World Health Organization
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Policy brief 5

Integrated Disease Surveillance and Response Strategy (IDSRS): improving surveillance and response capacity for national health security in Somalia

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The dire threat of disease in Somalia

Somalia frequently experiences outbreaks and infectious disease threats resulting in large-scale morbidity, disability and death. Global trade and travel as well as rapid urbanization in the country has increased the threat of occurrence and spread of infectious disease outbreaks tremendously. Protracted levels of humanitarian emergencies and civil conflicts resulting in displacement of people, environmental and climate change resulting in extreme drought, flood and acute water shortage lead to heightened risk of infectious disease outbreaks. The country's fragile health system, low health workforce force density and below optimal International Health Regulations (IHR) (2005) core capacities *(1)* make the country's outbreak surveillance, detection and response system extremely weak and vulnerable. As it stands, the system cannot be relied upon fully to contain any infectious disease outbreak at its source and prevent international spread.

The 10-year gains of infectious disease surveillance in Somalia: What lessons have been learned

Since 2011, the Early Warning Alert and Response Network system (EWARN) has been Somalia's only functioning multi-disease surveillance system. The system has been developed by World Health Organization (WHO) as an adjunct to communicable disease surveillance as a temporary emergency response intervention in contexts where routine surveillance systems are non-existent, overwhelmed or destroyed. The system which focuses on a few priority, epidemic-prone conditions, can be rolled out quickly with a primary objective to swiftly detect and verify alerts or unusual health events *(2)*. The EWARN system was introduced in 2011 when Somalia did not have a functional communicable disease surveillance system *(3)*. With support from WHO Somalia Country Office, local capacity was built for managing the functions of the EWARN, especially to report outbreak alerts as soon as they are detected at selected sentinel health facility sites; investigate and verify all reported alerts; and respond to all true alerts. Despite challenges like destruction of health facilities owing to civil strife and war, lack of investment, poor coordination and monitoring for performance of the surveillance system and high turn-over of health care workers causing temporary collapse of the system on a few occasions, the overall experience of EWARN implementation has been positive *(4)*. Specific successes include rapid detection and timely response to the 2013 polio outbreak *(3)*, the 2017 cholera outbreak and the 2020 measles outbreak in the country. In 2020, COVID-19 was included among the priority health conditions for reporting through the EWARN. Currently, EWARN is spread over 600 facilities detecting, verifying and investigating alerts on 12 priority health conditions on an immediate basis and aggregating, analysing

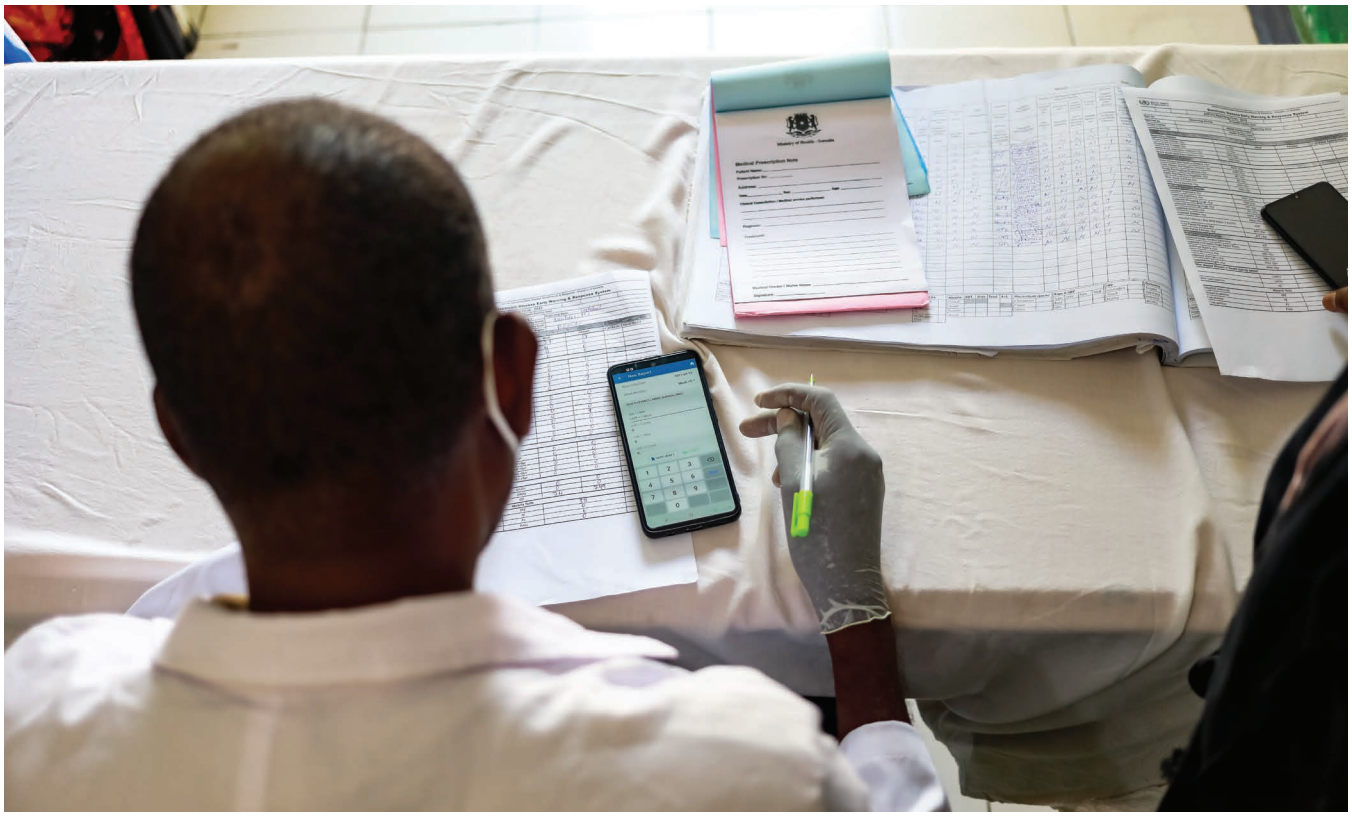
and providing feedback on priority disease trends on a weekly basis through a weekly EWARN bulletin. By the end of 2019, a weekly average of 200 alerts were being detected and reported through EWARN; with a timeliness and completeness of 70% and 60% respectively *(4)*.

