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Development of Behavioral Risk Factor Surveillance System Management in the Republic Of Moldova Based On the U.S. BRFSS Standards

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ABSTRACT: *The current health care system in the Republic of Moldova is not adequately focused on control and prevention of behavioral risk factors. There are no systems for systematically collecting behavioral risk factors data. The main goal of the research was to assess the feasibility of performing Behavioral Risk Factor Surveillance System (BRFSS) in the Republic of Moldova using the U.S. BRFSS standards, and provide evidence-based recommendations for new implementation. The proposed recommendations in base of performed SWOT analysis are opportunities to extend the good practice of U.S. health system in order to contribute for improvement of cardiovascular health in the Republic of Moldova.*
Keywords: *Behavioral risk factors, management, surveillance.*

I. INTRODUCTION

Since its independence in 1992, the Republic of Moldova has sought to develop a comprehensive model for a Behavioral Risk Factor Surveillance System (BRFSS) to combat the rising statistics in cardiovascular disease. This is one of the most important health issues in the Republic of Moldova. Cardiovascular disease is consistently placed first for all death causes of the population, owning about 56% of the total mortality over the last 10 years. In this context it is important to note, that the World Health Organization has mentioned in the "Action Plan for the Global Strategy for the Prevention and Control of Non-communicable Diseases 2013-2020" behavioral risk factors that cardiovascular risk reduction is a main target of intervention [1].

The current health care system in the Republic of Moldova is not adequately focused on control and prevention of behavioral risk factors. There are no systems for systematically collecting behavioral risk factors data at the regional or national level. Consequently, there are no reliable available data for program planning, monitoring, evaluation or basic-decision making.

Since 1984 the Behavioral Risk Factor Surveillance System (BRFSS) has become a powerful tool for targeting and building health promotion activities in the United States of America by collecting behavioral health risk data at the state and local levels. The resulting statistics led to a plan that decreased the cardiovascular risk for the last several decades in the United States of America [2].

In order to apply the best practices in a developed health system, the Public Health Department of the State University of Medicine and Pharmacy of the Republic of Moldova has proposed a research project to implement a system based on the U.S. BRFSS standards for the ongoing surveillance of major risk factors in the Republic of Moldova. Therefore, the main objective of the study is to assess the feasibility of performing a Behavioral Risk Factor Surveillance System (BRFSS) in the Republic of Moldova, based on the U.S. BRFSS standards and to provide evidence-based recommendations of implementation. In order to achieve that goal, the objectives are to**:**

1. Learn the U.S. experience in Behavioral Risk Factor Surveillance System implementation and application model;
2. Assess system attributes and activities: identifying operation criteria;
3. Compare public health Behavioral Risk Factor Surveillance systems in countries that have a similar model (Italy and Canada): identifying their strengths and weaknesses and implementation issues;
4. Analyze the magnitude to which the system attributes were met in assessed systems;
5. Provide an evidence-based recommendation for the implementation of a Behavioral Risk Factor Surveillance System in the Republic of Moldova.

II. METHODS

Research has been designed as descriptive qualitative study. According to the research design sources of data collection were defend as follow: U.S.A. Behavioral Risk Factor Surveillance System (BRFSS), Canadian Rapid Risk Factor Surveillance System (RRFSS) and Italian Behavioral Rapid Risk Factor Surveillance System

(PASSI) [2, 3, 4]. The Checklist for Evaluating BRFSS provide by CDC's Guidelines was applied as a tools in study processes [5].

Data analysis started with a separate SWOT analysis for each surveillance system of the USA, Canada and Italy in order to provide a baseline for integrating the commonalities of the SWOT analysis. After the SWOT analysis the common strengths, weaknesses, opportunities and threats of the existing systems were evaluated in order to provide recommendations based on best practices for a new implementation of a Behavioral Risk Factor Surveillance System that met the parameters and needs of Moldova.

III. INTEGRATED SWOT ANALYSIS

1.1 Strengths:

- All the three surveillance systems collect demographic, behavioral, and exposure information for the health-related event through ongoing telephone surveys [6, 7, 8].
- The structure of the questionnaires for all three systems includes questions related to risk factor (tobacco use, alcohol consumption, physical activity, healthy diet) that support monitoring main triggers of disease development or other health-related events. These factors affect how the systems work to identify groups at high risk and to target and evaluate interventions.
- The U.S. BRFSS permits individual states to add questions of their own design to the BRFSS questionnaire but it is uniform enough to allow state-to-state comparisons for certain questions. These questions are meant to address emergent and locally important health concerns. Also, states can stratify their BRFSS samples to estimate prevalence data for regions or counties within their respective states. This flexibility of the system is also realized in the Italian and Canadian surveillance systems. Questions are revised to meet specific regional needs, but the core components in the questionnaire remain unchanged [9].
- The highest response rate is from the Italian PASSI having 97.1 % compared with 69% of Canadian RRFSS, and U.S. BRFSS 50-55 % [10].
- Italian and Canadian RRFSS have similar levels of integration with other related systems and the number of organizations involved in receiving case reports is consistent. The regional departments are integrated with the state department and the federal level. Regional departments conduct their own questionnaires and reports. These reports are sent to the state departments to integrate all data, and produce a national data report.
- In Italy people living in the same region provide collection of data. That permits the interviewer to understand the questions and answers of the local health unit community, recognize weaknesses and strengths in the design of questionnaires, and identify factors that could influence response rates.
- Protection of personal privacy and confidentiality is equally present in all three systems.
- Completeness and validity of data is achieved with all systems. The type of data they commonly collect include the demographic characteristics of affected people, details about the health related event, and the presence or absence of potential risk factors [11, 12].
- With the U.S. model there is a dynamic interaction process between the CDC and the states. In Italy, the communication is between local units and the Instituto Superiore di Sanita (ISS). Canada's model is between public health units and the Institute of Social Research.

