support and services and, of course, absorb the impact of years of lost work due to the disabling and deadly effects of these conditions.

Corporations are also among the 28 largest economic entities in the world, have a long-term interest in the vitality and viability of the global labour force at one end of the economic spectrum, and the consuming public at the other.

This Report describes a “Quiet Revolution in Neuroscience” – quiet because “a lot is going on but who knows about it?” – and employers need to be among those more familiar with what science has achieved, can achieve and could achieve if certain barriers to progress were removed.

We see the Business + Science Partnership serving as a vehicle to bring about a ‘re-think’ of how mental illness is perceived, discussed, labelled and approached in clinical and scientific circles and in the workplace.

Big Tent

The Partnership – a big tent not a big organization – will serve as a vehicle to bring leaders of business and science together with regulators,

pharmaceutical executives and public policy-makers to examine the ‘reasons’ (and solutions) for anomalies and structural defects in the way research is now carried out.

For example:

- Recorded advancements in the neuroscience and the genomics of mental health are not reaching clinical care fast enough or at all.
- Unprecedented breakthroughs in scientific knowledge are shedding light on the causes of mental disorders but it is unclear how and when that data will help meet unmet need across the globe.
- While psychiatric medications have been among the most widely prescribed of all drugs in medicine for the past decade, the continuing high disability and mortality from mental disorders demonstrates the urgent need for better treatment.
- Some pharmaceutical companies are eliminating research in areas such as depression and schizophrenia, depleting pipelines for new compounds.

(Lundbeck, sponsor of this Report, specializes in the development of medicines for central nervous system disorders and is not vacating that field.)

The profound negative consequences of brain disorders are growing steadily and the cost of inaction will prove staggering – at least \$6 trillion a year over the next decade and a half, the bulk of those costs representing direct economic loss. (Hyman Report)

Meanwhile brain-based mental disorders are now eating into the gains in life expectancy the world has achieved over the past 50 years. The National Institute for Mental Health says mental disorders reduce life expectancy by 25 years.

When co-morbid with cardiovascular disease depression raises the risk of sudden death by 500%. This report displays the dynamic links between chronic conditions and depression in form of the Great Depression Matrix.

In this Report, we broach the question of whether ‘environments’ – specifically work environments – cause mental disorders. Case law in Canada has linked ‘mental injury’ to workplace practices.

The Plan

The idea of a business plan to create a strategic global partnership between business and brain science has not been done before. We see the business planning process involving consultations across both sectors in North America and Europe. One risk is obvious: getting lost in the complexity of the subject. Therefore, we set out a span of interest to guide our selection of priorities later. This Span of Interest begins with what we call a Quiet Revolution in Neuroscience.

PARTNERSHIP SPAN OF INTEREST

THE QUIET REVOLUTION IN NEUROSCIENCE

Is there such a thing as a Quiet Revolution? Dr. Anthony Phillips believes there is one in neuroscience. “Big things are happening. And no one knows about it.” For example:

- For the first time, science is closing in on the causes of mental illnesses thanks to major gains in neuroscience and the mapping of the human genome.
- For the first time, science believes that major brain disorders – such as depression and even dementia – begin early in life before symptoms even appear. This opens the door to prevention of these disorders before they materialize.
- For the first time, neuroscientists are working with psychiatrists and family physicians to “personalize” treatments of mental disorders through the use of genetic and brain data that predicts which drugs will work and which won’t.
- For the first time, nations are launching “brain projects” to map the circuitry and complexity of the human brain, to understand how dysfunction, disorder and disquiet happens and how these can be resolved.

First evidence of what mental illness is:

The 5th US/Canada Forum was witness to a remarkable menu of brain science. Dr. Daniel Weinberger, Director and CEO of the Leiber Institute for Brain Development at Johns Hopkins University in Baltimore, Maryland:

“We now have the first objective evidence ever of what mental illnesses actually represent at the molecular level. This is new knowledge from neuroscience and mapping of the genome.”

“The implications of understanding the genetic causes of mental illness, which are now clearly foreseeable and realistic, were declared by Science Magazine to be the most important scientific breakthrough second only to the origins of the cosmos.”

“These are the first absolute objective clues to what these illnesses are at a very basic cellular level, and this is the “Holy Grail” that science has been searching for.”

Dr. Weinberger said, “We now know that illnesses labelled as depression, schizophrenia, anxiety or substance abuse share the same ‘risk factors’ with certain genes common to each. Genes hold ‘clues to causation’ and explain why mental illnesses run in families – the first objective clues that we’ve ever had through which to predict individual risk.”

In the 1990s – the worldwide Decade of the Brain set in motion by US President George H.W. Bush – scientists learned that the brain was not hard-wired but was plastic, changing and changeable. And it responded to the environments in which people live and work.

Personalized Medicine

A Quiet Revolution – but a revolution just the same. This can certainly be said of the adaptation of personalized medicine to the treatment of depression. The history of using different medications around the world to treat mental disorders has generated a massive amount of scientific data linked with patient characteristics such as genetic markers and brain wave electrical patterns.

Modern science can now use these giant sets of data to make dramatic advances in treating mental health problems by properly matching the choice of psychiatric medication with the patient that has the highest chance of clinical effectiveness.

Dr. James Kennedy, Director of the Tanenbaum Centre for Pharmacogenetics at the Centre for Addiction and Mental Health in Toronto, Canada, is training psychiatrists and family physicians to use genetic data to customize the selection of drug therapies, improving outcomes dramatically.

At the same time, EEG-produced brain data are now being deployed by clinicians in a large clinical trial at the Walter Reed Military Hospital in Washington. This and the genetic-based approach constitute the first deployment of personalized medicine to the treatment of mental illness.

The CAMH Breakthrough

Dr. Kennedy is training psychiatrists and family physicians to use genetic data to inform the selection of drug therapies to improve treatment.

“Until now, doctors made these decisions by trial and error through using different medications,” Dr. Kennedy told the 5th US/Canada Forum. “But our genetic blueprint tells us how people are different and now we are measuring that individuality as the basis for prescribing medications that will actually work.”

Dr. Nicholas Voudouris works with Dr. Kennedy through his Toronto area clinic. Together, they guide family doctors to nail down how genetics can “help physicians write a prescription with more information about the right drug and the right dose for a particular patient”.

