

# Catastrophic expense & financial protection mechanisms to achieve universal health coverage: a review

## Abstract

Financial protection is an important arm of Universal Health Coverage. All governments are committed to provide health care at affordable cost. However, patients need to incur huge out of pocket expense for getting treatment. It leads to catastrophe in the family such that they have to borrow money and dispose the assets. This review on catastrophic health expenses (CHE) highlights that CHE measured by community based surveys use varying methodologies but still may be useful to see the long term impact of policy measures. However, this is not of much use for hospital management where patients are admitted and decisions need to be taken for financial protection in individual cases. Existing financial protection mechanisms using cutoffs of below poverty line may not be sufficient. It is recommended to devise some financial criteria, which is dynamic and can be used to decide extent of financial protection required for different diseases at different income levels.

**Keywords:** global community, financial protection, catastrophic, maternity care, tuberculosis

Volume 5 Issue 3 - 2017

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**Received:** February 21, 2017 | **Published:** March 15, 2017

**Abbreviations:** UHC, universal health coverage; OOP, out of pocket; THE, total household expenditure; CHE, catastrophic health expenditure; TB, tuberculosis; ACS, acute coronary syndromes; NCMS, new cooperative medical scheme; NEMS, national essential medicine supplies; NHI, national health insurance; CHI, community health insurance

## Introduction

Global community is advocating affordable care since time of Alma Ata declaration. WHO (World Health Report, 2000) reinforced this concept and recommended that fairness in financial contribution for health is the third goal of health systems.<sup>1</sup> Financial protection is an important arm of Universal Health Coverage (UHC). Methodologies to measure financial protection in terms of out of pocket expenses (OOP) and percent of OOP expense out of total household expenditure (THE) or out of 'ability to pay' from non subsistence expenditure depend on community based studies and are fraught with various drawbacks and variations. This review has been done to document what is known about catastrophic expenses, financial protection mechanisms and what needs to be done to provide financial protection and improve UHC. We have described extent of catastrophic expense, its important determinants, CHE in different disease conditions, role of indoor patient hospitalizations in CHE, methodological variations, and experiences of various financial protection mechanisms globally and in India. Extent of catastrophic OOP expense using different thresholds and methodologies is well documented. It was 6-15% in Nouna district,<sup>2</sup> 16-51% on maternity care,<sup>3</sup> 2.8% (in 1999) and 11.7% (in 2007) in Georgia,<sup>4</sup> 0.6% in Turkey,<sup>5</sup> 14.8% in Nigeria,<sup>6</sup> 13-22.2% in China,<sup>1,7</sup> 13.8% in Nepal,<sup>8</sup> 0.7- 21.0% in Brazil,<sup>9</sup> 9.6% in Colombo,<sup>10</sup> 3.5-4.8% in Iran<sup>11,12</sup> with Catastrophic health expenditure headcount ratio of more than 2% in Iran.<sup>13</sup> Above data is important to measure long-term impacts of the policy interventions in different geographic locations using uniform methods at each location. However, to design

interventions it is equally important to understand the determinants of catastrophic OOP expense.

Studies have clearly documented that catastrophic expense strikes the most among the poor population irrespective of the methods and cutoffs used. Additionally, catastrophe is more if there are elderly and persons with chronic diseases and disabilities. Illiteracy is additional contributor.<sup>2,3,5,6,9,11,12,14,15</sup> Patients had to take loans and dispose assets to meet the catastrophic expenses.<sup>16-18</sup> Studies indicate that expenses on indoor hospitalizations are catastrophic especially for poor.<sup>4,7,10,17,19</sup> Some researchers have documented the catastrophic expenses in specific disease conditions. The relationship between chronic diseases and their financial burden on households is double-sided, as financial difficulties can give rise to, and result from, chronic diseases. Older people with diagnosed chronic diseases face catastrophic health expenditure even in some of the wealthiest countries in Europe.<sup>20</sup> Catastrophic expense for Diabetes Mellitus treatment in China and India,<sup>21</sup> tuberculosis (TB) care,<sup>22</sup> for cancer management<sup>15</sup> or from cerebrovascular disease, diabetes, or chronic kidney disease,<sup>11</sup> road traffic injuries, diabetes, Asthma<sup>10</sup> have been well documented. Older men and individuals with chronic diseases were at higher risk of catastrophic health expenditure.<sup>23</sup> In India CHE was experienced by 84 per cent as a consequence of treating acute coronary syndromes (ACS).<sup>17</sup> For ACS, Catastrophic health expenditure was reported by 66% of those without insurance versus 52% of those with health insurance. It was as high as 80% in uninsured and 56% of insured participants in China.<sup>24</sup> Wide variations have been reported in CHE and OOP payment estimates due to methodological differences.<sup>25,26</sup> A review done to assess the comparability of out-of-pocket (OOP) payment and catastrophic health expenditure (CHE) estimates from different household surveys in India has revealed large methodological variations.<sup>27</sup> Some researchers have even suggested new measures of catastrophic out-of-pocket health expenditure based on consumption of necessities.<sup>28</sup>

Globally many financial protection mechanisms have been tried with varying successes. China has implemented the New Cooperative Medical Scheme (NCMS) in rural areas since 2003 to provide financial protection to its rural population. Various publications have shown varying success of these interventions, and showed that catastrophe occurred largely due to inpatient hospitalizations and expense on medicines was important contributor. NCMS reimbursement either did not help<sup>29</sup> and despite over 95% of coverage, the NCMS failed to prevent catastrophic health expenditure and medical impoverishment<sup>30</sup> or it helped relieve CHE to a certain degree; poor inpatients benefited more from NCMS than non-poor, but NCMS enrollees did suffer CHE<sup>31</sup> or it had partial effect for treatment of TB<sup>22</sup> or this financial protection mechanism was found to be insufficient.<sup>7</sup> China then supplemented NCMS with NCMS plus NEMS ( National Essential Medicine Supplies) that was found to have better protective effect than NCMS alone.<sup>32,33</sup> Similar partial success was achieved in Mongolia with social health insurance coverage,<sup>26</sup> in South Korea with National Health Insurance (NHI) benefit coverage for cancer patients,<sup>26</sup> in Nigeria with NHIS.<sup>14</sup> Similar observations were done by other researchers.<sup>5,34</sup> Evaluation of two Indian community health insurance (CHI) schemes also revealed that 4% and 23% of households with admissions still experienced CHE in two schemes as hospital expenses were larger than the benefit packages.<sup>35</sup>

## Way forward

Financial protection for Universal health coverage particularly for poor people is a global priority. Studies use income quintiles to define poor. However, financial protection mechanisms depend on various types of insurance mechanisms or some income cutoffs in form of 'Below Poverty Line'. None of the mechanism is able to protect the families from the catastrophe that strikes especially when the poor families require admissions especially at the secondary and tertiary level. Most expense occurs on medicines and supplies not covered under various benefit packages. It is recommended to conduct studies at these levels and identify at least top 10 departments and illnesses where catastrophic expense can occur. It is also recommended to devise some financial criteria, which is dynamic and can be used to decide extent of financial protection required for different diseases at different income levels.

## Acknowledgements

None.

## Conflict of interest

The author declares no conflict of interest.

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