IN THE SUPREME COURT OF BELIZE A. D. 2012

Claim No. 668 of 2010

In the matter of the Constitution of Belize

And

In the matter of the alleged unconstitutionality of Section 53 of the Criminal Code

And in the matter of an application made pursuant to Section 20(1) of the said Constitution

BETWEEN

CALEB OROZCO
UNITED BELIZE ADVOCACY MOVEMENT

CLAIMANTS

AND

THE ATTORNEY GENERAL OF BELIZE

DEFENDANT

EXPERT REPORT OF BRENDAN COURTNEY BAIN

This report is prepared and submitted by Professor Brendan Courtney Bain.

Professional Qualifications and Experience

Professor Brendan Bain is one of the pioneers in Clinical Infectious Disease practice in the Caribbean and is a leading medical authority on the HIV epidemic in the Caribbean. Since 1983, he has provided clinical care to men and women living with HIV and AIDS, accepting patients of all sexual persuasions, regardless of their reported sexual practices. His specialist medical practice has been at the University Hospital of the West Indies (UHWI) as well as in small private clinics in Kingston, Jamaica.

In addition to his work as an HIV clinician, Professor Bain has been an active member of the national HIV response team organized by the Ministry of Health of Jamaica. He has served in several capacities, including educator, researcher and counselor, policy advisor, administrator and member of the Jamaica Country Coordinating Mechanism.

Between 1989 and 1992, he led the first HIV/AIDS training workshops for health care workers at the invitation of the Governments of the Cayman Islands, Jamaica and Belize. As an advocate for improvement of services to persons living with HIV (PLHIV), he persuaded the UHWI authorities to allow him to start an out-patient clinic dedicated to the care and treatment of PLHIV and to training of younger physicians and nurses in HIV care – the first in Jamaica. This initiative led to the commencement of a similar clinic at the Kingston Public Hospital in Jamaica, increasing access to HIV care for a larger number of patients.

In the year 2000, the Vice-Chancellor of the University of the West Indies (UWI) appointed him as the Focal Point for HIV/AIDS in a regional project aimed at strengthening the institutional response to HIV/AIDS and sexually transmitted diseases in the Caribbean. He has been endorsed by two successive Vice-Chancellors to lead Caribbean training programmes on behalf of the University. Between 2005 and 2010, he served as a member of the inaugural Technical Working Group on HIV/AIDS of the Pan-American Health Organisation.

In 2003, he was invited by a United States Government team to lead the Regional Coordinating Unit of the Caribbean HIV/AIDS Regional Training (CHART) Initiative, which became part of the International AIDS Education and Training Centre directed from the University of Washington at Seattle and funded via the US President's Emergency Plan for AIDS Relief (PEPFAR). The CHART initiative is also the recipient of two successive sub-awards that are part of regional grants to the Pan-Caribbean Partnership against HIV/AIDS from the Global Fund to fight AIDS, Tuberculosis and Malaria (rounds 3 and 9). Over the past nine years, the CHART programme has trained health care workers and lay counselors in the English and Dutch-speaking countries of the Caribbean as well as in parts of Haiti. Attitudinal training is a central part of the CHART curriculum, with anti-stigma and anti-discrimination training being paramount.

In 2006, Professor Bain was recognized by the Medical Association of Jamaica "for distinguished service in Medicine." The National AIDS Committee of Jamaica has honoured him twice; first in 2007 for "demonstrating visionary leadership in improving the quality of life for

persons living with or affected by HIV", and then in 2009 for "outstanding leadership in the response to HIV and AIDS" in the Academic Sector.

Professor Bain obtained his undergraduate degrees and post-graduate training in Internal Medicine from the University of the West Indies. He studied and conducted research in Infectious Diseases at St. George's Hospital Medical School with the aid of a Wellcome Trust Research Fellowship. He holds a Diploma in Medical Education from the University of Dundee, Scotland and a Masters Degree in Public Health summa cum laude from Boston University, U.S.A. He is an elected Fellow of the Royal College of Physicians of Edinburgh. He has published over 30 papers in peer-reviewed medical journals and is co-author of the book, Education and HIV/AIDS in the Caribbean published by UNESCO. His current academic appointment is as Professor of Community Health in the Faculty of Medical Sciences at the Mona campus at UWI in Jamaica. He is an Adjunct Professor in the Department of International Health at the Boston University School of Public Health.