“This has never been done before in primary care, but by having this genetic test, we know which medicines will work and which ones will not, using a colour-coded message of go/caution/stop. Through this process, patients see and understand their illness for what it is – **really real.**”

So far, the study outcomes have been nothing short of remarkable, with a first time prescription accuracy of over 90% – compared to prior standards of around 40%.

The U.S. Military Trials

CNS Response of California, a private company, has developed new technology called ‘EEG Evaluation Registry’ (PEER Interactive). This is an open-source database housed on the web that is updated daily and features EEG tests and medication history data.

By linking world-wide archives of clinical data collected over many years on patient EEG test profiles, along with actual drug treatment experience, the PEER tool can identify which medications tend to have (or not have) the most success in treating common mental health disorders for patients with different EEG readings.

An EEG is a standard test of electrical activity that records brain function, much like an electrocardiogram does for the heart. CNS Response is using its system to conduct a large clinical trial involving over 2,000 soldiers from the Walter Reed Military Hospital in Washington DC.

Illustrating the devilishly troublesome ‘trial and error’ methods of treating mental disorders now used across psychiatry throughout the world, CNS CEO George Carpenter reports that recently the US military experienced a shocking 682% increase in the use of psychotropic medications over the last six years – not because the drugs worked but because they didn’t.

These drugs were given mostly to the same soldiers. Try one, no response, try another, and so on. Meanwhile, the CNS technology was deployed as a ‘quality assurance tool’ to determine which psychiatric medications have been effective and which have not.

Historic Progress

The goal of the proposed Partnership is to change the world’s experience with brain-based mental disorders over the next 10 years. There are good reasons for believing this goal to be a practical and plausible one: for one thing, the neuroscience and genomics of mental health are coming close to knowing what these vexing conditions actually are at a cellular level.

Promising stuff. But less so is a report in Nature Magazine that says “developing drugs for the brain has become high risk with most candidates failing.”

Dr. Tom Insel expresses concern about a depleted pipeline of new medicines to treat brain-based mental disorders and a “general retreat” by venture capitalists and the private pharmaceutical R&D industry at a time when scientific progress should be attracting investment into the field.

Some large pharmaceutical companies are eliminating research in areas such as depression and schizophrenia and opting out of the Quiet Revolution. That is some, but not all. Lundbeck is an example of the latter.

The sponsor of this Report is a global pharmaceutical company that will celebrate its centennial anniversary in 2015, and for the past 30 years, the company has researched and developed medications dedicated to brain diseases.

More than 20% of Lundbeck’s \$3.3 billion (CDN) global revenue is reinvested each year into research and development to understand brain disease biology, and on top of that, in Canada:

- *Lundbeck supports CAN-BIND (Canadian Biomarker Integration Network in Depression). The aim of CAN-BIND is to identify validated brain imaging biomarkers that are clinically useful in diagnosis or treatment prediction.*
- *Familiar with the challenges of advancing brain science, Lundbeck will **not** be one of the companies taking a break from the Quiet Revolution. This decision will save lives.*

Urgent Need

Dr. Thomas Insel: “*Although psychiatric medications have been among the most widely prescribed of all drugs in medicine for the past decade, the continuing high disability and mortality from mental disorders demonstrates the urgent need for better treatment.*”

Just when most investors in this area are becoming risk averse, exciting new opportunities for drug discovery and development are emerging. Research findings have identified new molecular targets, new clinical targets and new uses of current treatments, including strategic combinations of medical and psychological therapies.

These new findings can serve as the basis for the next generation of treatment for mental disorders, but progress depends not only on translating new biology into new treatments but also on creating a new culture in science for accelerating this translation process based on standardization, integration and sharing of data among researchers themselves.

Hyman Report

Dr. Steven Hyman is the former provost of Harvard University and is now the director of the Stanley Center for Psychiatric Research at the Broad Institute of MIT. He chaired a star-studded committee of US scientists to articulate a detailed 10-year plan for “One Mind for Research.”

The Report that ensued – “From Molecules to Brain Health” – concluded that “the staggering global toll of brain disorders urgently demands effective solutions.”

“Indeed, the profound, negative consequences of brain disorders are growing steadily as humans live longer, as old scourges such as infectious disease begin to recede, and as globalization exerts increased pressure on human capital formation and performance.”

“The cost of inaction will prove staggering,” the Hyman report said. “And it is time for new investments and a concerted effort. Powerful new and emerging scientific tools make possible a significant acceleration in both discovery and applications to disease.”

The Hyman Report says, “Important new ideas and tools have come not only from neuroscience itself, but also from genetics, chemistry, physics, engineering, computational sciences and other disciplines.”

“Significantly, advances in fields ranging from genomics to optics to magnetic resonance imaging have not only strengthened neuroscience, but have also engendered cross-disciplinary collaborations and new modes of scientific organization that free our imaginations to examine important problems in a whole new light.”

Not Just Drugs

One day it will be plausible to engineer new therapies that will have a beneficial effect in a matter of hours and days, not weeks and months. A standard to pursue. At the same time, it is important to remind ourselves that drugs alone are not the exclusive answer to preserving or recovering one’s mental health.

Social and peer supports, psychological counselling (such as cognitive-behavioural therapy), and the prevention and mediation of psycho-social risk are all part of promoting and protecting the mental health of working populations.

Neuroscience and allied disciplines in science can help in this. Epigenetics, for example, may be a valuable tool to help determine how workplace environment can influence employee wellbeing.

While genetics focuses on the sequencing of our DNA, epigenetics focuses on how cells actually play out in real time, what traits (or vulnerabilities) actually emerge. This will clarify what role the environment actually plays in illness.

The National Institution of Mental Health believes science must place a greater emphasis on the functionality of the brain in determining effective approaches to treatment. Mental Health International’s own functionality model now in development will inject this principle into disability case management practices.

“Brain Health Free Trade”

Dr. Anthony Phillips, Scientific Director, Institute for Neuroscience, Mental Health and Addiction, Canadian Institutes for Health Research, likens an international alliance in “Brain Health for a Brain Economy” to the free trade of goods and services.

