DOI:10.35845/abms.2022.2.264

EDITORIAL

Advances in Basic Medical Science

Biosecurity: From Policy Formulation To Implementation - A National Issue With Global Impact

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Pakistan is an important geostrategic and geopolitical country, unique in its cultural and religious sensitivity. It has a low socio-economic status, low literacy rate, high gender biasness and has been prone to both natural and man-made disasters.[1] The country's geographical boundaries historically exposed it to general security risks, including the biosecurity threats. In order to ensure maximum defense against biosecurity threats, a system of bio-preparedness is a pre-requisite. It has been witnessed during COVID-19 pandemic that the biohazards, whether man-made or natural, know no boundaries and the spread of contagion across the global is a matter of days. Therefore, being prepared is pertinent for the national security as well as for the safety of global population.

Currently biosafety practices, their implementation and management are adequately conceptualized, practiced and improved significantly during pandemic in many Pakistani institutions. Some private organizations and dedicated professional societies are working diligently for improving current biosafety practices further. International guidelines on laboratory biosafety are available and many institutes are setting up their Institutional Biosafety Committees (IBCs).[2-5] On the other hand, the link of biosafety to biosecurity is least understood even among the technical community. According to some unpublished observations, the biosecurity risks and threats are never been taken seriously into consideration during planning and execution of projects at academic and research institutions and at government level, nor its impact in the future is envisaged.[6] Dual Use Research of Concern (DURC) and Institutional Review Entities (IRE) for reviewing research projects from biosecurity perspectives are hardly known concepts by majority of the concerned institutions and researchers, and is not regarded as something of high significance by the institutional policy makers. As a result, the biosecurity practices becoming unsatisfactory. For instance, some high-risk samples lying at unsecure and unrestricted access areas in laboratories have been witnessed frequently in many institutions.[6]

Pakistan, being a state party of the Biological Weapon Convention (BWC) and Cartagena Protocol on Biosafety (CPB), and signatory of many international treaties, is expected to intercalate biosecurity and bioweapons concept into its national policies.[7-9] Not only these concepts need to be made clearly understood by the concerned but the international regulations need to be understood and be kept in view while planning and executing research projects.

In December, 2017 the Ministry of National Health Services Regulations and Coordination, Government of Pakistan published National Laboratory Biosafety and Biosecurity Policy.[10] In this policy document, ten different areas have been addressed and focus principally on biosafety where biosecurity, rather information security, is only barely touched. However, the SWOT analysis in this only national document indicates limited strengths, several weakness and inadequate opportunities. Additionally, the results of this policy cannot be witnessed due to persistent threat such as governance system instability, lack of political will, lack of biosecurity culture and less or no interest of the government functionaries. There is no clear-cut biosecurity policy in Pakistan at present and the irony is that this need is not realized at the prominent policy making platforms. In this era of predictable threats, every moment is crucial if we further delay the formulation and implementation of a reasonable biosecurity fool-proof system in the region. This situation demands immediate actions to cultivate a sustainable biosecurity culture and implement systematic framework to cater biosecurity challenges.

Some possible ways to address this national issue of possible global impact can be the following. A central regulatory as well as monitoring body with comprehensive "Biosecurity Focused" policy and short- and long-term plans that keeps a check over the potential biosecurity threats, is required at the government level. Understanding biosecurity at the academic, governmental and political level will help to deliver its full potential for global health security. The political domain could be comprised of national law-makers who work in close coordination with the government functionaries. Multiple stakeholders from both public and private sectors should come together for formulation of policy documents and subsequent implementation strategies. Representative from the top management of the higher and basic educational institutions, biological and life sciences research institutes, hospitals and tertiary healthcare facilities (urban and rural), commercial medical and veterinary diagnostic facilities, commercial production facilities, government bodies (local, provincial and federal administrative

This editorial may be cited as: Hafsah Muhammad. Biosecurity: From Policy Formulation To Implementation - A National Issue With Global Impact. Adv Basic Med Sci. 2022; 6(2): 23-24, DOI:10.35845/abms.2022.2.264

offices concerned with health), civil society representatives, religious leaders and personnel from media (electronic and print) needs to be taken on board for this purpose. Youth, as already identified by the Youth Declaration on Biosecurity, is one of the most important groups to be addressed in terms of awareness raising and educating on biosecurity.[11]

The most essential element for addressing biosecurity issues in a sustainable way, is the development of responsible biosecurity culture, considering it equally about personnel mindset and ethics as it is about rules, regulations and legal obligations. Therefore, a possible solution is to make the community of healthcare practitioners, life-scientists and laboratory workers, specifically the youth, aware and conscious of the security threats associated with routinely-used biological material in their laboratories for research and diagnostic purpose. An initiative can be taken to conduct a series of awareness raising activities at different fora focusing different aspects of biosecurity such as international regulations about biological weapons in the light of authentic documents.[7-10] A facilitative and supported discussion forum is also proposed in which the early-stage life-sciences researchers can be sensitized and mobilized to read and discuss the BWC articles and other such documents in detail, evaluate the possible implementation strategies and present it to the relevant audience at local, national and international levels.

The outcomes of such efforts will be fruitful in both short and long term. We can expect cultivation of biosecurity culture at different levels in the higher education institutes. The research students and faculty with clear concepts of biosecurity and DURC, will, in turn, help maintain biosecurity culture and provision of networking opportunity for those with increased interest in the subject. Similarly on broader scale, long-term outcome would be the inclusion of biosecurity curriculum in all life science disciplines, integration of biosecurity concept at policy level and development of national legislation and policy to focus on biosecurity. Such steps need to be taken immediately to raise the upcoming generations of biologists and law makers in a way that they can effectively tackle the biosecurity challenges and threats regionally and globally.

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CONFLICT OF INTEREST

Author declared no conflict of interest

GRANT SUPPORT & FINANCIAL DISCLOSURE

Author declared no specific grant for this research from any funding agency in the public, commercial or non-profit sectors