Summary of key points

The focus of the present inquiry is how the law treats men who have sex with men who have anal sex in private. The specific request is for modification of the law to exclude the classification of "anal sex between two consenting male adults in private" as a criminal offense.

In this context, a major argument that has been posited by some experts is that the current law impedes access to HIV prevention, care and treatment services by men who have sex with other men (MSM), thus jeopardizing their health and threatening premature demise. Although it is not mentioned specifically by the claimant, I believe that the matter of access to HIV services is one of the considerations relevant to the current case.

The threat of illness and premature death from HIV infection has undoubtedly generated fear for persons in the general society and particularly for persons whose sexual choices put them at greater than average risk of acquiring HIV. Some spokespersons are making a case for special consideration and additional support to be given by the general public and by Public Health and legal authorities on behalf of MSM. This is understandable from a strategic and compassionate perspective. However, it behooves the members of the public as well as persons in authority to use all available evidence in considering how to effectively mitigate the threat posed by HIV.

As a physician and Public Health practitioner, one of my responsibilities is to assess behaviours for their impact on health and wellbeing. When something is beneficial, such as exercise, good nutrition, or adequate sleep, it is my duty to recommend it. Likewise, when something is harmful, such as smoking, overeating, alcohol or drug abuse, and unsafe sexual behavior, it is my duty to discourage it. Together with promoting individual responsibility, it is clear that environments that enable individuals to make and practice safe and healthy choices must be provided at family, community and governmental levels.

Another of my responsibilities as a Public Health practitioner is to assess the cost of behaviour, not just to the individual 'actor', but also to the community. There are some private behaviours, either carried out by individuals or between consenting adults, that may either be helpful or of little adverse consequence to other persons in the community. Behaviours that are helpful to individuals and to the community are to be encouraged. On the other hand, there are instances in which private behaviors result in considerable public cost due to illness, with accompanying loss of productivity and social disruption and the prospect of premature death. The public cost of these private behaviours must be acknowledged and actively reckoned with.

This report shows that the relative risk of contracting HIV is significantly higher among men who have sex with other men (MSM) in Belize than in the general population. This is also true in several other countries for which data are available, including countries that have repealed the law that criminalizes anal sex and countries where the law still applies.

Some Public Health practitioners and agencies have hypothesized that decriminalizing the practice of anal intercourse among consenting adults would lead to a reduction in the incidence rate of HIV infections among MSM. To date, published data have not substantiated this hypothesis.

This report also shows clearly that HIV should not be the only consideration in relation to the matter at hand. Available data from several parts of the world indicate that the relative risk of acquiring and spreading other sexually transmitted infections (STIs)[1] and cancers is unacceptably high among MSM when compared with other men and women.

Factors associated with the high relative risk of STIs and cancers in affected persons *are interactive* and include: (a) choosing a sexual partner whose sexual history is unknown; (b) being

[1] In this report, HIV infection is included among the group of sexually transmitted infections because in the Caribbean, including the country of Belize, the main mode of transmission of HIV is intimate genital sexual contact, including ano-genital contact.

part of a sexual network, including having multiple partners and a high rate of changing partners; (c) having unprotected sex; and (d) having a repertoire of sexual behaviours that includes actions that carry a significant risk either of causing physical trauma or of allowing contact with faecal material – these behaviours include, but are not confined to, penis-anus intercourse. Therefore, even when certain behaviours are done in private, they turn out to have serious deleterious public consequences.

The risk to MSM and their intimate sexual partners is not just to their physical health. The adverse physical and physiological consequences of STIs (including HIV) in MSM create significant and avoidable financial costs to individuals, households and governments. These important considerations must be included when considering whether to give public approval to risky behaviours such as are often practiced by MSM.

It is vital for each country affected by sexually transmitted infections to understand the epidemiology[2] of its epidemics and to devise evidence-based plans for prevention, care, treatment and rehabilitation of affected persons. Successful implementation of plans requires persons in the community to cooperate actively with the health authorities both in private and in public.

