Assessing Country Readiness Over Time: Mapping Changes Between Editions of the International Health Regulations (2005) Joint External Evaluation (JEE) Tool

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Background and Research Significance

- WHO's 2005 International Health Regulations (IHR) Treaty requires countries to develop pandemic prevention, preparedness, and response (PPR) capacities to strengthen the decentralized global health security system.
- IHR Article 54 requires countries to regularly report on national implementation of the IHRs to WHO.
- Since 2015, reports have been transmitted through the IHR Monitoring and Evaluation Framework, which consists of the following reporting tools:

International Health Regulations

- 1. State Party Annual Report (required)
- 2. Joint External Evaluation (optional)
- 3. After-Action Reviews (optional, post-event)
- 4. Simulation Exercises (optional)
- Joint External Evaluations (JEEs) are encouraged to be conducted approximately every 5 years.
- Initial JEE assessments are done by national PPR experts, which are then collaboratively validated by a multinational expert team.
- Countries receive a score of 1 (not implemented) to 5 (full, sustainable implementation) for each PPR "indicator."
- "Technical Questions" for each indicator help evaluators determine scores.
- The JEE was launched in 2016 and revised in 2018 (2nd Ed.), and 2022 (3rd Ed.), with each update adding new indicators and editing scoring criteria.
- Since 2016, 116 countries completed a baseline JEE, and 28 countries have conducted a follow-up using JEE 3rd Edition, half of which (14) are in Africa.
- Updated editions of the JEE rename, recategorize, and change details to each indicator, making comparison of scores from one version to the next difficult.
- Mapping indicator changes from the 1st to 3rd Edition JEE will allow researchers and policymakers to compare JEE scores across time and identify trends in PPR capacity building across nations, regions, and the world.

Methods

- Indicator changes from each JEE edition were qualitatively coded as "none," "title changed," "updated," "merged," "split," "deleted," or "new" based on the extent they were revised.
- "Appendix 2" of the 2nd Ed. JEE was analyzed to document which 1st Ed. Indicators were represented in the updated version, which is detailed in the "How to Interpret" column.
- Next, a textual analysis of the "technical questions" for each JEE 2nd and 3rd Ed. indicator was conducted to determine which 2nd Ed. indicators were represented in the 3rd Ed.
 - If at least 50% of a 2nd Ed. indicator's technical questions were included in a 3rd Ed. indicator, the indicators were recorded as matching between the two JEE Editions.
- Matching 1st to 2nd Ed. JEE indicators were then matched to the corresponding 3rd Ed. indicators.
- The resulting "JEE Indicator Changes map" was tested for functionality by comparing indicator scores for ECOWAS nations that conducted two JEE assessments between 2016 and 2023 JEEs.

Findings

- All indicators across each edition of the JEE were accounted for through the mapping protocol.
- 37 indicators from JEE 1st Ed. are included in the 2nd Ed. JEE. 30 of these indicators were updated and 7 remain the same.
- 351 of the 2nd Ed. JEE's 393 technical questions (89.3%) were represented among the 3rd Ed. JEE's 489 technical questions, representing 55 of the 2nd Ed. Indicators in the updated version.
- 2nd Ed. to 3rd Ed. changes coded as None (2), Title Change (7), Updated (28), Merged (5), Split (4), deleted (3), new (9). ECOWAS States' JEEs, 2017 - 2023
- A final "JEE Indicator Changes Map" was produced to show the relationship between indicators from the 1st Ed. to the 3rd Ed., and from the 3rd. Ed. Back to the 1st. Ed.
 - This can be accessed via the "References" QR code.
- While 8 ECOWAS nations have conducted multiple JEEs, only Sierra Leone and Nigeria's results are fully available.
- The Indicator Changes Map successfully was used to evaluate indicator performance over time for these two nations.
- Sierra Leone's overall indicator average increased from 2.32 to 2.45.
- Nigeria's overall indicator average increased from 1.93 to 2.54.

2 JEEs, but only the first result is available [2 JEEs, both results are available NIGER **NIGERIA**

Purpose

- Understand which and how indicators changed across JEE revisions.
- Develop a method for comparing 1st, 2nd, and 3rd Ed. JEE indicators.
- Test this new indicator comparison method on real baseline and follow-up JEE scores for a sample set of countries that have conducted both.



Implications and Conclusions

- Despite ostensible incompatibility, JEE 1st, 2nd, and 3rd Ed. each fundamentally assesses the same core PPR indicators and maintains more elements than they remove.
- The JEE Indicator Changes Map allows researchers to compare JEE indicator scores across different editions of the tool, unlocking research opportunities for PPR trends over time.
- Countries should continue to conduct JEEs to evaluate PPR strengths and weaknesses.
- WHO should use the current JEE for as long as possible, and better document how to compare indicators across JEE editions for future revisions to the tool.
- Future research should compare JEE score changes with other factors (region, IGO membership, etc.)

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