10865

uide to Cost-Effectiveness Study of Instituting Disaster Mitigation Measures for Hospitals in Latin America and the Caribbean

by AK Acharya and CJL Murray

Harvard Center for Population and Development Studies

First Draft

September 14, 1995

I. Introduction

This report details the framework used in developing a cost-effective study of instituting disaster mitigation measures in Latin America and the Caribbean. This does not provide conclusions as to whether or not it is cost-effective to adopt disaster mitigation measures in most of Latin America or the Caribbean islands. The aim of the study is to relate hazard conditions to disaster mitigation measures. Specific site studies will be needed to determine whether or not it is cost effective to adopt these measures in regions facing seismic risk. For hurricanes conclusions are easier to make, since the risk of hurricanes is faced uniformly by a region.

The vital sets of data needed for this study are risk assessment, an estimate of damage of the building at different intensity of natural calamities, assessment of effectiveness of a hospital under different functional capacity during the time of a disaster in terms of epidemiological factors, the social cost of non-functionality at different levels, cost of retrofitting and the cost of repair to the physical building. Below we detail what form this data should be made available and how they should be used. This along with the instruction manual should serve as a guide to the Lotus123 worksheet (to be provided soon).

II. Disaster Risk

In conducting a cost effective analysis of disaster mitigation measures risk assessment must be the first step. While to some extent hurricanes can be predicted, earthquakes are not easily predicted. Risk assessment of meteorological disasters are more readily available than the seismic risk since this sort of risk can be more site specific. Below we detail what is needed and what we have at the present moment.

The data for maximum Modified Mercalli intensity (MMI) is available for many zones in South America. As a first step toward approximating the seismic risk we use this data to