All sexually active persons must be urged to take responsibility for private and public behavior change as part of a comprehensive national approach that includes individuals delaying their sexual debut, reducing the number of their intimate sexual partners, getting tested for HIV and other STIs in relation to known risky exposure, learning and practising assertive skills in order to avoid coercive sex, disclosing the presence of an STI to prospective partners, using approved barrier protective devices, avoiding the use of mind-altering drugs – especially during or in temporal proximity to intimate sexual activity, and eliminating behaviours that carry the highest risk of coming into contact with infections. Successful programmes to stem the tide of HIV infections and other sexually transmissible illnesses must be comprehensive rather than piecemeal. In this approach, public and private health and education authorities ensure that everyone in the nation has accurate information and is supported and enabled to take responsibility for the health and safety of self and others.

A comprehensive approach calls for honest collaboration rather than confrontation.

[2] Epidemiology is the study of the distribution and determinants of diseases in the human population.

MAIN REPORT

My responsibilities as a physician and Public Health Practitioner

I am persuaded that as a physician and Public Health practitioner, "one of my responsibilities is to assess behaviours for their impact on health and wellbeing. When something is beneficial, such as exercise, good nutrition, or adequate sleep, it is my duty to recommend it. Likewise, when something is harmful, such as smoking, overeating, alcohol or drug abuse, and unsafe sexual behavior, it is my duty to discourage it."

Another of my responsibilities as a Public Health practitioner is to assess the cost of behaviour, not just to the individual 'actor', but also to the community. There are some private behaviours, either carried out by individuals or between consenting adults, that may either be helpful or of little adverse consequence to other persons in the community. Behaviours that are helpful to individuals and to the community are to be encouraged. On the other hand, there are instances in which private behaviors result in considerable public cost due to illness, with accompanying loss of productivity and social disruption and the prospect of premature death. The public cost of these private behaviours must be acknowledged and actively reckoned with.

Defining sexual behaviours

Sexual behaviours are actions that are commonly interpreted as having a sexual intent and purpose. Some types of sexual behaviour do not involve the physical presence of another person. Examples of such types of sexual behavior are: reading sexually stimulating literature, listening to sexually explicit or sexually stimulating music, viewing sexually explicit films, masturbation, telephone sex and internet-based sex. In the world of sexuality, non-physical sexual behaviours often progress to physical contact.

Male-female and male-male sexual behaviours

In adult male-female sexual behavior, the prelude involves speech, setting of atmosphere and touching – either non-genital (e.g. kissing, fondling of different areas of the body) or touching and stimulation of the genital organs leading to an orgasm or climax. The usual climax of male-female intercourse involves penetration of the vagina by the penis with ejaculation by the male and an orgasm or series of orgasms experienced by the female. Some episodes end

without ejaculation or female orgasm. In some cases, intercourse ends without penetration of the vagina and there may be ejaculation into the mouth or into the anal passage.

The male-male physical sexual repertoire may begin in a similar way to the male-female process and can progress from kissing and fondling to placement of the fingers or hand into the anal passage (fisting), oro-anal contact (called 'rimming' or 'analingus'), and insertion of the penis into the anus. A variety of other actions have been reported in some cases of male-male sexual contact; these include mouth-anal contact, and golden showers (urination on another person). In a small proportion of reported cases, there is scat (defecation on another person) and in a few cases, felching (sucking or eating semen out of someone's anus).

High risk of transmission of infection is related to sexual repertoire, ignorance of partner's infection status and the reality of sexual networks

Several of the behaviours described in the preceding paragraphs are unsafe and therefore unhealthy because they create an unacceptable level of risk of acquiring and spreading infectious diseases that compromise the *health*, and in some instances the *life* of the infected person and the person's partners. As an example, a 1981 paper by R. R. Willcox of St. Mary's Hospital, London entitled, "Sexual behavior and sexually transmitted disease patterns in male homosexuals" published in the British Journal of Venereology, states in part that

> "Mouth-anal contact is the reason for the relatively high incidence of diseases caused by bowel pathogens in male homosexuals. Trauma [during anal penetration] may encourage the entry of microorganisms and thus lead to primary syphilitic lesions occurring in the anogenital area. Similarly, granuloma inguinale, condylomata acuminata, and amoebiasis may be spread from the bowel of the passive homosexual contact. In addition... trauma may be caused by foreign bodies, including stimulators of various kinds, penile adornments, and prostheses. (The phrase in parenthesis is my addition).

(A copy of the said journal article is now shown to me and exhibited hereto, marked B.B. #1.)