Canada and Europe recently signed a free trade deal, while, at the same time, five or six major brain science initiatives are now underway between Canada and Europe that represent hundreds of millions of dollars invested in brain research.

For more than five years, Canada and Europe have been building an enduring partnership in neuroscience, one which holds out significant promise in unwrapping those mysteries of brain function that are critical to the resolution of brain injuries and illnesses.

Dr. Phillips says, “The CIHR is an early champion of epigenetics and we now have the International Human Epigenome Consortium, a \$200 million initiative to give us greater insight into understanding how the genetic code is read and the implications of that for understanding brain disease.”

Dr. Phillips:

“In the very important area of dementia-related research, Canada is involved in two major initiatives: one, to understand how our knowledge of the brain can inform better patient care and, two, the whole question of neuro-degeneration – insults to the brain that happen throughout life.

“The impact of mental health conditions is profound at a personal, societal and economic level. In developed countries, economies are increasingly knowledge-based making a workforce with good mental health an economy’s most valuable resource.

“But research in mental health treatment and the use of evidence-informed practices are insufficient or uncoordinated,” he said, noting that his Institute is creating Mental Health Research Network to help fill these gaps.”

PARTNERSHIP SPAN OF INTEREST

THE ASSAULT ON LIFE EXPECTANCY

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The US/Canada 5th Forum demonstrated that top scientists want to find a way to build a bridge between brain science and clinical care. And there is a compelling reason for this. Our collective failure to adequately deal with mental disorders is shortening peoples' lives on a disturbing scale.

New data demonstrates that mental disorders are compromising gains in life expectancy that the world has achieved over the past 50 years. Indeed, Americans living with major mental illnesses in several US states have seen their lifespan fall below that of Sub-Saharan African countries with emerging economies such as the Sudan (58 years) and Ethiopia (52 years).

The US National Institute of Mental Health reports that mental disorders reduce life expectancy by 25 years. This is not a scare tactic. It is a walk-up call. Mental illness is not just a mood disorder like depression – it is a heart attack like depression. It is not just an anxiety problem, it is a breathing problem, a blood problem, a suppressant of our immune system and amplifier of chronic pain.

Depression is present in 90% of suicides. And suicide is now the leading cause of violent death in the world. Researchers have found that some Americans with major mental illnesses died 14 to 32 years earlier than the general population and their lifespan ranged from 49 to 60 years of age compared to average life expectancy in the US of 78 years (NIMH).

But what are these people dying from? Pretty much what other people die from. Cardiovascular illness, cancer, diabetes etc., pointing up the impact of mental disorders, specifically depression, on the course and outcome of these other chronic disorders. The links between brain-based disorders and other forms of chronic illness are now well-known. The Great Depression Matrix (shown on the next page) reflects this:

Higher Risk Factors

People with major mental illness are more than twice as likely to smoke cigarettes and more than 50% more likely to be obese. Depression can make the heart work harder, reduce heart rate variability and increase the risk of heart attack while increasing the risk of stroke among women.

THE GREAT DEPRESSION MATRIX –
MENTAL HEALTH INTERNATIONAL

There is much
that is physical
about mental
illness, and
much that is
mental about
physical illness.



Depression is also associated with complications of diabetes affecting eyesight and with premature death within the type II diabetes population. The constituent diseases of the Depression MATRIX ‘zig and zag,’ one to another, complicating risk, worsening outcomes.

The New England Journal of Medicine reports that diabetes raises the risk of dying from cancer by 25%. The Canadian Diabetes Association reports that 80% of those with diabetes die from cardiovascular disease. Research found death rates among cancer patients 39% higher among those with depression.

Researchers at King’s College in the United Kingdom found ample evidence that depression is not only a brain disorder but a brain/body disorder – probably many manifestations of disease. Dr. Roger McIntyre of the University of Toronto contends there is adequate evidence to suggest depression is a metabolic assembly.

Insulin to Treat Depression

Dr. McIntyre notes that the brain’s heavy use of energy (i.e. bioenergetics) provides the basis for studying the role of intranasal insulin as a treatment for depression and cognitive impairment. He reports that mental illnesses can have the same effect on life expectancy as smoking and even more than obesity, thus reducing life expectancy by 25 years, consistent with Dr. Insel’s observation.

The goal of finding a cure for mental illnesses to save lives from heart attack seems to be a prudent and powerful incentive to attract broader public support and new funding sources for mental health research.

Origins in Childhood

The mostly-economic costs of brain disorders are likely to reach \$6B a year in the next 15 years. At present rates, mental illness in the younger population and degenerative disorders in the older will drive this trend. Both streams start in childhood.

Dr. Insel believes the ‘yet-to-be calculated’ impact of depression on the costs of treating cardiovascular disease and other major chronic conditions may turn out to be the most significant of all the costs of mental disorders.

Dr. Insel: “The evidence is increasing that the leading costs of mental

illness are in the extra costs of these chronic (physical) problems that become so much worse in people suffering serious mental illness.”

The London School of Economics finds that:

- “Nearly a third of all people with long-term physical conditions have co-morbid mental health problems like depression and anxiety;
- “These mental health conditions raise the costs of physical health care by at least 45% for a wide range of conditions, including cardiovascular disease, diabetes, and COPD at each level of severity.”

A study of 250,000 people in 60 countries – the largest ever to compare the health decrements of depression and other chronic conditions – found up to 23% of those with a chronic disorder suffer depression.

In 2006, the European Union’s Consultative Report concluded that “evidence of co-morbidities is persuasive” and these co-morbidities impose a “multiplier effect” on the known costs of health care as high as 30–40%.

Depression has been linked to the accelerated progression of tumors among some forms of cancer. Those living with depression have four times the incidence of cardiovascular disease, and those living with diabetes experience excessively high rates of depression.

Stampede Toward 2020

Brain-based mental disorders are stampeding toward 2020 when these conditions will account for 15% of the entire global burden of disease, more than half of the disease burden represented by brain illnesses and injuries overall. Depression itself will disable more people than AIDS, war and traffic accidents combined.

Depression is the leading cause of workplace disabilities and with heart disease will be the leading cause of work years lost through disability and premature death inside the next decade or so.

