

Statement of the Joint Science Academies For the G8 Summit Canada, 2010



Health of Women and Children Innovation for Development

The Science Academies of the G8 countries, including the Science Council of Japan, announced their joint statements for the G8 Summit, Canada, 2010, as they have done annually since 2005. By gathering scientific opinions and insight, scientists in each country share these statements to help solve the problems that humanity faces today and recommend them to the leaders of the G8 countries.



Science Council of Japan
~Since 1949~



Joint G8 science academies' statement on Health of Women and Children

Magnitude and Importance of the Problem

Local Capacity

The health of families, communities and economies is inextricably tied to the health of women – yet every 100 seconds, a woman dies in pregnancy or childbirth somewhere in the world. Mother and child outcomes are closely linked.

Reducing maternal mortality is critical and is also a priority for improving child health.

There are less than 6 years left to meet the United Nations Millennium Development Goals (MDGs). The fourth and fifth are critical to this document.

Millennium Development Goals 2015

Goal 4: Reduce under five child mortality by two-thirds

Goal 5: Reduce maternal mortality by three-quarters

There has been some progress in global child health. Since 1990, deaths of children under five have declined. However it is estimated that 8.8 million children still die each year - more than 1000 every hour.

Progress to reduce deaths in pregnancy and childbirth by 75 per cent by 2015 has been similarly limited and the goal remains a distant target. Over 99% of the women who die do so in the developing world.

Specific Health and Disparity Issues

Maternal Mortality and Morbidity

The risk of a woman dying as a result of pregnancy or childbirth during her lifetime is one in seven in the poorest parts of the world compared with about one in 30,000 in Northern Europe. Maternal deaths cluster around labour, delivery, and the immediate postpartum period, with hemorrhage being the main medical cause of death; more than 80% are preventable. For every death in pregnancy and childbirth there are 16.5 cases of significant maternal illness or disability; maternal chronic ill-health seriously affects the health and quality of life of surviving children, who often depend on their mothers for food and support.

Perinatal and Neonatal Death

Each year, 3.2 million babies are stillborn and 4 million die in the first month of life – 99% of neonatal deaths occur in developing countries. Neonatal deaths comprise 38% of deaths in those younger than 5 years, and are the main barrier to MDG 4. Major immediate causes of death in the first month of life are preterm birth, asphyxia and infections. Proven, low cost interventions, including prenatal care, skilled care at delivery and community based postnatal care could decrease neonatal mortality by more than one half. Three-quarters of these deaths could be prevented at an additional cost of US\$1 per head.

Family Planning

Family planning improves maternal health by reducing unintended pregnancies and abortions, and impacts positively on resource availability. Inadequate spacing of children exacerbates major nutritional disorders and increases child mortality by precluding adequate nutrition during gestation. Provision of effective contraception for approximately 200 million women who have none would prevent 23 million unplanned births, 22 million induced abortions and 14,000 pregnancy-related maternal deaths each year. Quality education for women will improve family planning and child care.

Every year, 42 million pregnancies are terminated, of which about 50% are considered illegal under national legislation, performed by unskilled providers or take place in unhygienic conditions. Severe complications result; there are around 70,000 maternal deaths, more than 3 million reproductive tract infections, and almost 1.7 million cases of secondary infertility. Unsafe abortion accounts for 13% of maternal deaths.

Child Illnesses

Of 8.8 million children under the age of five that die each year, main causes of death from 1 month to five years are pneumonia, diarrhea, malaria, measles and HIV. These deaths are preventable with low-cost, evidence-based public health interventions, such as good nutrition and immunization. Still more deaths would be prevented by simple treatment when children are sick: for example anti-malarials, antibiotics, oral and rehydration therapy.

Maternal and Child undernutrition

The attribution of about one-half of child deaths and more than 10% of global disease burden to maternal and child undernutrition demonstrates the huge importance of these risk factors to health goals. Malnutrition in mothers accounts for substantial neonatal mortality and intrauterine malnutrition leads to adult disease: diabetes, hypertension, and dyslipidaemia.

HIV and AIDS

AIDS-related deaths remain a leading cause of premature death globally. Untreated pregnant women infected by HIV have a 30% chance of infecting their child. Without treatment, more than 50% of HIV infected children die before two years of age.

Gender Issues and Women's Rights

The failure to meet MDGs 4 & 5 is inextricably linked with poor progress in promoting gender equality and empowerment of women. Regions with high maternal death rates are characterized by disenfranchisement and marginalization of women. Gender inequality is propagated by a lack of access to education (reflected in low literacy rates) and thus an absence of women in positions that set opinion or policy.