The risk of contracting sexually transmitted infections is multiplied when a sexual partner's infection status is unknown. In several instances, persons are not aware that they are harbouring infection because at the time that they are approached they are not experiencing symptoms. In addition, in my professional practice several persons who know that they are infected have told me that they do not disclose to their respective partners. When a person does not know his sexual partner's status, privacy is not sufficient to guarantee safety.

Another factor that increases the risk of transmission of sexually transmitted infections is intimate sexual contact with multiple partners. Privacy does not offer protection from this risk.

Information from Belize, Jamaica and other countries

Belize

According to a study entitled, "HIV seroprevalence and associated risk factors among male inmates at the Belize Central Prison", published in the Pan-American Journal of Public Health in 2009, co-authored by Drs. E Gough and Paul Edwards and based on blood testing among a group of volunteers in the Belize Central Prison, "of the 623 inmates in the sample, 25 tested positive for HIV-1/2 antibody for a seroprevalence of 4.0% (95% Confidence Interval 2.7, 6.0). After adjustment for confounding, HIV serostatus was positively associated with male-to-male sexual activity outside prison, age, and district of residence before current incarceration."

The article came to the following conclusions:

> "The seroprevalence in the Central Prison was almost twice that estimated for the adult population of Belize in 2004 (2.4%). However, the social variables of importance to inmates appeared to reflect the epidemic in the general population, with the exception that male-to-male sex outside prison is likely more important to the male inmate population in Belize. The findings suggest that HIV is likely contracted by most inmates before their incarceration, largely due to same-sex activity."

This article indicates that there is a higher relative risk of contracting HIV by men who have sex with men in Belize. (A copy of the said journal article is now shown to me and exhibited hereto, marked B.B. #2).

Jamaica

In 1993, a Master of Public Health thesis submitted to the University of the West Indies by Mr. Rossi Hassad, which I supervised, recorded the results of a questionnaire survey with 101 persons who identified themselves as men who have sex with men (MSM). Approximately 63% of the persons interviewed said that they engaged in insertive anal sex, while 56% indicated that they practiced receptive anal sex. Just over 39% reported practicing fingering or fisting in the anus, while just over 27% reported applying the mouth to their partners' anus. More than 12% practiced oral sex in which their partner swallows semen, while approximately 8% reported "self and mutual masturbation", and 3% mentioned "golden showers" (one person urinating on his sexual partner).

The most recent statistics available from Jamaica indicate that the rate of HIV seropositivity in a group of MSM who volunteered for testing was 32% compared to the estimated national average adult prevalence rate of 1.7% (data from Jamaica National HIV/STI Programme, 2010). This means that in this group of MSM, the prevalence rate is at least 18 times higher than in the general adult population.

Other countries

The Netherlands – increase in risky behavior in the era of anti-retroviral drugs

Recent data have indicated that consistent use of effective antiretroviral drugs reduces the rate of transmission of HIV. *The proviso is that risky sexual behavior is not increased.* The latter proviso is more than a speculative point, as shown by Daniela Bezemer and her colleagues from the HIV Monitoring Foundation in the Netherlands. They reported in the journal, AIDS, in 2009 that "the reproduction number R(t), a measure of the state of the [HIV] epidemic, declined among MSM in Holland 'early on' from initial values above two and was maintained below one from 1985 to 2000. [However], since 1996, when highly active antiretroviral therapy became widely used, the risk behaviour rate has increased 66%, resulting in an increase of R(t) to 1.04 in the latest period 2000-2004 (95% confidence interval 0.98-1.09), near or just above the threshold for a self-sustaining epidemic." According to the authors, "[their] hypothetical scenario analysis shows that the epidemiological benefits of highly active antiretroviral therapy and earlier diagnosis on incidence have been entirely offset by increases in the risk behaviour rate." They concluded: "We provide the first detailed quantitative analysis of the HIV epidemic in a well defined population and find a resurgent epidemic in the era of highly active antiretroviral therapy, most likely predominantly caused by increasing sexual risk behaviour." (A copy of the said journal article is now shown to me and exhibited hereto, marked B.B. #3).