1.2 Weaknesses

- All three systems exclude the following from the survey: institutionalized people, persons who don't speak the official language, people with severe disabilities, children and adolescents [13, 14, 15].
- The quality of self-reported data can be influenced by: subjectivity due to inaccurate memories, reduced awareness, reticence to report accurately, cultural and language barriers, limited health knowledge and under-reporting of health risk behaviors, especially from those who are illegal or socially unacceptable.
- The data are collected in a single point in time.

1.3 Opportunities

- All three systems are organized as noninvasive and do not require additional time.
- They are using a mixed mode of interview: land line, cellphone and online.
- Systems are able to provide for proficiency in other languages.
- Disseminating information, survey promotion and data collection through the media.
- Pre-notification letters sent several days before the interview providing information about the surveillance system and the survey methodology.
- Increase number of calls in order to increase the response rate.

1.4 Threats:

- All three surveillance systems are exposed to a lack of resources that might affect the stability of the system.
- Participation in the survey is not a requirement.

IV. PUBLIC HEALTH IMPLICATIONS

The Health System of United States of America has the most lasting and successful experience in Behavioral Risk Factors monitoring and evaluation, since it is the largest continuously conducted health survey system in the world.

In order to assess the conditions of chronic public health issues such as cardiovascular diseases in the Republic of Moldova where there is no system for systematically surveillance of behavioral risk factors, it is very important to apply the best practices of a developed health system.

Population health surveillance in the Republic of Moldova faces subsequent and identified problems.

The collection, storage, and processing of statistical data are carried out at the national level by several institutions. Communication, collaboration, and coordination are inefficient and limited some data collection is duplicated. Also, incorporation of the institutional information systems into an integrated information system is imperfect (due to the incompatibility and limitations of some systems).

The evidences about health determinants and behavior risk factor particularly in the case of non-communicable diseases are not collected systematically and, therefore, the existing data are incomplete.

Collected data contains insufficient characteristics and can't be used to identify inequities in health that would lead to the development and implementation of effective interventions.

There is not an approved comprehensive view regarding procedures of conducting population systematic surveillances such as: the frequency of these studies, which should perform it, and financial resources to sustain the costs. There are no national registers for the priority of non-communicable diseases (cardiovascular diseases, diabetes, mental health, etc.).

On the administrative-territorial unit level personnel don't have sufficient skills to carry out population health status assessments that include processing, developing measures, and data management. The definition of indicators and the processing of data are not standardized. There is no data quality verification system, and for this reason, compatibility cannot be ensured at the national and international level.

There are limited human resources and skilled specialists in developing, implementing, monitoring and evaluating non-communicable disease prevention activities that would reduce behavior risk factors.

The proposed research is a great opportunity to extend the best practices of the U.S. health system to a country with a health system in transition, and to share knowledge in the field through collaboration with U.S. colleagues.

In terms of evaluation and dissemination study the Ministry of Health of the Republic of Moldova can use results in order to achieve the objectives provided by the National Strategy for Prevention and Control of Non communicable Diseases (2012-2020) [16]. Also, study results may be brought to the attention of the U.S. state legislators, CDC (state coordinator) as an opportunity of the BRFSS experience sharing with another European country.

V. CONCLUSION

Recommendations for new implementation:

1. The new proposed population survey system should be created on the nine attributes defined by the CDC's Guidelines for Evaluating Public Health Surveillance Systems. It also can be used as a basic existing program like the U.S. BRFSS. It is cost- effective to use an existing and adapted system.
2. The BRFS systems will be used as a tool to guide government and public health officials in decisions related to behavior risk factors, the need for intervention, and public health policy.
3. The BRFS systems will produce valid data in a timely manner at the lowest cost possible to decision makers and the community.
4. The surveillance at the local level will have several benefits such as: the identification of local detailed needs versus state general needs. Data should be collected, analyzed, and used for planning, implementation, and evaluation of public health programs. The needs assessed by state-level surveillance could not be able to identify those local needs in order to target them with effective interventions reducing the prevalence of diseases and disabilities.
5. The survey should be easy to manage with the interview duration of a maximum of 20 minutes. Construction of questionnaires will include questions that facilitate the measurement of risk factor behaviors and contain fixed core components and optional modules. Questionnaires should consist of simple and understandable questions that are close-ended and utilize multiple-choice options without specific medical terminology language.

6. Collecting data with mixed mode approaches including land telephone, mobile phone and online surveys. Continual surveillance will increase the community response rate of the survey.
7. Interviewers from the community can explain any ambiguity in the design of questionnaires, reduce barriers in communication, encourage participation in the survey, and relate more effectively to the population.
8. Electronic data collection from reporting sources and via the Internet and electronic data integration and interchange by surveillance systems will promote availability of information and access to data.
9. The management of surveillance system should encourage providers' involvement: physicians, nurses, and health workers provide trust and confidence in the program for the community. They know their communities and the best way to reach them thereby becoming instrumental in promoting the participation in the surveillance system.
10. The management of surveillance system should encourage community involvement: participation of the community and community organizations will produce a higher response rate of surveys and a greater collection of data. Increased response rates can promote the implementation of public health programs to target specific needs of the community.
11. Continuing education for Behavior Risk Factors Surveillance Systems staff: conferences, courses, webinars, forums, and workshops will increase knowledge and skills of people involved in the surveillance systems and improve their capacity for analysis and interpretation of data.

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