Exiting from the EWARN to routine disease surveillance system: search for efficiency

After the successful launching and implementation of EWARN in Somalia, the country is now prioritizing establishing a more comprehensive infectious disease surveillance system as a requirement for improving IHR core capacities. The draft Somalia National Action Plan for Health Security (2020–2024) prioritized expansion of EWARN into a national disease surveillance system. Surveillance must be expanded in order to address the gaps in IHR core capacities and accelerate the country's progress towards building a more sustainable and effective surveillance and response system to detect, prevent and respond to all emerging, re-emerging and novel public health threats. This vision of the country is also reflected in its roadmap for universal health coverage and the essential package of health services (EPHS 2020) which the country prepares to roll out in 2021.

Integrated Disease Surveillance and Response (IDSRS): an opportunity to enhance health security

The IDSRS is a strategy for improving the performance of national disease surveillance systems through reforms aimed at better coordination and more integration of surveillance resources and functions for all priority diseases at all levels of the health system. Its aim, while focused at the district level, is to develop sufficient surveillance and response capacities at each level of the national health system and effectively link efficient public health action with all available data – information from multiple surveillance and response systems as well as laboratory evidence *(5)*. The WHO Regional Office for Africa began to implement the IDSRS strategy in African countries in 1998 *(6)*. The Strategic Priority 2 of the 2021–2025 WHO Country Cooperation Strategy for Somalia also prioritizes IDSRS roll-out for real time detection and response to disease outbreaks and other health security threats in the country.



The implementation of IDSRS in Africa: evidence of success

A substantial body of evidence exists on the potential of IDSRS implementation to address multiple technical, organization and workforce challenges to improve overall performance of communicable disease surveillance in various African countries. This evidence relates to improvement in quality (timeliness and completeness) of surveillance data, improvements in system sensitivity of the surveillance system (detection of potential outbreaks), improvements in community involvement in surveillance, improvement in coordination of multiple partners involved/supporting surveillance, communication and data sharing and improvement in efficient allocation and utilization of resources to support communicable disease surveillance. These evidences are summarized in Table 1 below.

Table 1: Evidence on the effectiveness and efficiency of IDSRS implementation relevant to Somalia

Area of improvement	Evidence
Quality of surveillance data	Multiple evaluations conducted between 2010 and 2017 in but not limited to Uganda, Ghana and Tanzania indicated that IDSRS implementation, especially after its revitalization, improves timeliness and completeness of reporting, is particularly effective if reporting is aided by information technology *(5,7–9)*.
Timely detection of outbreaks	A 2015 evaluation of IDSRS implementation in Ghana reported an increase in reporting of cholera and other epidemic diseases. These findings were supported by another evaluation in Uganda which attributed detection of outbreaks to IDSRS implementation *(8,10,11)*.
Monitoring of disease programmes and use of data for planning	Independent studies; one in Uganda and another in Ethiopia reported improvement in facility level monitoring of disease trends especially measles and acute flaccid paralysis attributable to IDSRS implementation *(11,12)*. A separate study in Zambia reported that IDSRS strategy implementation promoted the use of data for planning and decision-making at the facility level *(13)*.
Efficiency in resource allocation and utilization	Perry and colleagues in their publication on planning IDSRS implementation reported that IDSRS strategy implementation reduced duplication and used resources more efficiently *(14)*. A cost analysis of IDSRS conducted by Somda and colleagues in Burkina-Faso, Eritrea and Mali reported that the cost of IDSRS can lie between 20%–43% of the total cost of all health related surveillance, making IDSRS, 2–5 times more efficient than multiple vertical surveillance systems *(15)*.
Adherence to IHR data consolidation, reporting and sharing requirements	IDSRS implementation creates a mechanism for consolidation of data from different sectors and surveillance systems and a platform for dissemination of consolidated data to all relevant sectors. The strategy therefore also enables routine sharing of consolidated information with WHO, all of which are critical requirements under the standard terms of reference of IHR national focal points *(16)*.
Advancing One Health, sectoral collaboration and community engagement	The process of IDSRS implementation includes establishment of multisectoral coordination structures at joint determination of surveillance system priorities, sharing of consolidated surveillance data with the animal and all other sectors, establishing multi-professional (including animal) outbreak investigation and response teams, linking communities to facilities through community based surveillance and reporting of events like clusters of illness or death in animals. These processes advance One Health, multisectoral collaboration and community engagement *(17,18)*.
Accelerating IHR core capacities establishment and broader health systems strengthening	IDSRS implementation addresses multiple IHR capacity requirements; coordination, real time surveillance, preparedness, points of entry, zoonotic diseases, risk communication, workforce development, among others. IDSRS implementation also addresses critical bottlenecks in the dimensions of human resources, health information systems and health financing which are critical to health systems strengthening *(7,19)*.