The United States of America

In the United States of America, there is a significantly higher risk of HIV and syphilis among men who have sex with men compared to other men and compared to women. A Press Release issued by the National Center for HIV/AIDS, Viral Hepatitis, STD, and TB Prevention in the USA on March 10, 2010 stated in part that "Data presented at the U.S. Center for Disease Control and Prevention's (CDC) 2010 National STD Prevention Conference showed the rate of new HIV diagnoses among men who have sex with men (MSM) was over 44 times that of other

men and more than 40 times that of women. The range was 522-989 cases of new HIV diagnoses per 100,000 MSM vs. 12 per 100,000 other men and 13 per 100,000 women." The release also indicated "the rate of primary and secondary syphilis among MSM was over 46 times that of other men and more than 71 times that of women." (A copy of the said Press Release is now shown to me and exhibited hereto, marked B.B. #4).

France

In April 2011, Stéphane Le Vu and colleagues reported HIV surveillance data from France in the journal, Lancet Infectious Diseases. According to their data, in 2008 the rate of new HIV infections in MSM in France was over 100 times higher than in heterosexual men and over 14 times higher than in intravenous drug users (IDU) in that country. Their paper states in part: "After accounting for under-reporting, there were 6480 (95% Confidence Interval, 6190 - 6780) new diagnoses of HIV infection in France in 2008. We estimate that there were [actually] 6940 (6200 - 7690) new HIV infections in 2008, suggesting an HIV incidence of 17 per 100 000 person-years. In 2008, there were 3550 (3040 - 4050) new infections in heterosexuals (incidence of 9 per 100 000 person-years), 3320 (2830 - 3810) in MSM (incidence of 1006 per 100 000in person-years), and 70 (0 - 190) in IDUs (incidence of 86 per 100 000 person-years). Overall HIV incidence decreased between 2003 and 2008 ($p<0{\cdot}0001$), but remained comparatively high and stable in MSM." (A copy of an abstract of the said journal article, entitled, "Population-based HIV-1 incidence in France, 2003-08: a modelling analysis", is now shown to me and exhibited hereto marked B.B. #5).

A recent series of articles

An edition of the Lancet.com entitled, HIV infection in Men Who Have Sex with Men, was published on July 20, 2012. The executive summary of the series of papers reads as follows:

> "Despite great progress in tackling the HIV epidemic worldwide in the past two decades, there is one population in which the epidemic continues to grow in countries of all incomes: men who have sex with men (MSM). This Lancet series explores the unique aspects of the HIV epidemic in MSM, showing that it is factors such as the biology of anal sex, the characteristics of MSM networks, and known behavioural factors that are driving the epidemic in this population. The Series addresses the unique challenges faced by black MSM around the world, and discusses initiatives that reduce infectiousness of HIV — such as treatment-as-prevention and pre-exposure prophylaxis—that could have a huge impact in curbing the HIV epidemic in MSM and other populations."

This up-to-date summary identifies the factors that interact and that continue to create special risk of contracting and passing on HIV among men who have sex with men and others who have intimate sexual contact with them. Prominent among these factors are "the biology of anal sex", the characteristics of MSM networks", "known behavioural factors", and "the unique challenges faced by black MSM around the world."

(A copy of said executive summary is now shown to me and exhibited hereto, marked B.B. #6.)

The majority of sexually transmitted infections caused by viruses are still incurable

Due to advances in knowledge and greater availability of a range of anti-microbial drugs, the majority of bacterial, protozoal and parasitic infections associated with sexual behavior are curable. In contrast, the majority of sexually transmitted diseases that are caused by viruses still cannot be cured. These include infections with members of the herpes virus group, the hepatitis type B virus (hep B), the human papilloma virus (HPV), the human immunodeficiency virus (HIV) and the human T-lymphotropic virus type 1 (HTLV-1). Controlling some of these diseases is more possible than before, but requires long-term commitment and is expensive and inconvenient.

Risk of cancer associated with some sexually transmitted infections

Some sexually transmitted viral infections are now known to lead to cancer. Infection with hepatitis B can lead to cancer of the liver. Infection with some strains of HPV leads to cancer of the cervix in women, cancer of the penis in men and cancer of the mouth and cancer of the anus in men and women. In the latter case, the occurrence of cancer of the anus is much higher proportionally in men compared to women.

Preventing sexually transmitted infections

The search for vaccines to prevent STIs continues. Vaccines are now available against hepatitis B and human papilloma virus. However, to date, a reliable and effective vaccine against HIV has still not been found.

