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Original Article

Insights into Health Program Implementation and Evaluation in Iran: A Brief Review of National Healthcare Programs in Iran

Reyhaneh Ehsani [1], ****Maedeh Sharafoddin*** [2], ***Alireza Olyaeemanesh*** [3], ***Alireza Delavari*** [4], ***Abbas Vosoogh-Moghaddam*** [1,5], ***Yousef Alimohamadi*** [6], ***Sheida Ghorbani*** [2]

1. *Public Health Services Modernization Secretariat, Deputy of Health, Tehran University of Medical Sciences, Tehran, Iran*
2. *Department of Epidemiology and Biostatistics, School of Public Health, Tehran University of Medical Sciences, Tehran, Iran*
3. *National Institute of Health Research & Health Equity Research Center, Tehran University of Medical Sciences, Tehran, Iran*
4. *Digestive Diseases Research Institute, Shariati Hospital, Tehran University of Medical Sciences, Tehran, Iran*
5. *Governance and Health Research and Training Group, National Institute for Health Research, Tehran University of Medical Sciences, Tehran, Iran*
6. *Health Research Center, Life Style Institute, Baqiyatallah University of Medical Sciences, Tehran, Iran*

***Corresponding Author:** Email: maedeh.sharaf@gmail.com

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Abstract

Background: Healthcare program monitoring can play a key role in evaluating their implementation and identifying their strengths and weaknesses.

Methods: This study was performed with the exploratory sequential mixed methods design in 2023 at Tehran, Iran. The information was categorized into indicators, refining, analysis, interpretation, reporting, and proposed challenges and recommendations.

Results: Medical Sciences Department of Public Health (TUMSDoPH) evaluation of its public health programs revealed a comprehensive approach covering a wide spectrum from disease management to health promotion, emphasizing electronic health records, targeted disease interventions, and strategies for non-communicable diseases, alongside efforts to enhance community health.

Conclusion: There is a need for initiating "the monitoring committee" under the supervision of the deputy chancellor for public health to monitor key performance indicators and policies to discover the problems of each part of the health system and provide recommendations.

Keywords: Healthcare system; Public health; Surveillance; Monitoring committee

Introduction

The overarching aim of healthcare systems worldwide is to safeguard and enhance the health of individuals within the community (1). Iran's healthcare framework has seen substantial evolution, influenced by its history, politics, and societal shifts. Traditionally, healthcare was delivered through a decentralized network of individual providers, local healers, and grassroots efforts (2,3).

The 1979 Iranian Revolution significantly shifted the healthcare focus towards reducing access disparities and bolstering preventive care, leading to

expanded health center access and the establishment of the Ministry of Health and Medical Education for policy, education, and service delivery (4,5). TUMSDoPH aims to oversee public health programs comprehensively (6). While high expenditure doesn't assure success in public health (7), the US struggles with high costs and limited coverage (8,9), whereas China has improved its primary healthcare post-reform (10,11). Iran's PHC program faces challenges in meeting evolving community needs, prompting a reassessment of strategies (11-13). This study evaluates Iran's public health surveillance system to optimize health interventions.

Methods

The study employed an exploratory sequential mixed method design, encompassing a comprehensive literature review and field data collection. It was based on the TUMSDoPH information from 2023. A comprehensive analysis and conclusion were carried out by a team of accomplished authors, each of whom is an expert in the respective field.

Data Collection

This study developed a comprehensive framework for evaluating surveillance systems in health program management by conducting a thorough literature review of Persian and English sources, resulting in 29 articles for content analysis. A mixed-method approach, including group discussions and expert interviews with professionals in public health, epidemiology, and health management, was utilized for data collection. These efforts culminated in collaboration with 10 Technical Groups (TGs) of TUMSDoPH, using meetings to identify specific program indicators for assessment.

