Introduction & Background

The Indian Council of Medical Research (ICMR), New Delhi and the Canadian Institutes of Health Research (CIHR), Ottawa expressed a common interest for cooperation for research in health research areas of common interest. This interest was formalized through the signing of a Memorandum of Understanding (MoU) by Prof. NK Ganguly, Director General, ICMR and Dr. Alan Bernstein, President, CIHR on 13th January 2005 in New Delhi, INDIA. The major research areas identified in the MoU were as:

1. Lifestyle Diseases
2. Public Health
3. Disease Surveillance

The activities for fulfilling these objectives could be exchange of Scientists, scientific information, technical data, publications etc. through lectures/workshops/seminars. A Joint Steering Committee consisting of Members from ICMR and CIHR was created to guide and monitor the implementation of the MoU through established mechanisms.

In October 2006, an ICMR delegation of experts led by Dr Bela Shah, Head, Division of Noncommunicable Diseases, ICMR visited CIHR and several Canadian institutions and held discussions with key investigators in the identified research priority areas. Childhood obesity was one of the areas in which experts from both countries desired to work together and organizing a collaborative workshop in India was identified as a starting point.

In May 2008, Dr Michael Kramer, Scientific Director, CIHR- Institute of Human Development, Child and Youth Health (IHDCYH), Montreal contacted ICMR to explore the possibility of organizing a workshop on childhood obesity in India. Through deliberations, it was agreed that a workshop on “Childhood Obesity and Noncommunicable Diseases” would be held on 14-16th January 2009 in India, wherein a delegation of Canadian and Indian experts would be invited to participate and identify a research agenda for planning future collaborative research proposals.

Several rounds of teleconference discussions were held by the workshop coordinators from CIHR (Dr Michael Kramer and

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Dr Anne Cécile Desfaits) and ICMR (Dr Bela Shah and Dr Prashant Mathur). Experts from both countries provided their inputs. The agenda was finalized during the visit of Dr Prashant Mathur to Montreal in November 2008. It was agreed that clinical and therapeutic approach would not be included in the focus of the workshop and collaborative research program. Instead, the focus would be on on the causes and prevention of childhood obesity, for which four theme areas were identified:

1. Epidemiologic transition & its consequences
2. Early origins of obesity
3. The obesogenic environment during childhood and adolescence
4. Public health interventions to tackle the obesity epidemic

At the inauguration function held on 14th January 2009, Dr NK Arora (INCLEN Trust, New Delhi) and Dr Laurette Dubé (McGill University, Montreal) delivered keynote addresses on "Fundamental drivers of optimal weight, shape and health: A non-communicable diseases perspective". Dr VM Katoch, Secretary, Department of Health Research & Director General, ICMR gave the inaugural address and emphasized on collaborative research in areas of mutual interest so that both partners benefit.

During the next 2 days, introductory talks were given on each of the identified themes of the workshop by speakers from Canada and India. Two concurrent working group sessions were held (as per agenda enclosed) in which the participants discussed the available evidence and identified important research issues. The working group recommendations were presented and discussed in plenary sessions and were modified accordingly. The representatives from ICMR and CIHR held an in-house meeting to discuss the operational issues in implementing the MoU. It was agreed that based on the recommendations of this workshop, a joint call for proposals will be posted in both countries, wherein collaborative research projects can be submitted from any interested investigator on either side, and not just restricted to the participants of this workshop. ICMR and CIHR will fund their respective investigators. A mutually agreed-upon mechanism for monitoring these projects will also be put in place. This workshop report should facilitate the investigators in developing their projects.

The workshop closed with thanks to all participants and the organizers.