With or without effective vaccines, it is vital for each country affected by sexually transmitted infections to understand the epidemiology[3] of its epidemics and to devise evidence-

[3] Epidemiology is the study of the distribution and determinants of diseases in the human population.

based plans for prevention, care, treatment and rehabilitation of affected persons. Successful implementation of national plans requires persons in the community to cooperate actively with the health authorities both in private and in public. The optimal approach must be comprehensive and participatory.

A combination prevention approach is optimal with or without STI vaccines

As part of a comprehensive national approach, all sexually active persons, including MSM, must be urged to take responsibility for behavior change that includes individuals delaying their sexual debut, reducing the number of their intimate sexual partners, getting tested for HIV and other STIs in relation to known risky exposure, learning and practising assertive skills in order to avoid coercive sex, disclosing the presence of an STI to prospective partners, using protective devices such as condoms during intimate sexual contact in situations where the possibility of transmission of STIs cannot be excluded, avoiding the use of mind-altering drugs – especially during or in temporal proximity to intimate sexual encounters, and eliminating behaviours that carry the highest risk of coming into contact with infections.

Successful programmes to stem the tide of HIV infections and other sexually transmissible illnesses must be comprehensive rather than piecemeal. Together with promoting individual responsibility, it is clear that environments that enable individuals to make and practice safe and healthy choices must be provided at family, community and governmental levels.

Much attention and effort has been given to promoting the use of physical barriers during sexual intercourse to reduce the risk of acquiring some sexually transmitted infections. Protection of this kind depends on the integrity of the physical device and the ability of the person using it to follow a strict ritual before, during and after penetrative intercourse. In addition, the use of condoms or other physical barrier devices does not always prevent trauma during vigorous physical interaction and trauma increases the risk of transmission of infection.

When persons anticipate participating in any variety of anal sex, the use of water-based lubricants is recommended. The purpose of these lubricants is to reduce the risk of trauma to the delicate lining of the anus and lower rectum. Water-based lubricants are recommended instead of oil-based lubricants because the latter cause degradation of latex condoms.

In a comprehensive approach to prevention of STIs, cooperation rather than conflict is critically important.

"Treatment as prevention"

Antiretroviral drugs, when used appropriately, reduce the quantum of HIV (the viral load) in the blood and tissues of the infected person. In addition to the beneficial effect on the individual who is receiving treatment, the reduced viral load reduces the risk of passing on the virus to other persons. In this way, effective treatment of HIV contributes to prevention of further spread of the virus. Therefore, it is recommended that all infected persons know their status and that antiretroviral drugs be made available and used according to international guidelines. When these recommendations are practised consistently as part of a comprehensive approach outlined below, the application of appropriate treatment contributes to limiting ongoing spread of HIV, hence the concept of treatment as prevention.

The economic cost of sexually transmitted infections to the community and the Government

The direct and indirect financial costs of sexually transmitted infections from both a personal and a Public Health or community viewpoint are of significance. In order to measure the direct economic costs of these infections, in 2004, a team from the United States Centers for Disease Control and Prevention carried out a study using data from 2000. The study was published in the journal, Perspectives on Sexual and Reproductive Health and was entitled, "The Estimated Direct Medical Cost of Sexually Transmitted Diseases Among American Youth." The authors concluded that "the large number of [sexually transmitted] infections acquired by persons aged 15-24 and the high cost per case of viral STDs, particularly HIV, create a substantial economic burden." (A copy of the report of said journal article is now shown to me and exhibited hereto, marked B.B. #7). Outside of the USA, governments around the world are currently facing the high direct cost of care and treatment of persons living with HIV and other STIs.

The indirect economic costs associated with these diseases have to do with loss of productivity and other lost opportunities. Loss of productivity is typically measured either by rates of absenteeism or by tracking job loss statistics. What is more difficult to measure, but no

less real in the worst cases, is reduced productivity due to the tiredness and loss of energy that accompany these serious illnesses.

CERTIFICATION

I, Brendan Courtney Bain, attest and certify that I understand my duty to the Court as set forth in rules 32.2, 32.3 and 32.4; that I have complied with that duty; that this report includes all matters within my knowledge and area of expertise relevant to the issues on which the report is given.

I also certify that I have been given no instructions by any party, by any person representing a party, or by any other person with respect to this report. The report represents my own opinions based on my professional experience together with information from research literature related to the matter under consideration. The opinions expressed in the report are mine and should not be attributed to any institution with which I am associated.

Respectfully Submitted,

Brendan Courtney Bain August 7, 2012