Analysis and Reporting

During the evaluation and analysis phase, predetermined criteria and checklists were used to assess each Technical Group's (TG) performance against specific indicators. The evaluation involved detailed examination of reports to understand data refinement, depth of analysis, interpretative approaches, and the application of findings, with communication via email, WhatsApp, and in-person meetings to ensure accuracy. The information was categorized into indicators, data refinement, analysis, interpretation, reporting, and challenges, leading to comprehensive recommendations to improve the public health surveillance system. Figure 1 provided a visual overview of the step-by-step implementation of the study.

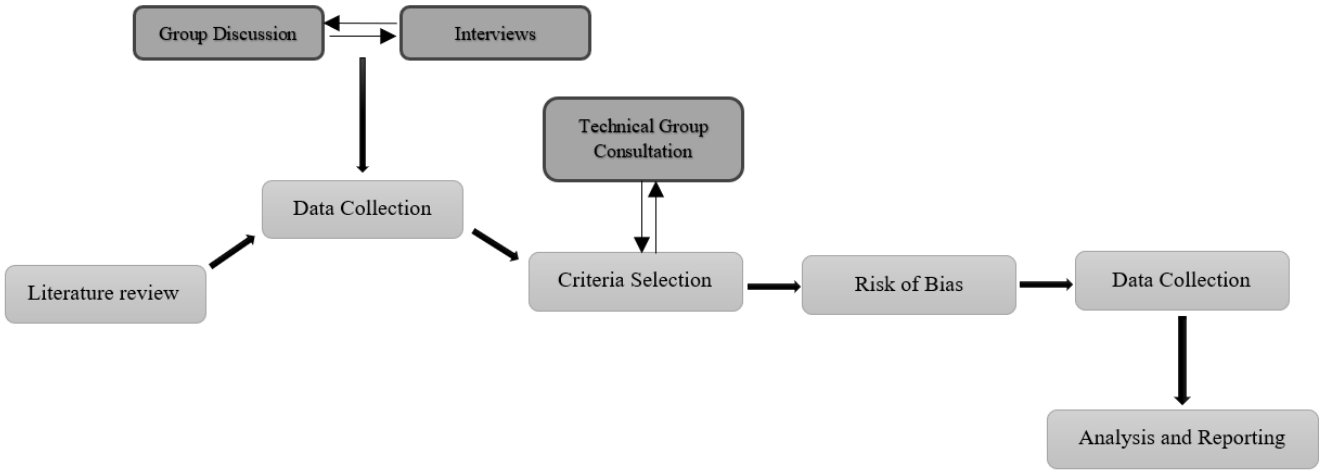

Fig. 1: Study workflow

Results

Communicable Diseases

Tuberculosis and AIDS were reviewed. Healthcare service indicators generally include the percentage of patients' coverage and the percentage of referrals to specialized levels for more specialized treatments. AIDS indicators include the number of active files, number of viral loads performed in a year, Number of positive patients identified, and PMTCT program (number of pregnant women who have had a rapid or ELISA HIV test) to prevent mother-to-child transmission of HIV.

Data refinement was done using E-health records, which is the level of access with the TUMSDoPH with the aim of monitoring. After case findings of patients with tuberculosis at the level of comprehensive health services centers (CHSC) and pastoral health houses, the identity card and patient examination information are registered in the TB electronic records.

To refine the available data, quarterly visits were made to assess various programs, and reports were provided based on checklists, software, and visits which were analyzed and interpreted.

Non-Communicable Diseases

Hypertension, diabetes and cancer are the priority of the non-communicable diseases group, which are surveys in CHSC. In terms of the services provided, the percentage of people who are identified and receive guidance and medication, as well as the percentage of people who have been able to control their illness properly, has been estimated.

In the refinement process, the "SIB" records (E-health record system) automatically clean the data by deleting the lost data, homogenizations, and repetition.

Data analysis and interpretation were made based on the expected values. The indicators were defined in each public health program by experts. They were reported to the higher levels of The Ministry of Public Health and Medical Education (MoPHME) and TUMSDoPH following the administrative correspondence and feedback to the district levels.

