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**Preparing the end of the beginning for NCDs
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Mr. Chairman, Professor Moodie, ladies and gentlemen:

My first words must be ones of thanks to Professor Brown, Professor Moodie and the Nossal Institute for inviting me to give this Nossal Oration. It is an honor which I will always cherish, not only because of the respect and admiration I have for Gus Nossal, but also because of your generosity in allowing me to address what has become a passion for me—the noncommunicable diseases (NCDs) and the possibility of addressing them globally in a sustainable way.

I met Gus Nossal first when I was chair of the PAHO Advisory Committee on Medical Research and he was a member of the WHO Advisory Committee on Medical Research. Although Gus is not a small man, it was rather the size of his personality and the breadth of his vision that really impressed me. At that time he was already a world renowned scientist and was lending his formidable talents to creating a program of research in tropical diseases. A paper which he presented in 1976 on “*the role of biomedical research in the overall strategy of the special programme for research and training in tropical diseases*”, gives some flavor of the approach he was taking to advocate for the application of the best science to the infectious disease problems in the tropics. He quoted Julian Huxley. “*Science always has its two aspects, its intellectual aspect as knowledge and its practical aspect as control . . . every science arrives at a stage during which it makes its main broad contributions to practical human affairs. Biology is clearly on the verge of such a phase.*” And he went on to describe the advances in the control of the major infectious diseases, but was prescient enough even then to voice his concern for the noncommunicable diseases thus:

For the residual major killers of the developed world - heart and arterial diseases, cancer and chronic degenerative diseases - research has so far produced only partial answers, but massive programmes of attack on them are underway in many countries.

* The Sir Gustav Nossal Global Health Oration, Melbourne, Australia, 30 August 2011

This evening I wish to address this attack on these residual killers and the degree of completeness of the answers now available to us. Actually we know that they are no longer residual, but occupy first place in the world as a whole.

I have followed Gus Nossal's involvement in a number of areas and am taken by how he exemplifies the thesis of one of my gurus- Harland Cleveland- that if persons really develop, they pass through three phases. First there is the phase of the generalist who knows very little about anything, and then they become specialists because they acquire impressive knowledge about a specialized area, and then genuine development makes them generalists again when they apply the honed talents of the specialist to the wider, important problems of humankind. Gus Nossal has clearly followed this and one cannot help but be moved by his pronouncements on some of the world's real problems. In an address on the launch of the "Australian people", against the backdrop of the horrible occurrence of 9/11, he referred to the fact that the deep-seated root cause of this individual revolution was because *"the benefits brought through science and technology in terms of health, education, housing, material goods and lifestyle have been shared so unequally around the world"*

It is this inequity in terms of morbidity and mortality for NCDs that has driven so many of us to champion global attention to the problem. These diseases have not just appeared. We have known for decades of the evolution of the health transition. I recall vividly having lunch with Abdel Omran in Washington in the early eighties when he spoke with feeling about the inevitability of the degenerative and man-made diseases. He had described in a seminal, classic paper, *"The epidemiological transition: A theory of the epidemiology of population change"* which embraced the passage of populations from the stage of pestilence and famine through the stage of receding pandemics to the stage of the degenerative and man-made diseases. Initially he posed a sequential succession, but now we know that populations have to concern themselves with more than one stage simultaneously and many countries now have to bear the double burden of the communicable and the noncommunicable diseases. But it was clear even then that the NCDs would grow in importance not only because the communicable disease would recede. The cry that mankind had conquered the communicable diseases was very premature. The increase in importance of the NCDs would be absolute and not only in relation to a decrease in communicable diseases.

If the appearance and prominence of the NCDs were predictable, then why would it take so long for them to be recognized widely as a global problem and not only as the problem of the rich countries of the north? The reasons for this are many and perhaps one of the most persuasive is that they were seen as issues that concerned only or primarily the health community and were essentially a technical health challenge. It is clear that this is not so and the way forward in dealing with these must involve their elevation to being a political priority. This has now been achieved and although the road to the High Level Meeting in New York in a couple weeks has been a fascinating and sometimes rocky one, at least we have reached. Many of us are now concerned about how to maintain the attention of the world and see practical and programmatic outcomes from the commitments we hope the politicians will make in New York. The moment and the momentum must not be lost. I am therefore heartened by the actions of your "Australians for Global Action on Non-Communicable Diseases" which has *"Pledged to work constructively with the Australian Government and civil society to ensure robust and*

lasting outcomes can be achieved at the UN High Level Meeting on NCDs.” This evening, I wish to frame the achievement of those robust and lasting outcomes in the words of Winston Churchill. It was November 1942 and the Allied forces had defeated the Germans in the second battle of El Alamein. This was a great victory in which Australians played a significant role and was considered one of, if not the turning point of the war. Churchill caused the church bells in England to ring and in a famous speech in London referred to the victory in these terms. *“This is not the end, it is not even the beginning of the end, but it is, perhaps, the end of the beginning”*. I cast this HLM as the end of the beginning and we must strain every sinew to ensure that it is the beginning of a sustainable global effort to prevent and control NCDs.