Deficiencies in Knowledge Translation

Meaningful progress requires resources in two key areas: knowledge translation and implementation research. Evidence-based policy making has had a limited impact on maternal and child health policy and program development. The reasons for this are many: a lack of highly-qualified national researchers in the developing countries, a lack of high quality research programs and a severe paucity of research funding in maternal and child health issues. There is also too little research into how interventions or programs can be successfully implemented, and then successfully transferred to other areas.

Recommendations for the G8 Summit

Risks to maternal and child health are not confined to the developing world; vulnerable populations, wherever they exist, need to be targets of interventions that are generally simple and accessible, do not involve specialized technology and are cost-effective.

Intensified effort to improving maternal and child health is essential to attaining Millenium Development Goals 4 & 5.

- Funding for maternal and child health must increase. Governments and other organizations need to increase resources. Donors need to increase financial contributions in low-income countries to help fill the resource gap. There should be no user fees for basic health services such as delivery care. Immunization of children should be universal.
- Health facilities and staffing need strengthening. Increased access to prenatal, midwifery, essential obstetric and newborn care must remain the cornerstone of safer motherhood programs. Skilled emergency obstetric care must be accessible to all women who experience complications; research into most effective methods of delivering such care is needed. Support for community facilities should emphasize maternal and child health and also nutrition.

Health workforce strategies need to include plans to build a cadre of skilled birth attendants and community health workers to care for pregnant women and children. Developing countries should establish incentive programs to retain clinical

staff trained internally and repatriate former staff. Developed countries should be discouraged from actively recruiting trained individuals in healthcare from developing countries and encouraged to form health education partnerships.

- Strategies to improve maternal health should facilitate access to contraception services and measures to reduce unsafe abortion. Up to 40% of maternal and child deaths could be averted by providing access to these services. The use of modern contraceptives, sex education and appropriate child spacing should be fostered. Greater access to family planning would reduce population growth and impact favorably on resource availability. Accessible family planning services should be integrated with HIV/AIDS prevention services. Governments and inter/nongovernmental organizations must deal openly with unsafe abortions, and ensure appropriate and accessible treatment of women who develop complications.
- Initiatives to strengthen the health of women and children should be more effectively coordinated. The community shaping global political priority for the health of Women and Children has been fragmented. G8 Governments should work with international agencies to facilitate regional coordination mechanisms for women and children's health the main focus of which is achievement of MDGs 4 & 5.
- Policies which protect women and children from all forms of abuse, injury, exploitation and violence must be promoted. Harmful practices such as female genital mutilation should be eradicated. Misuse of technology of prenatal sex determination for aborting female fetuses should be condemned.
- Maternal and child health research needs strengthening, especially in knowledge translation. There is a lack of research into how interventions or programs including translational and communication strategies can be successfully implemented, and then successfully transferred to other areas. Capacity building including interdisciplinary centres of, health science and innovation should be encouraged in all regions. Health information and education programs are needed to disseminate acquired knowledge; this will require enhanced organizational infrastructure.



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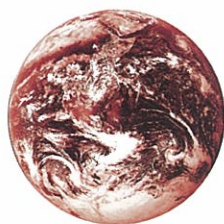
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Joint G8 science academies' statement on Innovation for Development

The role of Science, Technology and Innovation for Development in Africa and other developing regions

Local Capacity

A substantial fraction of the economic growth of the 20th century derived from advances in science and technology and their application in health, agriculture, information and communication technologies, energy, and many other sectors. The ability of a country to benefit from these advances and to secure a decent standard of living for its people depends on the capacity of its people and its institutions to innovate, i.e. to master the adoption, adaptation, and advancement of existing technologies, as well as the creation of new ones. Innovation refers to the full range of changes, large and small, used to achieve desired outcomes. Innovation often results from basic research that can lead to groundbreaking discoveries and inventions.

In parallel with efforts to promote economic growth and wealth creation, developing countries face an increasing number and range of major challenges, such as emerging or re-emerging diseases, lack of access to safe drinking water and other environmental challenges, and in many cases an unprecedented number of young people who need education, training and opportunities.

Innovation will be essential in meeting all of these goals and challenges.

Human Resource Development

The knowledge, skills, and motivations of people are the ultimate basis for social and economic development. The breadth of the challenges facing developing countries makes it imperative for them to simultaneously address all of the major aspects of human resource development: moving toward universal and effective primary and secondary education; enhancing advanced education and training, especially in areas of national importance, and connecting the content and experience in the educational and training systems with workforce needs in both the private and public sectors.