Pharmaceutical

The percentage of essential drugs supplied and distributed to the clients is one of the principal indicators of Primary Health Care (PHC) coverage. The distribution percentage of drugs for tuberculosis, AIDS, malaria, leishmaniosis and pediculosis, as well as supplementary drugs such as vitamin drops for children and supplement pills, prescribed antibiotics, and corticosteroids, are among the indicators in this group. Refinement is done by "SIB" records and the seasonal request form of district health networks, indicators, and checklists.

Oral and Dental Health

The focus in the dental health group is on the students' dental health, especially deciduous teeth, estimated by indicators such as DMFT and fluoride varnish coverage. Data were obtained from networks and registered services in the SIB system to refine the fluoride varnish coverage. For other services refinement, the obtained data from the district levels was verified and matched with the data from the statistics unit of the networks and the relevant fund. To interpret and analysis the DMFT program, the above data from a sampling of different years applied.

Community Nutrition

Risk factor indicators such as developmental disorders or obesity in under 5 yr old children and weighting conditions in pregnant women are underestimated. Important indicators in this group include the percentage of children under five years with developmental disorders, the percentage of adolescents with developmental disorders, the percentage of overweight and people with obesity, and the percentage of pregnant women with unfavorable weight gain. There is no refinement procedure for this group.

Family and Population Health

The analysis includes population data on infants, children, young people, and the elderly, focusing mainly on indicators related to infants and children, such as birth, mortality, growth, and education. Prenatal care indicators for pregnant women are refined using SIB records. National surveys assess malnutrition in children under five, with results shared with universities. Vaccination coverage is reported by age group, with any decreases in vaccination rates for under-fives being addressed seriously by TUMSDoPH and the Inspection Department.

Environmental and Occupational Health

In addition to checking the general state of environmental health, assessing the ratio of risks leading to injury to human resources and health units, also observing safety tips is on the agenda of this unit. To analyse and interpreted coverage of compiling these programs in health units is compared to 100% coverage.

Mental and Social Health

Estimating the rate of suicide attempts and death due to suicide as well as initial mental health screening, the suicide rate per 100,000, diagnosis of psychiatric disorder by a physician, screening of child abuse, spouse abuse, and organizing self-care group training sessions are the indicators of CHSCs in this TG.

To analyze the results of each of the indicators, the performance of the year and the degree of its conforming to the national index were compared.

Health Education and Promotion

The percentage of self-care program coverage in different groups and the number of health education agents are among the indicators for estimating the implemented program in this TG. Regarding refinement, the reports of indicators are registered and announced through statistical forms at the level of health centers and pastoral health houses.

For analysis, data collection is done based on statistical forms, then these forms are either uploaded online or received via email and office automation.

PHC Network

The programs and indicators of this TG are different at the city and village levels according to the people's demands in each area. In the pastoral regions, the percentage of referrals to the second specialized level, the rate of pastoral visiting, and the average of pharmaceutical prescription items do not have a refining method and are calculated as a number.

To analyze data, the percentage of pastoral visiting is expected to be close to 100 percent and if it is less than that, the causes are examined in terms of logistics or lack of physicians. The percentage of referrals to second specialized levels, in case of more than %15 referrals, it is announced that the standards and guidelines will be observed (**Error! Reference source not found.**).

Table 1: Summary of results

Technical Groups	*Indicators*	*Refinement*	*Analyze*	*Interpretation and Reporting*
Communicable Diseases	AIDS: Number of active E-health records, number of viral loads performed in a year, number of positive patients, PMTCT program to prevent mother-to-child transmission of HIV.	AIDS: Seasonal visits, various checklist programs.	AIDS: By checklists, software, and visiting.	AIDS: Reporting by number and other data on a seasonal basis.

Table 1: Continued….