One indication that we are indeed firmly at the end of the beginning is the almost universal rejection of some of the more egregious myths that hitherto surrounded NCDs. There was the myth that these are diseases of the rich developed countries; they were diseases of the elderly and an inevitable consequence of the success in raising the life expectancy. They cannot be prevented or controlled and there are no cost-effective instruments at our disposal. Well, we know that the major burden of these diseases is in the developing countries. WHO reports that of the 57 million deaths in 2008, 63% were from NCDs and of these, almost 80% occurred in the low and middle income countries. NCDs are diseases of the poor. Their risk factors are highly socially determined, as for example smoking rates are higher among the poor and the age standardized mortality rates for NCDs are higher in the poor developing countries than in the developed ones. We also know that about one quarter of the deaths from NCDs occur in persons below the age of 60years. And we do have cost effective measures for control. For example, tobacco control and the reduction of dietary salt to 5 grams per day or less would prevent almost 14 million deaths over 10 years in the low and middle income countries and secondary prevention of cardiovascular disease with the use of readily available medication is highly effective.

But if this beginning is to be sustained there are some concerns that have to be addressed. First we must be saved from what I call the curse of the contained crisis. One of the deadly threats to major public health movements is popular perception that the crisis is now contained and global attention can be shifted elsewhere. Indeed we do have examples of major public health problems almost disappearing from view. One such is the problem of population, and I have had the opportunity to examine it recently in relation to the history of family planning and reproductive health. In the decades of the 60s and 70s there was no doubt that it was population that was the major driver of many public health issues and we saw tremendous political attention as well as funding available to address that critical problem. The United Nations Population Fund (UNFPA) was created as the primary organization within the United Nations (UN) system for addressing population issues. But over the last 2 decades there has been the perception that the problem is solved or on its way to being solved. The fertility rate in the developed countries fell from 5 children per woman in the 1950’s to half that figure today although in the poorest countries such as some of those in sub-Saharan Africa there are rates as high as 7 per woman. The crisis has been contained and the result has been a decline in international interest in population issues. The analogy would be that if because of increased attention to NCDs we saw a decrease in morbidity and mortality, the world would lose interest in NCDs because the crisis had been contained. There might not be the soul or the funding for the sustained effort for the prevention and control programs needed globally to achieve the kinds of reduction that will be

seen in the developed countries. Thus, there is the need for continued vigilance to see interest maintained and the burden of NCDs fall and continue to fall globally.

We must shut our ears to the siren songs of those who do not appreciate the reach and power of pluralism and the need for it in the efforts to prevent and control NCD at the population level. You will hear some purists or ideologues denouncing one or other part of the state and not appreciating that the private sector and civil society have firm place and status in the modern pluralist state. There are those who see all of the private sector as inherently against the public good and do not accept that it is perfectly possible to make a profit and at the same time do well in the public sphere. I contend that one of the problems of establishing the kind of global governance in health that is essential to address the problem of NCDs, is that there is unwillingness to accept that the private sector can have a genuine wish to prevent and control these diseases, both for altruistic reasons as well as because of concern for the public good. All industry cannot be painted with the tar from tobacco. There is a middle ground that is being occupied by many in the public sector who espouse the view that the private sector may participate in the execution, but must have no voice in the elaboration of any policy, as the inherent conflict of interest makes it impossible for it to elaborate good public policy. I would contest that view and hold that we must engage the private sector, for example the food industry and those concerned with food and nutrition. This must not only be at the level of the international organizations such as FAO. But in the final analysis, the government has the power in the use of its three instruments of legislation, regulation and taxation to obtain the appropriate response from the private sector.

I reject the argument that the responsibility of government to change the enabling environment so that populations adopt healthy practices is an incursion of a nanny state into the lives of citizens. I know there are major political divisions on the regulatory role of government, but I always note that the person accepted as one of the fathers of modern capitalism –Adam Smith- postulated a central and major role for government in producing his state of “universal opulence”. This intervention by government is necessary not only in economic matters, but also in social affairs.