By treating depression more effectively – by achieving, one day, a pathway to the ultimate remission of its symptoms, a de facto cure – we may save many of the 750,000 lives lost to suicide in North America and Europe in one deadly decade, and prevent the injuries of 20 times that number among those making the attempt.

PARTNERSHIP SPAN OF INTEREST

CHOOSING DEATH OVER LIFE



“Suicide: men die the most, women try the most.”

In Canada, the number of kids who take their own lives might be expressed in these graphic terms. That is, their loss of life to suicide is equivalent to a jumbo jet filled with teenagers crashing into the ground once a year – year in and year out – killing every kid on board.

Suicide has global reach. Mental illness and substance abuse are its truest companions. Perhaps as much as global warming or the threat of terrorism, suicide poses real risk to human liberty and rights of citizenship and opportunity.

Blinded by Stereotypes

Depression is the root cause of nine of every ten suicides. Suicide is not an expression of the weak. It is a choice of the desperate. This brings us to a theme we must embrace – prevention. The Global Business and Economic Roundtable released guidelines for working parents to prevent suicide among their adolescent children. It is available at mentalhealthroundtable.ca and mentalhealthinternational.ca.

Notably, these guidelines start with the proposition that parents must be honest with themselves: do they – do we – harbor stereotypes of mental illness which may blind us to the distress we would otherwise detect in our own children? A question we must not dodge.

We must invest in research to learn how best to inform and educate our children – and ourselves – on how to avoid the risks of suicide. This must be a discussion that is open and transparent in our schools and homes.

In the US, more soldiers now die from suicide than enemy fire. Americans lose more lives to suicide in any two year period than they lost in the entire Vietnam War. Suicide is an especially deep ravine in human experience and the leading cause of violent death in the world.

The Deadly Decade

According to estimates, 74,000 persons in the European Community and the region bounded by the North American Free Trade Agreement took their lives in year 2000 and another 76,005 five years later.

If we project these numbers across the ensuing decade ending in 2010, it is conceivable that nearly three-quarters of a million people took their own lives in North America and Europe in that deadly decade.

Completing suicide is a final act that tends to draw our attention away from the implications of attempted suicide. In Canada for example, there is an average of 10 suicides per day or 4000 a year but 17,500 Canadians were sent to hospital in 2010 for self-inflicted injuries.

The highest concentration of suicide-related hospital admissions was among young women 15 to 19 years of age. Here we see an ironic twist: while 50% fewer men attempt suicide, men are three times more likely to die from suicide. Men die the most. Women try the most.

Suicide Gene?

In the United States and Sweden, suicide rates actually declined since the 1980s except in the younger age group of 15 to 24 years. In Ireland, 40% of all deaths among young men 30 years of age and under are due to suicide. In Europe, 22/100,000 boys take their own lives; girls, 4.8/100,000.

The Brain and Behavior Research Foundation and the National Alliance for Research in Schizophrenia in the United States found “abundant evidence that suggests changes in one of the brain’s neuro-transmission systems may occur among people who attempt suicide.”

Researchers are looking at one version of one gene in particular which appears to increase this risk and are investigating treatment options for those who carry this vulnerable gene, using brain imaging technology to trace neural circuitry associated with suicidal ideation.

Family Risk

Notably, studies are now assessing the impact of suicide on family survivors including children. Parental suicides raise the risk that a child will follow, but not all do. What are the factors that make this life-and-death difference? What are the treatment options?

The team of Dr. Gustavo Turecki at the Douglas Institute for Mental Health, an affiliate of McGill University in Montreal, is a world leader in suicide prevention and breaking new ground in a field that demands greater public attention.

The Parliament of Canada voted unanimously to make suicide prevention a national priority and the government is now consulting Canadians on what that would mean and how to take this resolution forward in a meaningful way.

One applauds this but we also note that it has been more than a year since the resolution was passed and another 4,000 Canadians have lost their lives. It will be in the interest of business organizations to unlock the mysteries of suicide in order to prevent it.

Ten Steps Toward Suicide

(GLOBAL BUSINESS AND ECONOMIC ROUNDTABLE ON ADDICTION AND MENTAL HEALTH)

01

Emotional Isolation

Malignant loss of self-esteem and usefulness.

03

Void of Joblessness

Deep sense of loss of identity, self-worth.

05

Impulse

Why not right now?

07

Available Means

Gun, rope, drugs, locale.

09

Youth and Children

Altered perceptions of death and dying; loss of place.

02

Peer Pressure & Exclusion

Deep sense of having lost acceptance, recognition, belonging.

04

Emptiness of Depression

Pervasive loss of the energy and motivation to live.

06

Drugs/Alcohol

Desperation peaks.

08

Family History of Suicide

Higher risk.

10

Social Disadvantage & Grievance

The profound weariness of perpetual worry and seething.

Half of Europeans in Early Retirement Diagnosed with Depression

Dr. Peter Høngaard Andersen is the new CEO of the European Brain Council and he sees brain health problems “exploding” across the world, but “only a fraction of the costs are recorded in the health care system.”

Therefore the trajectory of costs into the future, Dr. Andersen says, are unrecognized by politicians who are more or less blind to other cost categories – pensions, supplementary health benefits (social services), lost work time – which absorb the greatest dollar impact.

Studies have shown that health care absorbs only 8–10% of the total costs of mental disorders in Sweden, 10% in the UK and 12% in Denmark are borne by the health care system itself.

This reflects the fact that access to qualified health care services remains low (in both Europe and North America) and as a result, the heaviest cost burden of brain-based mental disorders is borne outside the health care delivery system.



PARTNERSHIP SPAN OF INTEREST

THE NEW WORKPLACE

By definition, mental health and mental illnesses are an economic issue of strategic importance to business for these reasons:

- Mental disorders are concentrated in the labor force and; therefore; represent a significant business and economic cost.
- Economic costs outpace the costs of treatment largely because treatment rates are low. At the same time, we now know that estimates of both the economic and health care costs and access to quality care limited. The law of halves.
- Mental disorders are incomplete and understated.
- Mental disorders are the form of illness with the greatest impact on people of working age (London School of Economics) and among people at work, mental illnesses account for nearly half of all disability-related work absence in Canada.

