

**Title:** Framework for Policymakers for Ethical Implementation of Restrictions in the Face of a Pandemic With Its Application to the COVID-19 Lockdown of India

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**Background:** Globally, COVID-19 has caused over 1,188,947 deaths and 45,595,575 cases as of 31<sup>st</sup> October 2020. Since April 2020, around 3.9 billion people from 90 countries were contained in some form of 'lockdown' to prevent COVID-19 spread. Discussions on the ethical appropriateness of such restrictions are missing. Here, we present a unified ethical principles- pragmatic considerations- policy indicators framework, broadly applicable across different countries and political systems to assess the ethical lapses of movement restricting policies. We further apply the framework to India's national lockdown.

**Methods:** We reviewed the existing literature on ethics of movement restrictions and consolidated ethical principles from four major studies: Barbara et al. (2001) investigating large-scale quarantine during bioterrorism threats, Upshur (2003) discussing ethical imposition of restrictions, WHO's 2007 report on movement restrictions during influenza pandemic and 2016 report on infectious disease outbreaks, and the Presidential Commission for the Study of Bioethical Issues (PCSB) (2015) looking at quarantine in response to Ebola epidemic. For each ethical principle, we derived answerable questions or pragmatic considerations to generate measurable policy indicators. We then assessed the policy indicators for India's lockdown. For each indicator, we summarized dichotomous (yes/no) responses. For a conservative assessment, only principles with 'yes' for all indicators were considered to be upheld.

**Findings:** A unique set of eleven ethical principles (harm, justifiability, proportionality, least-restrictive means, utility-efficiency, reciprocity, transparency, relevance, equity, accountability, cost and feasibility) were incorporated. The principles were linked to thirty-seven policy indicators. When the framework was applied to India's lockdown (March 2020), it showed that it did not adhere to the principles of proportionality, reciprocity, accountability and equity, while mostly upholding other principles.

**Interpretation:** Our framework provides policy indicators that can guide decision makers in the ethical implementation, monitoring and evaluation of restrictive interventions against outbreaks. Through application of this framework to India's lockdown, we have identified the ethical lapses in it that should be focused on in subsequent local or national movement restrictions.

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