But perhaps one of the more important reasons for government intervention both nationally as well as through international accord is for reasons of equity. I believe that one of the major reasons for international or rather intergovernmental action in NCDS is because of the need to reduce global inequity. It is this reduction of global inequity that is at the heart of the new found interest in global health.

Thus, to ensure that this beginning is durable, there must be vigorous action by governments individually and collectively. There is consensus around the actions that governments should take and the recent series of articles in the Lancet set these out clearly. I have said, perhaps mischievously, that I wish to see the political leaders exercise leadership by remembering the following. 4 x 4 x 4. I wish them to focus on the 4 common risk factors for 4 major NCDs by adopting 4 critical lines of action. Let me be clear. It is not that there are not other NCDs beside cardiovascular disease, diabetes, cancer and chronic respiratory disease. But these four are responsible for the greatest share of the morbidity and mortality from NCDs and also they share common risk factors- tobacco, diet, physical inactivity and the harmful use of

alcohol- making public health programs to address them more feasible. The four lines of action are addressing the risk factors, giving priority to reduction of tobacco use and reducing salt intake, providing essential medicines and technologies for the common NCDs, strengthening and adapting the health systems to accommodate the increased emphasis on chronic conditions and establishing a system of monitoring, evaluation and accountability.

The manner and extent of government involvement and leadership continue to be discussed. The rationale for a public role in NCD prevention and control was clearly set out by Adeyi and his colleagues at the World Bank as a basis for involvement of that institution in policy support to countries. Government should be involved in prevention in order to supply public goods such as information and partially public goods that have high externality content. Information will not be supplied by the private markets and therefore is a prime responsibility of the public sector. Externalities with regard to the risk factors are clear for tobacco and alcohol and ideally are addressed through taxes. With regard to provision of services for NCDs, the role for government is to ensure that private markets work efficiently and equitably, and also to assist the poor in procuring necessary services which they cannot afford. Government concern for the economics of NCDs also extends to the prospect of high age specific expenditure constraining fiscal space.

In this pluralist milieu there is a fundamental role for civil society and let us note that non-governmental organizations are not the sole members of our civil societies. We count the various professions and other associations and organizations, the media and many other groups. It has been a salutary experience to see the activism of the NCD organizations which have come together to form the NCD Alliance with the clear mandate of promoting the prevention and control of NCDs broadly.

I have referred to pluralism within the state, but there is a need for recognizing and stimulating more coordinated action among the many international organizations in the UN system and encouraging them to bend their minds to the problem of the NCDs. It seems strange that more has not been heard from FAO when it is obvious that the issue of nutrition looms large on the NCD agenda. Interagency meetings have discussed NCDs, but the resulting action that could coordinate efforts at country level has not come to my notice. The possibility of preventive and promotive activities in the workplace must have enormous potential for NCD prevention and control. Therefore it would seem logical to have the ILO involved in discussing how its three partners might work together to address NCDs. I hope that the member states of these organizations, having committed themselves to address NCDs comprehensively will urge for more coordination among the UN agencies and the International Financial Institutions.

I am sure that if Gus Nossal were asked about the important steps to ensure that the beginning was appropriately planned, he would emphasize the need for relevant research. There has been and is considerable research effort on the many facets of NCDs which has given confidence in the evidence presented for action now, but obviously there is continued need for more and better evidence. WHO has prioritized 3 major areas for attention. These are:

- Intersectoral and multidisciplinary research to understand and influence the macroeconomic and social determinants of NCDs and exposure to NCD risk factors;

- Translation research and health systems research for global application of proven cost-effective strategies;
- Research to enable expensive but effective interventions to become accessible and used appropriately.

We also saw the launch 2 years ago of the Global Alliance for Chronic Disease Research, a consortium of the world's major research councils, in which the Australian Medical Research Council participates.

There are two research areas to which I am particularly attracted. The hypothesis that fetal programming plays a role in the future development of disease is now widely accepted and the impact of early development on the subsequent appearance of the biological risk factors for NCDs, such as obesity, is an area of tremendous research potential. It is becoming clearer that the genetic contribution to these biological risk factors is relatively small, but the epigenetic modifications as a result of the early exposure to environmental factors can be a major determinant of future disease. So the appearance of NCDs in adults represents the accumulated impact of lifetime exposure to environmental insults. The long term effects of exposure during the first 1000 days of life are critical and offer possibilities for intervention especially in the developing countries. Of immediate practical significance is the attention to nutrition during this critical period. Thus, I envisage evidence for possibility of control coming from research on both phenotypic programming as well as what is described as genomic plasticity, referring to the possibility of genes being expressed differently depending on environmental influences. I am sure Australian scientists are or will be active in this area.