Major depression is the leading individual contributor to DALYs (disability-adjusted life years) in the United States, surpassing even ischemic heart disease which, with depression, is en route to becoming the leading cause of work years lost to disability and premature death.

Brain-based mental disorders are chronic in nature and begin early in life. For example, in one study, 50% of adults with a mental disorder described onset by age 14 and 75% by age 24.

Dr. Thomas Insel says, “Brain-based mental disorders devastate human capital formation and adult productivity and explain much of the tragedy of teen and young adult suicide.”

Unhealthy Management Practices

Can environments cause mental illness? Dr. Weinberger notes that, “Science has always known that the environment is very important in the emergence of mental illness, and even to the causation of mental illness.”

He says: “There are many socio-environmental factors that contribute to all aspects of how we think about psychiatric illness. Environmental factors contribute undoubtedly to people’s risk, to the age of onset, to severity, disability and also, probably manifestations.

“For example, we know that severe adverse childhood experience is a strong risk factor for a child for adult psychiatric illnesses. It’s impossible to dismiss this relationship,” Dr. Weinberger said.

The hope is that by putting genetics into the equation, environmental factors will become much more apparent as to how they represent risk.

Duty to Care

That said, it is less certain that toxic workplaces on their own cause mental illness. Chronic job stress, for example, is hard to bottle as the sole trigger of depression. In Canada, case law has established that employers have a “duty to care” about the mental health of their employees.

Two reports by Dr. Martin Shain (2002, 2007) found that judges and tribunals consistently ruled in favour of employee complainants about toxic workplace practices and work environments and agreed that the environments and conditions of work can cause ‘mental injury.’

In response – with original work funded by Great West Life Assurance Company, of Canada – the Mental Health Commission of Canada led the development of national standards for psychological health and safety in the workplace. A three-year analysis of 30 case studies is now underway.

On purely economic grounds, the case for international cooperation between business and science is inarguable. Mental illness is heavily concentrated in the working populations and annually costs Europe and North America an estimated \$1.2 TRILLION a year (Roundtable Final Report).

Chronic job stress is a psycho-social workplace health and safety hazard as dangerous as unsafe equipment, polluted air and criminally poor maintenance. Management practices most likely to cause, exacerbate or complicate emotional distress or symptomatic mental illness – principally depression and anxiety – include:

Unreasonable demands day-in and day-out, withholding employee discretion, rejecting ‘out of hand’ workload concerns, randomly changing priorities, the treadmill effect at work, and perceived unfairness on a perpetuated scale.

Isolation and Frustration

These management practices constitute the breeding ground for chronic job stress that can affect brain function similarly to how a serious knock on the head can inflict a concussion. From these flow the ingredients of burn-out and mental distress if not mental illnesses:

- Isolation and rumination or seething which are predictors of depression;
- Futility and workplace churn created by pervasive uncertainty and job loss;

- Embedded employee frustration and fractured employer-employee trust.

These conditions can invade the health of the working population like a super flu bug and chronic job stress is a dynamic boiling pot of environment, experience and brain response that can pose a risk to mental health.

Therefore, the prevention of the disabling and sometimes deadly effects of mental illness cannot rely on medical treatments or psychological care alone. Prevention of risk is essential and that includes dismantling the sources of chronic job stress through management training.

On the other side of this equation, we find the building blocks of a psychologically health workplace:

- Organizational objectives are well understood by employees.
- Employees have a clear picture of what is expected of them.
- Employees have the discretion and needed tools to do their job.
- Cultures of resilience replace cultures of angst and tension.
- Job fulfillment for employees is recognized by employers as part of the employment deal.
- Corporate values put a premium on trust and fairness.
- Employees are encouraged, even trained to ‘peer support’ their co-workers.

In this kind of Workplace, CEOs will see employee mental health as a straightforward matter of **asset management**. Productive capacity will be the stuff of inclusion, trust, loyalty and motivation and not merely the inanimate objects of machinery.

Healthy Workplaces are defined by fairness, respect, recognition, appreciation, job clarity, reasonable demands, involvement, employee control over work, common purpose;

Unhealthy Workplace are defined by frustration, distrust, anxiety, fear, tension, low morale, low commitment, chronic job stress, bad management.

The New Work Hazards and strongest predictors of days lost at work are psychosocial work climates. And once recognized and embodied by occupational health and safety policies and practices, these hazards – like others – are mitigated, reduced, and even eliminated.

This represents application of the “Wilson Principle” as documented in earlier reports. Michael Wilson – early in the journey to mental health in the workplace – told energy companies that mental health and safety should be accommodated just as much as “safety at the well head.”

The Flesh and Blood of Capitalism

Human capital – often rejected as a fuzzy, imprecise concept – takes on real definition in a brain-based economy and cannot be formed without developing the cognitive and intellectual capabilities of people. This is about education and training. It is also about promoting healthy brain function.

The importance of the cognitive capacity of employees to the financial performance of organizations is inarguable. The landmark Gallup/Sears study showed financial results are a lagging indicator of financial performance, but employee outlooks are a leading indicator.

Wharton School researchers found that the surest way to profits is treating employees as assets. Harvard’s Michael Porter says the only way left for companies to differentiate competitively is through the skills of their people. Technology and pricing no longer do the trick.

In the New Workplace, productivity is achieved not through the blind efficiencies or speed of machines, but by people being innovative, analytical, resilient and team-oriented.

Gordon Nixon, CEO of the Royal Bank of Canada, refers to “the economy of mental performance” and this means that workload and work distribution are appropriate topics for open discussion in the workplace.

In that light, ‘brain health’ has strategic economic value and the New Workplace is designed to incent creativity, to match properly employee skills and jobs, to provide not just compensation for the pocket book but inspiration for the soul: job fulfillment.

Why Stigma Sticks

Stigma is the root cause of workplace reprisals against employees known to be suffering these conditions. Employees, as a result, often go to great lengths to ensure that bosses and co-workers do not find out about their illness.

The fear of stigma is so debilitating that two-thirds of workers with depression will not seek treatment and only 1 in 10 workers who report occupational impairment; will take medication.

Stigma is a complex social process with many components including negative stereotypical imagery, fear and intolerance, social avoidance, social inequity where people are not given the same opportunities, and unfair treatment and discrimination.

