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1 **Background**

2 Developing countries like Nepal are experiencing an unprecedented burden of non-
3 communicable diseases (NCD) (1), with NCD attributing 60% of disease burden in Nepal (2).
4 The major metabolic/biological risk factors driving the NCD epidemic include clinical
5 hypertension, elevated blood glucose, and abnormal blood lipids (3-5). These metabolic risk
6 factors are amplified by interaction with broader social determinants (behavioural,
7 environmental and socio-political factors) disproportionately affecting poor and vulnerable in
8 developing countries (5-7). In this commentary, we highlight systemic challenges for
9 addressing NCD through primary prevention in Nepal especially in the light of Nepal's recent
10 related policy and programmatic efforts. We further recommend that Nepal could accelerate
11 preventative action against NCD and their social determinants through two key actions:
12 structural reform at policy level for coordinated actions and strengthening community-based
13 health care delivery at implementation level.
14
15 **Systemic challenges for NCD prevention in Nepal**

16 Within the health system, curative services have gained more priority than prevention with
17 increasing budgetary provisions in hospitals, patient care and development of clinical human
18 resources (8). Though the provision of limited partial funding to the poor and destitute from
19 public accounts for treatment of limited NCD, namely cancer, kidney disease, heart disease,
20 Parkinson's and Alzheimer's disease and head and spinal injuries (9) is commendable, it is
21 not helping the urgent need for shifting toward primary prevention approaches. Importantly,
22 one of the key NCD policies, the *Multisectoral Action Plan for Prevention and Control of*
23 *NCD (MAPPCN) 2014-2020,* failed to set up a functional and compelling policy structure for
24 accelerated action against NCD and their social determinants ***(Figure 1)*** (10). The Curative
25 Services Division, a division within Ministry of Health with a primary role for improving

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curative services in public hospitals, is proposed as the main coordinating body for NCD prevention. This raises questions about whether the system is still in the grip of a medical model paradigm where the system considers NCD as something to be addressed by a curative services agenda (tertiary prevention) and diverts funding needed for primary prevention of NCD in Nepal.

Without an appropriate system structure for primary prevention of NCD, significant policy level momentum including tobacco control initiatives are losing ground under the current structure which is already suffering some early setbacks (11-13). Any efforts on NCD prevention are further constrained by budget limitations and scarcity of human resources. The existing community health workers are of limited scope in NCD prevention and control unless adequately trained. In 2016, the government initiated the Prevention of Essential Non-communicable Disease (PEN) programs in two districts of Nepal but again the question will remain how effectively the program will coordinate with other sectors to address the broader social determinants. In addition, lack of accountability, corruption and poor management are major causes of inefficiency in health and social programs (14). This also poses threats to future NCD programs. In a country which spends less than one percent of its budget on NCD (15), inefficiency, as much as 40% estimated by WHO (16), can deter significant investment from prevention and control efforts.

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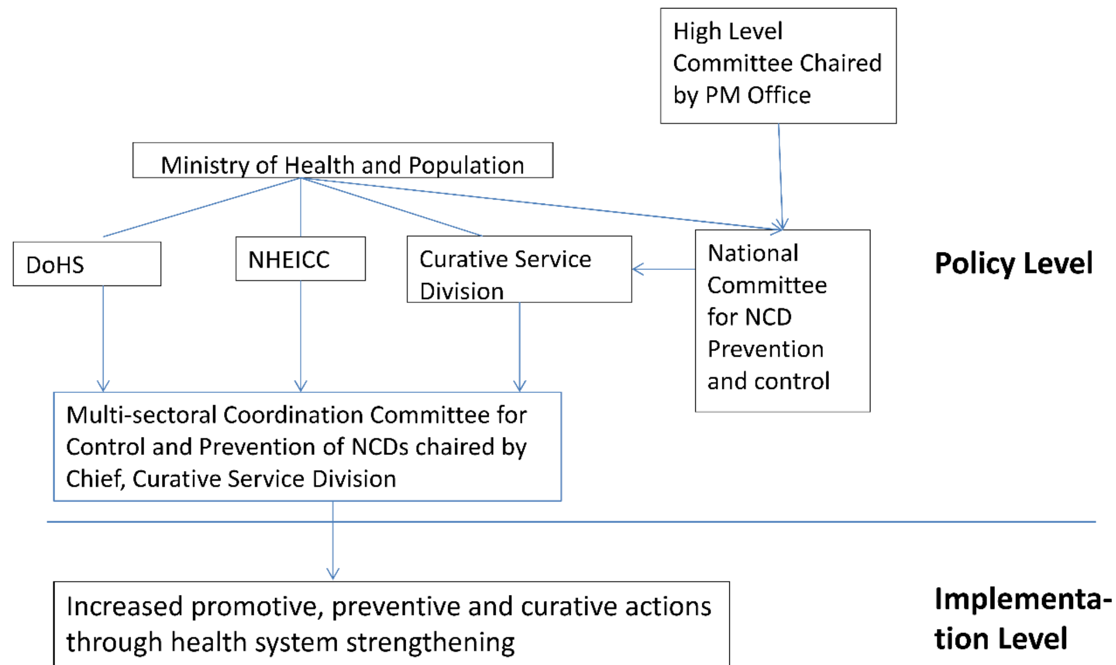