At the Inaugural Function of the Workshop, 14th January 2009

Left to right: Prashant Mathur, Laurette Dube, Bela Shah, VM Katoch, Michael Kramer, NK Arora

Dr VM Katoch, Secretary, Department of Health Research, Govt. of India & Director General, ICMR welcoming the participants of the workshop, 14th January 2009

KEYNOTE ADDRESSES

Fundamental drivers of optimal body weight, shape and health: A Noncommunicable disease perspective

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Lifestyle diseases like obesity are outcome of complex interaction between human biology, behavior and society. The complex causal web for obesity developed by Foresight Initiative in UK has identified various domains; physiology modified by food consumption, physical activity behavior, psychology of the individual, which in turn are influenced by food production, its availability and the environment (built environment, social psychology and policy).

The data presented was from SRS-Survey, industry research and from specific Ministries of Government of India. This discussion focused on the drivers of body weight, shape and health in the Indian context.

Food Consumption Pattern: Caloric consumption in India has reduced in both rural and urban areas over last 30 years. In the states with high Human Development Index (HDI > 0.65) people have higher per capita consumption (1.5-2 times) of milk products, sugar and fat as compared to those residing in states with low HDI. It appears that in both urban and rural areas, changes in food consumptions pattern are more a reflection of economic class rather than the place of residence of the people.

India is currently seen as a mass market for food products. Compared to the neighboring countries, in India the demand for milk products vegetables and fruits is likely to rise significantly by 2025. Market research on purchase of consumer products suggest that by 2015 the beverages and processed snack food purchase is expected to be doubled. The Indian food industry, especially the informal sector is not regulated about the quality of food. Several traditional Indian fast foods have high trans-fatty acid contents. India is one of the largest importers of palm oil and provides large subsidy on palm oil, influencing the price and consumption.

Urbanization is growing consistently over the years and so is the motorized transport mode. The worrying part is gradual erosion of pedestrian paths by the roads and parking lots to accommodate the increased vehicular load in major urban centers.

Media: Almost 50% of advertisements during children's program on television are related to food products. There are no definite food standards regulations or advertising or marketing regulation in India.

Education: Indian children are burdened with the competition for

academic excellence at the cost of physical activity. A significant proportion of the schools are ill equipped to promote structured physical activity. In the residential areas also there is insufficient scope for play of the children.

Biology: The Indian newborns, children and even adults have higher body fat compared to the Caucasians of similar body weight or even lower weight. This makes us biologically more prone for the body fat related diseases.

Policy Dilemma: Over the years proportion of low birth babies has stagnated at about 30%. Almost half of our children are stunted and under weight. This puts the policy makers in a dilemma for formulating food and nutrition policy tackling the whole spectrum of nutrition problems.

Conclusion

Biology (gene) does not change over short time span, but the emergence of the obesity and other chronic diseases force us to think about environmental drivers of body fat. The world is moving towards high technology driven lifestyle, which is unlikely to roll back. Every individual in the society is exposed to these influences willingly or unwillingly and will experience the consequences even unknowingly. A systematic multi-sectoral approach with population health as a key outcome is urgently required to influence policy and influence the emerging epidemic of obesity and other chronic diseases.

The keynote address laid out the foundation of an approach to childhood obesity that see a complex interplay between biology, behavior and environment as both causal root to the pandemics and the way forward to curb its progress. This has been the scientific anchor of a series of knowledge-to-action think tanks on childhood obesity hosted at McGill University (www.mcgill.ca/healthchallenge). These have harnessed the world's best minds and leading organizations in health and nutrition, agriculture, education, urban planning, finances, marketing, and economics, to build synergy among business, markets, government and civil society to fight childhood obesity in developed and developing countries.

The presentation reviewed concepts, best practices and novel frameworks that are critical in creating environmental conditions that don't present too much challenge for biology and support healthy choice at the individual level. These include:

1. Interventions targeting behavioral changes as the individual level
2. Societal action to improve professional judgments and strategic choices made by school, health, agriculture, business and other organizations in social and economic domains,
3. Choices of policy instruments made by governments to enable innovation and action by individuals and all actors in society

Conclusion

Develop and synthesize through systems analysis, knowledge that will drive policy in health and economic domains and inspire social and business innovation that can help reach the balance of environmental opportunities and constraints that makes health the easiest and most sustainable option for individuals and society alike.

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