Stigma plays out in these ways (Our thanks to Dr. Heather Stuart of Queen’s University):

I Self: People affected with mental illness internalizes the stereotypes they have grown accustomed to hearing about and, as a result, they expect to be stigmatized, causing them to feel shame and guilt which leads to low self-esteem, withdrawal and feelings of personal failure, secrecy and impairment.

II Social Exclusion: When social networks and families believe the negative stereotypes of violent, unpredictable, and lazy behaviour, they distance themselves through fear and intolerance from the individual and this leads to social exclusion.

III Acts of Commission: Infringement on rights, exclusion from policies (i.e. psychiatric hospitals, not included under classification of hospitals).

IV Acts of Omission: Rights or needs of individuals not seen as important, no policies established, lack of funding in the health care system, lack of knowledge and understanding.

Consequences of stigmatization are onerous for the individual suffering this fall-out and for society which is diminished. Examples of this:

- Inequitable access to health care, restricted social networks, housing issues;
- People afflicted are often unemployed or underemployed;
- Delays in appropriate treatment;
- Poor adherence to treatment regimens;
- Lack of social support, which in turn, leads to a greater disability;
- Family blame, seen as harboring violent person, social and economic loss.



TOWARD THE PARTNERSHIP

THE AGE OF COLLABORATION

The 5th US/Canada Forum created a clear consensus that the idea of an international business + science makes sense. Among the discussants who supported the concept:

Business:

Honourable Michael Wilson,
CHAIRMAN, BARCLAYS CANADA;

Rupert Duchesne
GROUP CEO AIMIA CORPORATION
(PARENT OF AEROPLAN) AND
CHAIRMAN, BRAIN CANADA;

John Hunkin
FORMER CEO OF THE CANADIAN
IMPERIAL BANK OF COMMERCE AND
HOST OF THE 5TH US/CANADA FORUM
ON MENTAL HEALTH AND PRODUCTIVITY;

Patrick Cashman
PRESIDENT AND CEO,
LUNDBECK CANADA

Don Tapscott
BUSINESS OWNER AND WORLD
AUTHORITY ON THE DIGITAL ECONOMY;

Colum Bastable
CHAIRMAN, CUSHMAN-WAKEFIELD
IN CANADA

Michael Schwartz
SENIOR VICE-PRESIDENT, GREAT
WEST LIFE ASSURANCE COMPANY

Michael Sullivan
CEO, CUBIC HEALTH

Anthony Boeckh
FOUNDER OF THE GRAHAM BOECKH
FOUNDATION IN MONTREAL;

Joseph Iannicelli
PRESIDENT OF BANYAN WORK
HEALTH SOLUTIONS AND THE
FORMER PRESIDENT AND
CEO OF STANDARD LIFE
INSURANCE COMPANY

David Blodgett
PRESIDENT AND CEO, GROUP
MEDICAL SERVICES AND GMS
INSURANCE

Melinda Head
PRESIDENT HEAD RESEARCH

Greg Durant
SENIOR VP AND CHIEF ACTUARY,
AON HEWITT

Science:

Dr. Rémi Quirion
CHIEF SCIENTIST OF QUEBEC

Dr. Anthony Phillips
SCIENTIFIC DIRECTOR OF THE (CIHR)
INSTITUTE FOR NEUROSCIENCE,
MENTAL HEALTH AND ADDICTION

Dr. Thomas Insel
DIRECTOR OF THE US NATIONAL
INSTITUTE FOR MENTAL HEALTH

Dr. Peter Høngaard Andersen
CEO, EUROPEAN BRAIN COUNCIL

Dr. Daniel Weinberger
DIRECTOR AND CEO, LIEBER BRAIN
INSTITUTE, JOHN HOPKINS UNIVERSITY
AND IN A MESSAGE TO THE 3RD US/
CANADA, **DR. STEVEN HYMAN**, THEN
HARVARD PROVOST.

Dr. Bruce Pollock
VICE-PRESIDENT, RESEARCH, CENTRE
FOR ADDICTION AND MENTAL HEALTH
(AFFILIATE, UNIVERSITY OF TORONTO)

Dr. James Kennedy
DIRECTOR, TANENBAUM CENTRE FOR
PHARMACOGENETICS, CENTRE FOR
ADDICTION AND MENTAL HEALTH

Dr. Zul Merali
PRESIDENT AND CEO, SCIENTIFIC
DIRECTOR, INSTITUTE OF MENTAL
HEALTH RESEARCH, UNIVERSITY OF
OTTAWA (AFFILIATE, ROYAL OTTAWA
HEALTH CENTRE)

Dr. Trevor Young
CHAIRMAN OF PSYCHIATRY,
UNIVERSITY OF TORONTO

Spoken Emphasis

Dr. Andersen underscores the need for international action but sees resistance in key circles: “Diseases have no borders, but politicians just don’t appreciate that. They just don’t (understand) that we need to collaborate across continents and generate the exchange of ideas and data that will take us to the next level. Politicians do not understand how important this goal is.”

Dr. Quirion stresses that, “Mental health research and mental health in the workplace must become top priorities worldwide – we must put mental health in the workplace on the agenda of the G8, UN, and the WHO” and bring young minds (under age 30) into the Partnership to help us package our message in 140 characters or less.”

Louise Bradley is President and CEO of the Mental Health Commission of Canada and brought forward the world’s first national standard for psychological health and safety in the workplace. Supporting the business + science alliance, she says, “Partnership and collaboration is part of the Commission’s overarching philosophy.”

While there has been considerable international cooperation, this has been largely science-to-science. Expanding this to include business as a strategic partner of science across borders would seem to make sense. There is much to leverage, build on and bring together for this purpose.

A Business + Science Partnership – by way of example – would not only be an advocate for scientific data sharing and collaboration, but such a partnership could:

- Make the case for barrier reductions and political support to accelerate the transfer of new scientific discovery into clinical innovation and improved care;
- Recruit workplaces and employee groups as accessible sites and volunteer subjects for clinical trials to reduce the cost and time needed to bring new knowledge and new therapies to market; and
- Create an information service to translate business-to-science and science-to-business to report on trends and to interpret the meaning of what brain research means what to employers, employees and communities.