Perspectives for successful launch of IDSRS: what should be done in Somalia

Although several success stories have been documented in the countries of the African region, several key challenges can hinder the progress of a successful launch and implementation of IDSRS in Somalia if not carefully thought through (Box 1).

Box 1: Ingredients of successful IDSRS implementation

- Establish a coordination unit at the highest possible level for effective communication, country ownership and alignment of all stakeholder resources towards identified priorities for IDSRS implementation
- Gain early stakeholder consensus on the primary goal and priorities of IDSRS implementation in a decentralized and devolved structure with more power and authority at the district and regional level for public health decisions making and for managing the surveillance and response functions
- Ensure a good system design that is scalable and use electronic platform at the initial stage for real-time threat detection and response
- Use local context to adapt IDSRS. Such evidence can include identification of priority diseases, conditions for immediate and weekly reporting system, and other diseases and conditions selected for surveillance for monthly or quarterly reporting, the current quality of surveillance data, level of resource duplications, redundancies and resource gaps across different surveillance systems.
- Identify and scale-up the strong components of previous vertical systems into the integrated structure as opposed to developing new surveillance structures and processes
- Develop a long-term strategy for ensuring consistent availability of trained and skilled health workforce especially at the district level to manage the surveillance functions of the IDSRS by integrating surveillance trainings into pre-service curricula beyond in-service trainings (institutionalize the training of IDSRS and health security into public health training institutions)
- Integrate community-based and event-based surveillance system with the IDSRS for optimal population and surveillance coverage
- Develop a costed roadmap on top of technical guidelines and training materials, a domestic financing strategy and an equipment and supplies mobilization strategy
- Conduct high-level advocacy at national and subnational levels for increased public sector allocation of domestic finances to support IDSRS implementation
- Optimize leadership and develop accountability framework to monitor performance (identify correct indicators for measuring progress). Establish a mechanism for monitoring the broader inputs, processes, outputs, outcomes and impact of IDSRS strategy implementation and provide regular and periodic feedback and sharing of data on IDSRS priority diseases, conditions and events in a timely manner across all levels of the health system
- Integrate with broader health information systems
- Support the surveillance and response functions through deployable adequate “first responders” at the district and local level

Implementation of IDSRS in Somalia: new opportunity for building IHR core capacities and enhancing efficiency by avoiding fragmentation and redundancy

The WHO Somalia Country Office has supported the organization of the first ever workshop to discuss the national IDSRS implementation plan in Somalia in July 2021. The key deliverable from the workshop is a three year costed IDSRS operational plan (2021–2023) which is being reviewed by the IDSRS Technical Working Group of the Federal Ministry of Health and Human Services in Somalia. The plan is organized around four thematic areas, 1) Coordination and Governance, 2) Laboratory Networks and Systems, 3) Data and Information Technology Systems and 4) Surveillance and Response.

The implementation of IDSRS in Somalia will address multiple barriers, fragmentation and gaps in the country's core capacities for IHR. These include advancing the One Health agenda, build essential public health functions of district health system, accelerate the primary health care to advance universal health care, among others. The strategy will also align the actions and resources of multiple government and non-government partners to jointly defined surveillance priorities. The strategy will integrate surveillance functions and avoid resource duplications and redundancies, consolidate data on multiple diseases, levels and systems into a single dataset and integrate it into the national health information system database. The strategy will also build up the appropriate public health workforce through regular in-service trainings, support supervision and simplification of work through integration of multiple reporting tools and use of information technology. The IHR (2005) requires fully functioning disease surveillance systems for meeting broader goals of national health security. The IDSRS remains the most comprehensive evidence-based strategy for strengthening both resilient health system as well as enhancing health security in the country through building and sustaining IHR core capacities.

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