	TB: The incidence of severe cases, the incidence of extrapulmonary tuberculosis, % patients' coverage, % referrals to specialized levels.	TB: Online data registration software, periodical monitoring.	TB: no analysis.	TB: no specific schedule for reporting.
Non-Communicable Diseases	Diabetes: Prevalence of diabetes, diabetes death rate, % of providing risk assessment services, % of diabetic patients with optimal control of FBS and HbA1C	Diabetes: Data cleaning by SIB.	Data analysis by experts.	Reports are provided to higher levels as needed.
	HT: Prevalence of hypertension, optimal control of blood pressure.	HT: Data cleaning by SIB.		
	Cancer: No indicator.	Cancer: Data encoding, Regular reporting.		
Pharmaceutical	% Of AIDS, TB, malaria, leishmaniasis, pediculosis, supplements drug supply and prescribed antibiotics and Corticosteroids.	By SIB and checklists.	Data analysis by experts.	Corona protection items are reported weekly and for other indicators quarterly, semi-annually, or annually.
Oral and Dental health	DMFT, Fluoride varnish coverage, and other services.	DMFT: No Refinement.	DMFT: Measuring the impact of preventive services on the process of improving indicators.	DMFT: no specific schedule for reporting.
		Fluoride varnish: Verification and matching of data.	Fluoride varnish: Comparison of the obtained statistics with the previous and national data.	Fluoride varnish: reported in writing to the TUMSDoPH.
Community Nutrition	% Of children and adolescents with developmental disorders, % of overweight and obesity, % of pregnant with unfavorable weight.	No Refinement.	Comparison of the data with the last year.	Sending reports to the nutrition improvement office of the MoPHME every 6 months.
Family and Population Health	Pregnancy: Maternal mortality rate, pre-pregnancy and post-delivery care coverage	No Refinement.	Pregnant: no analysis.	Pregnant: no specific schedule for reporting.
	Children: Death rate and malnutrition rate of children under 5 years, number of children who did not enter school at the appropriate age.	No Refinement.	Children: Periodic analysis and comparison of results with other universities' results and national data.	Children: Sending reports semi-annually or annually to administrators and universities.
	Infants: Infant mortality rate, % of infant care coverage (5-3 days)	By IMAN, verification and matching the data.	Infants: Periodic analysis and usage of IMAN.	Infants: no specific schedule for reporting.
Environmental and Occupational Health	Ratio of the injury to human resources, % of centers with full coverage of CHSCs, % of implementation of safety and risk assessment program.	SARA: Review by superiors and usage SIB.	SARA: Comparison of results with national data.	SARA: The first quarter of each year.
		DART: No Refinement.	DART: Comparison of results with national data.	DART: At the end of each season.

Table 1: Continued….

		DSS: Review by superiors. EOP: Review by superiors. SNS: No Refinement.	DSS: no analysis. EOP: Comparison with 100%. SNS: Comparison with 100%.	DSS: At each incident and the end of each season. EOP: September by every year. SNS: The first quarter of each year
Mental and Social Health	Suicide rates, psychiatric diagnoses, life skills training, abuse screenings, substance use screenings, harm reduction services	Estimating the ratio of each index based on the SIB, conforming to the received data and health portal.	Comparison of year performance and conforming to the results of national indicators.	Based on the type of index; Annual, seasonal and semi-annual.
Health Education and Promotion	% Of self-care program coverage in different groups and the number of health education agents.	Verification and conforming of data, monitor according to the checklist, and performing visits.	desired indicator according to the operational plan.	Statistical forms and reports of MoPHME
PHC Network	Urban: % covered population and % of active urban health centers. Pastoral: % of pastoral visiting, % referring to second specialized level, % E-health records, prescribed drugs mean, % active health homes, and % covered population.	Urban: Assessing available statistics and resolving shortcomings. Pastoral: No Refinement.	Urban: Data analysis by experts. Pastoral: Comparison of the pastoral visiting with 100% and 15% for referring to specialized level, no analysis for % of completion of E-health records, monthly review of the number of prescribed drugs.	Urban: Reports are provided to higher levels as needed. Pastoral: % pastoral visiting and referring to specialized level are done monthly, % of completion of E-health records and prescribed drugs at the end of the year.

Discussion

The study aimed to develop a comprehensive public health program surveillance system of Iran, focusing on the continuous collection, analysis, and interpretation of health data to improve public health interventions and overcome system challenges.