45

46 *Figure 1: Policy structure envisaged by the MAPPCN 2014-2020*

47

48 **Future direction of NCD prevention and health promotion**

49 The NCD epidemic in Nepal demands a paradigm shift from a medical model to a primary
50 prevention model focusing on social determinants of NCD. Countries in the South are already
51 leading the way (17-22). South-North collaboration and technology transfer can help low and
52 middle income countries like Nepal to build up capacity to prevent, control and monitor
53 NCD. We recommend that Nepal should establish an autonomous "Centre" as the key
54 structural reform for effective multi-sectoral and coordinated actions for NCD prevention and
55 control ***(Figure 2)***. A powerful centre is essential to capitalize on the growing recognition of
56 the NCD agenda at the policy level (23, 24). The key social determinants of NCD in addition
57 to the traditional targets proposed in global monitoring frameworks (25*25 targets) can be
58 incorporated into the existing Health Management Information System (HMIS) which is
59 being revisited.

60

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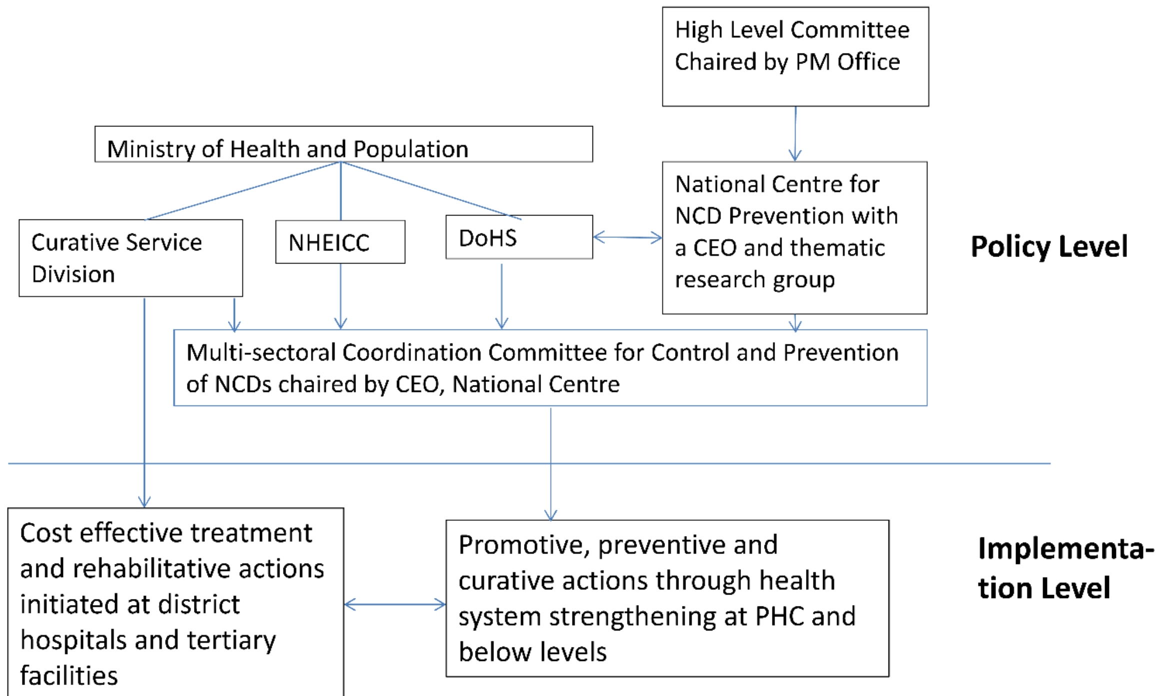

61

62 ***Figure 2: Recommended policy structure for NCD prevention in Nepal***

63

64 Our second recommendation is simultaneous strengthening of the community based
65 healthcare delivery system for accelerating a community based NCD response. District health
66 system reforms in the areas of quality of care, logistics supply, human resource training and
67 overall management are the basic pre-requisites for the effective implementation of
68 community based actions. Nepal has experience in implementing community based maternal
69 and child health promotion programs where strong leadership, a community-based approach
70 and external development partners' support have significantly contributed to the reduction in
71 maternal and child mortality (25, 26). Nepal should also tap the growing interest in NCD
72 among students and professionals. A national centre on NCD is thus needed for balancing
73 preventive and curative focuses, strengthening local health system and harnessing
74 collaboration among stakeholders for action on the social determinants of NCD.

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