The other area relates to research that is more of a political-sociological nature, and it is unfortunate that many of us in the health community are not aware of developments in this field. If we are to keep NCDs on the political agenda then it is important to understand how this gets done. One of the attractive theories is that states get socialized into accepting and implementing certain policies. States accept policies often because of interaction with other states in the international arena, and many policies are created and maintained through the process of international interaction. There are critical global actors in influencing this socialization and in the case of the NCDs these include WHO, the World Bank and others. Thus it is important for countries which value certain agendas, in this case NCDs to be vocal in these international organizations and seek to maintain the socialized interest.

The establishment of an issue as an important one that should be on the national and international agenda depends on several factors, but there are two which my experience shows to be critical. The first is described by Shiffman as political entrepreneurship. This represents the strong influence of individuals and organizations which are consistent and persistent in championing a particular issue. The other takes advantage of what are described as "focusing events". These are events that attract notice from a wide range of state actors. We have a major focusing event in the UN HLM. The preparation for the beginning involves mobilizing the appropriate entrepreneurs before and after the focusing event. My experience and observation in the Caribbean with respect to the political interest in NCDs has taught me the critical importance of these two factors.

What might be the reaction to ensure that the focusing event did lead to a propitious beginning that was parlayed into subsequent action? The ideal would be to see activities at the national and global levels give substance to the commitments made. The important actions and activities have been spelled out in the WHO Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Disease and also in the recent Lancet series on NCDs, but I would emphasize some of them as urgent.

One urgent and important outcome from the UNHLM must be the establishment of a global goal and we advocate that the world should set itself the goal of reducing mortality from NCDs by 20% by 2025. This is measurable and achievable, and I trust that those of you here with influence will press hard for its adoption.

At the national level, I would like to see national Commissions or analogous bodies on NCDs. These Commissions should involve all the relevant stakeholders and be advisory to, but independent of the government. I would hope to see a national agenda ratified at the political level, one that embraced for example the necessary legal actions for full implementation of the FCTC and a firm decision to reduce population intake of salt to 5 grams per day. The monitoring and evaluation and accountability mechanism should be a priority and scorecards established to monitor the degree of progress in the commitments made. I would like to see coalitions of interested NGOs such as your “Australians for action” in every country.

At the international level, I see WHO exercising the leadership assigned by the UNHLM and by virtue of its pristine mandate, but that leadership should involve mobilizing other UN Agencies in support of intersectoral plans and programs. I look forward to the business community mobilizing on a global scale in support of the UNHLM, bringing to bear the attributes that are peculiar to business. I trust that the NCD Alliance will grow in its scope and reach and civil society internationally will never be the same again—that they will be bold and vigorous in their agitation for the fulfillment of the commitments. They have the power to stir the popular and the political blood. The challenge will be how to sustain the energy that is necessary to maintain the web of connection that has been successful so far.

Is there a particular role for Australia? Yes. Australia could be a leader in several ways, and I will hazard a few. It could decide because of self-interest, because of the magnitude of the problem nationally, because of pressure from civil society and because of its well recognized commitment to international action to be one of the entrepreneurs of which I spoke. This means being a reliable advocate in the various technical and political fora for attention to NCDs. It has a natural geographic sphere of influence and could stimulate those in that sphere as well as others to include NCDs in their development agendas and could set a shining example of conforming to the Paris Declaration by aligning its own development assistance with those national agendas. Finally, it is one of the world’s most urbanized societies and could be a demonstration of how this phenomenon can be a positive rather than a negative force for addressing the problem of NCDs.

Mr. Chairman,

Gus Nossal is a scientist and a humanist. I am sure he has influenced enough younger Australians to be equally committed to those two orientations. If he has, then I would be sanguine that his disciples will be sensitive to the nature of the challenge of NCDs and have the courage and capacity to prepare for the beginning of engagement for their prevention and control both nationally and globally. But the world obviously has many problems, and I am always reminded of the words of Tagore:

"Fate has allowed humanity such a pitifully meager coverlet that in pulling it over one part of the world, another has to be left bare."

We can only try to see that the coverlet remains over the mega problem of NCDs for some time yet.

M. Chairman, the motto of your University is "*Postera crescam laude*"—we shall grow in the esteem of future generations. I think future generations will judge us harshly if we do not seize this opportunity to address the problem of the NCDs.

I thank you.