Estimating vulnerability to COVID-19 in India

In the ongoing COVID-19 pandemic, timely and best available data surveillance is crucial to guide policy decisions. Rajib Acharya and Akash Porwal (September, 2020)[1] exemplify this by developing a vulnerability index based on socioeconomic, demographic, housing and hygiene, epidemiological, and health system characteristics across states and districts in India. Such exercises can help decision makers identify priority areas for the purpose of resource allocation and designing containment and mitigation strategies.

With this motivation, we compliment the recently published district vulnerability index by extending to 543 parliamentary constituencies in India. These constituencies are political units represented by members of parliament (MPs) who are directly elected by people and are responsible for implementing their constituents' vision through legislation. Despite their salience and influence, low political engagement or will is an oft-repeated explanation for absence of progress on diverse issues.

Among other reasons, low political engagement might stem from the scarcity of readily available data on population health and development at the unit of parliamentary constituency.[2] Consider Madhya Pradesh—the state with the highest overall vulnerability score[1]—which is composed of 29 constituencies and 50 districts. With the exception of four constituencies, the remaining ones are all made up of segments from multiple districts (appendix p 2). Across all the 543 parliamentary constituencies and 640 districts in India, only 28 share identical geographic boundaries (appendix p 3). Such misalignments between administrative and local political or electoral boundaries are also present in other countries, including the USA.[3]

Consequently, district-level data alone do not accurately reflect the status of a parliamentary constituency and are insufficient to engage both the constituents as well as their elected representatives in an informed manner. Using a published data science solution based on geographical information systems,[4,5] we present a domain-specific and overall vulnerability index[1] for the 543 parliamentary constituencies as a data resource for MPs and their constituents (appendix p 4). The parliamentary constituencies of Darbhanga, Samastipur, Ujiapur, Saran, Hajipur, and Khagaria (from Bihar) and Sitapur, Barabanki, and Hardoi (from Uttar Pradesh) had some of the highest overall vulnerability scores (>0·980).

Worldwide, the COVID-19 pandemic has starkly exemplified the adverse and costly consequences of divergence between administrative and political stakeholders. Data and evidence can play a crucial role in forging better links in a meaningful and accountable manner. It will be a missed opportunity to not think more broadly of mechanisms to bring political engagement, commitment, and accountability into public policy deliberations for all policies that affect the health and wellbeing of populations.

*Rockli Kim, *S V Subramanian*
svsubram@hsph.harvard.edu

Division of Health Policy and Management, College of Health Science, Korea University, Seoul, South Korea (RK); Interdisciplinary Program in Precision Public Health, Department of Public Health Sciences, Graduate School of Korea University, Seoul, South Korea (RK); Harvard Center for Population and Development Studies, Cambridge, MA, USA (SVS); Department of Social and Behavioral Sciences, Harvard TH Chan School of Public Health, Boston, MA 02115, USA (SVS)

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For more on **PCs and MPs in India** see https://loksabha.nic.in/

See **Online** for appendix