One of the critical challenges in public health initiatives across Asia, mirroring global issues, including financial limitations and cultural hesitance towards communicable disease prevention programs (14, 15). Specifically, in Iran, there's a stigma associated with programs targeting sexually transmitted diseases. Similarly, India encountered financial and cultural obstacles in its fight against HIV/AIDS but successfully overcame these through a comprehensive approach involving health education, community engagement, and destigmatization efforts (16, 17).

Globally enhancing programs for non-communicable diseases like heart disease, diabetes, cancer, and chronic respiratory conditions is essential, with countries like the USA and Mexico adapting their strategies to their healthcare systems and population needs (18, 19). The US focuses on Workplace Health and Wellness Programs (WHWPs) to foster healthier work environments through health screenings targeting lifestyle factors contributing to NCDs. In contrast, Iran lacks similar long-term, broadly implemented programs for most population groups (20).

In the pharmaceutical sector, services often merge with those for communicable diseases and lack a significant role in health programs, a trend common to many countries. The CDC in the

USA addresses this by distributing specific drugs annually as needed, highlighting the global challenge of achieving goals in pharmaceutical services (21). South Sudan's System for Improved Access to Pharmaceuticals and Services (SIAPS) program stands out for successfully enhancing drug monitoring, reducing counterfeit medicines, and coordinating the distribution of essential medicines worth over $53 million to 80 counties, offering an innovative model for managing pharmaceuticals in challenging settings (22, 23).

DMFT, Fluoride varnish coverage are the leading programs in oral and dental health TG and they need a routine schedule for reporting. These programs are constant in concept but different in the implementation method, such as Turkey's oral health program called oral health education (OHE), whose primary focus is on oral health education for elementary students (24).

The Community Nutrition TG program targets the broader community, especially focusing on pregnant women and children under five, using annual data comparison for improvements. Unlike Indonesia's focus on gender health via education, Iran faces lesser cultural challenges (25). The CDC's programs in the USA promote healthy lifestyles to prevent obesity, showcasing a successful holistic approach to community nutrition and health equity (26,27).

The Family and Population Health group prioritizes children, infants, and pregnancy, recommending solutions like budget allocation, leveraging international experiences, enhancing public acceptance, and specialized workforce training to address sector challenges (28, 29). Pakistan integrates family health with mental health and nutrition in a comprehensive community program, while Thailand's Universal Coverage Scheme successfully broadens access to extensive healthcare services, including family planning and preventive care, for all citizens (30-33).

Iran's Environmental and Occupational Health group, focusing on safety and disaster management, aligns with WHO risk assessment goals. Sweden exemplifies success in this field with strict pollution control, rigorous workplace safety, and a solid public health infrastructure, enhancing population well-being and environmental sustainability (34, 35).

The Mental and Social Health group offers programs targeting specific groups and screening, emphasizing the importance of integrating these services with other health programs for effectiveness across the entire community (36, 37). Finland shines in this domain with its comprehensive mental health services and social support systems, while Venezuela faces significant struggles, marked by limited access to these crucial services, highlighting disparities in public mental and social health success (38, 39).

The PHC Network group tailors its programs to different settings, urban and pastoral, using the coverage and health contributions as key indicators of success in PHC. Brazil's Family Health Strategy (ESF) serves as an exemplary model, offering comprehensive health coverage and preventive care tailored to the varied needs of urban and rural communities (40, 41). Through multidisciplinary teams delivering continuous, community-based care, ESF has notably enhanced health outcomes and access to healthcare, demonstrating its efficacy in meeting the population's health demands (42).

Conclusion

Identifying the challenges in the public health surveillance system, as well as determining the gaps, is of significant importance to improve quality, reduce costs, and implement necessary reforms.

Journalism Ethics considerations

Ethical issues (Including plagiarism, informed consent, misconduct, data fabrication and/or falsification, double publication and/or submission, redundancy, etc.) have been completely observed by the authors.

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Conflict of interest

The authors declare that there is no conflict of interests.

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