Effective teachers, trained beyond secondary level are critical for high quality primary and secondary education. Innovation is essential for the entire human resource development sector: and the need is for people who can continue learning throughout their lives. Primary education can start to develop those skills that the workforce needs to be innovative in all sectors, including the informal sector that is often a major part of developing countries' economies. Innovative approaches are critical to create jobs, rather than just fill jobs that may currently exist.

Partnerships can be especially valuable as developing countries struggle to meet the needs for education, and for educators. In particular, networks of educational institutions in Africa should work together to combine training capacities and information resources, with support from G8 countries and in cooperation with universities in G8 countries. These partnerships could produce increasing numbers of the desperately needed high-quality, up-to-date faculty for African universities and teachers for the elementary and secondary school systems.

Recommendation: G8 and other countries should increase support, both direct, and via partnerships with their educational institutions, for education and training programs in Africa and other developing regions, including:

- Innovative primary and secondary science education programs such as inquiry-based education, to improve effectiveness;
- Regional networks of research and training institutions in developing countries, focusing on priority fields of those countries;
- Innovative modes of support for faculty and programs of universities of developing countries;
- Training in entrepreneurial skills and internships relevant to the public and private sectors;
- New learning technologies adapted to the specific needs of developing countries, such as e-learning in Africa;
- Merit-based decision making, such as peer review, and competitive approaches for education, training, and technical programs;
- New strategies to minimize the negative impacts of brain drain.

National Development Strategies, National Innovation Systems and Science and Technology in Africa and other developing regions

National development strategies, reflecting local realities often operate in a changing and challenging global context, and thus must themselves be innovative and adaptive, rather than static. Such national strategies need to be broadly understood and supported by a wide range of individuals and institutions.

National strategies need to develop the right balance between programs driven by government planning for public needs and the dynamic decision-making of the private sector. A successful innovation culture requires a continual process of consultation between public and private sectors to enable them to work together effectively. This is as true for modern service, manufacturing and mining sectors as it is for smallholder agriculture and microenterprise.

National innovation systems need to implement multi-pronged strategies that include education and training, research, development and innovation, as well as supportive government programs and infrastructure. Governments also need to appreciate the fundamental value of basic science in attaining the innovation goals.

Recommendation: G8 and other countries should

- Act on the principle of basing cooperative and support programs on national development and innovation strategies developed and adopted by developing countries;
- Align their own cooperative and development assistance programs to build capacities of individuals and institutions in developing countries. Of particular importance is building local capacity for making and implementing informed decisions, and for managing the diverse contributions of official and non-governmental international assistance;
- Support the strengthening of universities and establishing centres of excellence in basic and applied science, engineering, and in areas of high priority for national innovation systems of developing countries;
- Assist developing countries in improving access to knowledge resources via ICT to empower citizens to accelerate progress in meeting the goals and objectives of national innovation strategies.

Commercialization of Scientific Discoveries and Inventions to Build Prosperity

Science is a fertile source of discoveries and inventions for commercial innovation. Extensive translational activities are often needed before the benefits of science can be reaped by societies. In order to strengthen commercialization, many

countries have introduced legislation over the last two decades which has given universities and publicly financed research organizations the right and the obligation to manage intellectual property, often via technology transfer offices. Universities and research institutions also support commercialization by establishing entrepreneurship centres and providing seed funds for financing early-stage startups. Incubators and research parks are commonly found in developed countries, and developing countries are increasingly using these concepts, or experimenting with them.

Developing countries face significant challenges in harnessing the fruits of new knowledge and technologies. Transferring innovations often needs extensive adaptation. Foreign direct investment can serve as a powerful contributor to building national scientific and commercial capabilities. Commercialization models built on entrepreneurial activity are valuable in getting multinational firms to locate in a developing country. Participation in global networks of entrepreneurship centres, and access to venture capital are key elements that can empower developing countries to build their own innovative capacities.

Recommendation: G8 and other countries should

- Ensure that policies of intellectual property protection and commercialization reflect the needs of the developing countries;
- Help developing countries define and develop the regulatory and incentive systems to promote innovation;
- Encourage the development of collaboration between research institutions and industries for the promotion of technology and knowledge transfer;
- Support the dissemination of best-practice models. Experimentation will be required to find solutions that best fit local situations.



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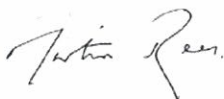
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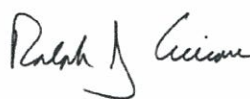
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