The authors see the Partnership as a big tent, not a big organization. A ‘connector of dots’ among scientists and business people, promoting collaboration as a first principle of problem-solving.

Senior scientific figures at the 5th US/Canada Forum candidly examined the need for change in the way science is done and the need to replace the vertical silo’s of scientific inquiry with “collaboration at every turn.” Business discussants agreed and Don Tapscott took the lead.

“When it comes to the public sector, academics and research conducted by hospitals, we see individual scientists compete for grants to fund their research. And clinical trials are often duplicative. That’s the way the granting model works,” he said.

“Scientists work on research projects often in relative isolation. There is only limited collaboration and sharing of data and results are peer-reviewed and published by a separate industry that charges the academic institutions that funded the research in the first place to buy the publications. And those publications are often behind a firewall.”

Mr. Tapscott:

“This entire model has some big flaws. A lot of people are coming to the conclusion that we need a fundamental change in the way that together, as a society, we investigate these important problems. There is a lack of transparency and data is hoarded.”

“And Dr. Bruce Pollock, of whom I’m a huge fan, says real breakthroughs in discovery and into the causes and effective treatments of mental illness will occur when the silence within and between institutions doing the research falls. We need to move more to a new era of collaboration and the sharing of data and knowledge.”

Trevor Young, Chair of Psychiatry at the University of Toronto, points out that there has been a long tradition of sharing data and international collaboration to move patient care ahead. He basically argues, “Why can’t we do the same thing when it comes to research?”

Against this backdrop of commentary, Mr. Tapscott set forth a slate of principles through which scientific institutions and researchers can come together. We would argue that these, for the next generation of researchers, are more than guidance – they are a survival kit.

The Don Tapscott Principles for a New Era of Collaboration

1. Collaboration

“A new age of collaboration” is reaching across society and the economy. The Internet is a global computational platform that encourages collaboration by reducing costs, enabling close working relationships, sharing information and creating new modus operandi for whole institutions.

Old models of the corporation, financial services and the media are being transformed. Universities are losing their monopoly over higher education as more young people study through wide-open, online university courses.

2. Openness

In the past, organizations defaulted to secrecy. Today, increasingly they are opening-up – this is good because as organizations get naked, they need to get buff – creating good value, and behaving with good values. My research shows that when people communicate and institutions share pertinent information with their partners, employees, customers, communities where they operate, all kinds of good things happen. Transaction, collaboration and research costs drop and you build trust and loyalty.

3. Sharing

Mental health researchers need to break down the silos that exist between them and start sharing practices, experiences and data. The pharmaceutical industry has pretty well stopped doing mental health research, not because the brain is too hard to figure out, but these firms just can't do it by themselves.

Drug companies are advised to work with each other in the pre-competitive stage of research, share clinical trial data and comparative data, create a 'commons' for all clinical trial data to elevate competition to a higher level around the delivery systems, services, packaging, and customization of medications.

4. Interdependence

The pillars of society – business, government, civil society, academics and even individuals (because of the Internet) – must increasingly work together. That is what this 5th Forum is all about. Many wonderful initiatives are starting to happen. One example is a proposed partnership between private philanthropic dollars, pharmaceutical companies, government and academia with the sole focus of bringing neuroscience drugs to market.”

5. Integrity

Integrity is about being honest, considerate of the interests of others, and being accountable. And this is the foundation of trust. Trust is the expectation that another party will be honest and care about your interests and abide by your commitments. We need to change mental health research to do the right thing. Arguably, the old model, in light of today's possibilities, lacked integrity.

POSTSCRIPT: THESE PRINCIPLES ARE A BEDROCK FOR A BUSINESS + SCIENCE PARTNERSHIP AND A NEW PARADIGM IN GLOBAL RESEARCH.

Business Can Lead Change

Rupert Duchesne, Chairman of Brain Canada, told the 5th US/Canada Forum that, “Just over a year ago, the Government of Canada and Brain Canada embarked on the biggest single private partnership in brain research, \$100 million from the government over five years to be matched by the private sector. We’re about a third of the way towards that match.

“This demonstrates the critical importance of and the necessity for government, business and science to come together in a common cause to have meaningful impact not only on mental health, but obviously also on the disabling often deadly effects of brain illness and injury.

“This Forum also demonstrates the same point with an added dimension. It’s about cooperation and partnerships across borders. The problems we’re grappling with know no boundaries.

“That is why we are having this meeting. A formal cooperation between business and science is really critical, if we’re going to bring a better understanding and better outcomes to this area of brain health.”

Colum Bastable, Chairman of Cushman-Wakefield in Canada:

“Business and science are natural allies in the fight against mental illness and it is time we joined the fight together – beyond philanthropy – in terms that reflect the strategic stake we have in reducing and preventing mental illnesses in the labor force.

Great West Life Senior Vice-President Mike Schwartz: “I think the concept of creating a vehicle where business and science actually communicate in an orderly and strategic way across borders is phenomenal. So, the challenge is how do you bring that about?”

Mr. Tapscott: “I love the term “business-science partnership” because it gets us beyond that old paradigm of business’s narrow interest in reducing costs. Is it conceivable that there could be a global collaboration in critical areas of psychiatric and brain research with the goal of breaking the logjam and achieving breakthroughs. What would such collaboration look like? What kind of information could be shared?”

Dr. Zul Merali answers that question. He founded The (Royal Ottawa) Canadian Depression Research and Intervention Network to promote ‘highly-collaborative’ scientific and clinical work and his inaugural conference was called, appropriately, ‘transforming depression through connections.

Anthony Boeckh: “Mental health has got to be a team game, and we need a lot more players on the team, and we need a level playing field. I think international collaboration among funders can really bring lots of things together to really push the agenda and to learn from each other.”

“Partnership Must Be Powerful Enough to Meet the Challenge”

Dr. Thomas Insel, Director of the US National Institute for Mental Health says, “This is an extraordinary time when global awareness of a global unmet medical need will require a business/science partnership that is powerful enough to meet the challenge.

Disability:

When the World Health Organization looked at disability as opposed to mortality, the leading indicator was not heart disease, cancer, diabetes, or AIDS, it was brain disorders – neuropsychiatric illnesses, especially depression.

Early Onset:

Unlike the big killers – cancer and heart disease – most brain disorders such as depression, schizophrenia, autism, ADHD and addiction, begin in childhood.

Suicide:

Many of the mortalities of mental illness are preventable because they are due to a brain disorder that just isn't being detected and not treated or, if treated, not well enough.

Economic Impact:

The World Economic Forum – much to their amazement – found that mental illness is the largest cost of all chronic non-communicable diseases, \$2.5 trillion in 2010 and growing. The reason: these conditions start early and are global, prevalent and disabling.

Mental disorders have become a bigger barrier to development, globally, than cancer, diabetes, pulmonary disease and heart disease. This, in turn, drives global awareness of the need to figure out how to cope with the problem.

Inadequate treatment:

We must help people who need treatment to get treatments that work. We can do much, much better than we are doing right now in that field. Right now, we have a law of halves: half the people who have depression will get a diagnosis and treatment; about half of those will get a treatment that has a scientific basis and any real hope of being effective; and about half of those will respond sufficiently to go back to work at full force.

When a key doesn't fit, the door doesn't open.

After close to 20 years of trying to make the business and economic case for workplace mental health on the strength of what current rates of brain-based illness or injury is costing us, it is time to change our tune.

A first cousin to “cost” as a reason for business to care about mental health problems in the workplace is “lost productivity” which, on the surface, is a good point. But simply, at this stage, is overworked and doesn't resonate.

In this report, Dr. Tom Insel says expenditures on brain research are an investment, and he's right. But an investment must have a return. Otherwise, it is a (tax deductible) cost.

One of the self-appointed missions of Mental Health International is to develop an 'ROI' on corporate 'investments' in (the funding of) brain research, employee health services and benefits and measures needed to embed the characteristics of psychological health and safety in the workplace.

As part of the Business Plan for an International Business + Science Partnership for Brain Health in a Brain Economy, Mental Health International will convene a Task Force of financial experts including CFOs and strategic planning executives, economists, human resources leaders and senior scientific figures to examine that question.

Brain Health + Brain Skills = Brain Capital

We will position the dialogue as a creative effort to define the 'human capitalization' of the brain-based economy and workplace through brain health and brain skills. The Global Roundtable's CFO Framework for Mental Health and Productivity (mentalhealthroundtable.ca) and (mentalhealthinternational.ca) provides a starting point for this deliberation.

Mental Health International is developing workplace instruments to serve as an investment protection portfolio of resources for brain health + brain skills = brain capital. This will give the International Partnership a framework for action.

Within this investment protection portfolio is the Mental Health International “Functionality Model”, incorporating ‘functional health’ into the process of return to work from disabling disorders. This model – consistent with NIMH's view that brain science must put a greater focus on functionality – protects the employer's investment by ensuring that a clinical symptoms- based green light to return to work full or part time is matched by an assessment of the employee's functional health.

EDITORIAL

“THE CHOICE FOR SCIENTISTS: SILOS OR SOCIETY” BY BILL WILKERSON

The “Quiet Revolution in Neuroscience” is headlined by the gap between new brain knowledge and the translation of that information into clinical care on a timely basis let alone 20 years or never.

The “Assault on Life Expectancy” features the well-documented but not well-managed effects of a brain-based mental disorder (depression) on the course of other major chronic conditions. Life, death and economic loss are at stake here.

“Choosing Death” presents the sobering challenge of suicide as it settles across the demographics of working families. Men and boys dying the most, women and girls trying the most. A possible ‘suicide gene’ has caught the eye of genetic researchers?

The New Workplace is a venue of psycho-social risk with decidedly rich potential to become a zone for the first-ever workplace-based model for the prevention of lost work time, disablements and early death associated with mental disorders and both chronic conditions.

We see the proposed business-brain science alliance bringing business closer to the problems that scientists must deal with. This will be, aside from the science itself, an important determinant of whether research will produce real gains for people.

Scientists gathered in Munich in November described tiers or levels of requirements imposed on RX developments required by regulators (is the compound safe?) and payers (does it work?) The questions are vital. The asking is uncoordinated. Therefore, the answering is inefficient and expensive. Why would this be the case? Where will the leadership come from to fix the problem?

Dr. Daniel Weinberger calls for business participation in the neuroscience and genomics of mental health not merely as a source of research funds, but rather by bringing certain management disciplines to science. He speaks of deliverables, deadlines and objectives-setting that draws researchers and their home institutions out of their own head-space and partisan interests.

It is not just business people saying that science researchers must collaborate and share data and unify efforts. It is scientists themselves. At the 5th US/Canada Forum, we heard from or heard about the views of Insel, Phillips, Andersen, Weinberger, Pollock, Young, and McIntyre driving this point home.

Where are the incentives if not the rules that will encourage researchers who work in isolation to get connected to each other.? The Partnership will investigate this and suggest some answers in support of the idea of accelerating the translation of basic science into vastly-improved clinical care.

Placebo versus a candidate (for regulatory approval) compound. This is the essential context in clinical trials. The underlying principle seems flawed when the results of the trial – when the placebo wins – are neither published nor disseminated. Surely society has a lot to learn from every trial and that is the point.

Lessons To Be Learned Dr. Roger McIntyre

The International AIDS Anti-stigma Campaign and its Public-Private Partnership have transformed that disease from a “death sentence” to a “declared” chronic illness

Dr. Roger McIntyre:

“When I was a medical student in Halifax on an 8-week rotation on a general in-patient unit, if someone came in with HIV/AIDS, they likely would not see the end of my rotation, wouldn’t last six to eight weeks. That was then”.

“Now the Center for Disease Control in the US has declared HIV/AIDS a chronic disease. It’s no longer a death sentence. That is a statement about the transformation of a health condition very much stigmatized. It is also a statement about results-oriented deliverables and collaborations that must be our goal, with an urgency for deliverables.”

“Very recent developments indicate that newborns with the virus were ‘cured’ outright through a series of drug injections. This is exactly the wake-up call psychiatry and the brain sciences need to be more accountable and provide deliverables. We have an opportunity to inject results-oriented collaboration into brain science, which hitherto has been missing.”

MENTAL HEALTH INTERNATIONAL

MENTALHEALTHINTERNATIONAL.CA