Point-of-Care Testing and Equity

A Natural Niche

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Health inequity is the existence of systematic variations in the health status or the distribution of health resources between different population groups.[1] Inequity is not a phenomenon of nature, rather a consequence of persistent socioeconomic disadvantages and political injustices. It is present in all countries, albeit to different degrees; it is a significant obstacle to delivery of care, including point-of-care testing (POCT), and to improvement of health outcomes at various levels. The link between inequity and POCT is a direct one: inequity hinders effective POCT services, while effective POCT services help reduce inequity. Proximity to the patient in space and time lends itself to overcoming geographic, socioeconomic, cultural, literacy, racial biases, and many more barriers to access health care if applied effectively. Furthermore, advances in miniaturization of complex technology such as molecular tests, multiplexing, minimally invasive and noninvasive sampling techniques, and developments in connectivity and information technologies only enrich the possibilities. POCT can catapult efforts to tackle inequity and redress the balance in health care delivery.

In practice, implementing POCT starts by outlining gaps in the delivery of laboratory services such as can be identified by mapping out regional small world networks (SWNs: geospatial health care ecosystems),[2] which can be used to assess health care services: for example, hospitals and ambulance transport routes. Gaps can then be addressed by creating hubs, satellite and mobile laboratories with POCT to bridge time and space. Knowledge of the geography of an SWN informs of obstacles for patient and sample transportation and solutions to overcome them.[2] Implementing POCT at home or in the primary care setting closer to the patient supports clinical care pathways that ensure timely management. Alternate care facilities with POCT house patients instead of hospitals and reduce the need for transportation, allowing management closer to their families. Isolation laboratories with POCT could support public health efforts in containing highly infectious diseases at times of epidemics. Roaming POCT in ambulances is common practice in developed countries and allows paramedics to administer preliminary life-saving measures. Connectivity is an important attribute facilitating continuity of care and real-time management. POCT devices can be linked to smartphones and tablets with Web- or cloud-based connectivity (eg, Wi-Fi and Bluetooth), allowing automatic capture and storage of results.[2]

Beyond communities in rural and remote areas geographically lacking in adequate health care services there are communities with higher levels of deprivation: some with nonexistent medical and laboratory services, others being socioeconomically marginalized within established systems, and some displaced by natural or man-made disasters. For POCT to play its part in addressing inequity effectively, especially in such challenging environments, it cannot be considered in isolation. It needs to be planned and implemented as part of a wider collection of complementary policies that address sociologic and educational factors embedded within strategies that support effective clinical platforms including care pathways and conducive living environments such as reliable electricity and clean water supplies.

Presence of a POCT system does not lead to an automatic buy-in from all concerned target groups. An appreciation of the psychology of the disenfranchised and stigmatized is important if POCT (or any health care service) is to be successfully implemented. Knowledge of history and cultural beliefs is important but not sufficient. If proper testing practices are to permeate and subsist, communication gaps should be bridged and mutual trust built. Furthermore, education in health literacy is critical if patients are to make the right choices and if efforts to implement POCT are to be fruitful long-term. Compassion, trust, and respect pave the way. These angles may be underestimated or perceived as unnecessary or beyond the brief of a POCT practitioner. It remains for the POCT practitioner to determine their level of commitment to equity and to impactful POCT practices.

To address both acute and chronic diseases, actual delivery of POCT requires governance and policies that support sustainable funding frameworks, quality and risk management systems, training, supply chain, connectivity, and equity assessments. Tools, embedded within the governance structure, to assess the effectiveness of POCT, are needed. These tools would ensure that the POCT service is achieving its intended purpose and that gaps are detected

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sooner rather than later. Policies should be integrated vertically with all relevant services and horizontally to ensure comprehensive needs provision. It is noteworthy that policies are often put in place intuitively or ad hoc by planners who are not themselves affected by inequity, and sometimes influenced by political agendas. Standardized, transparent, and more encompassing ways to study policy options such as multicriteria decision analysis methods,[3] World Health Organization–Choosing Interventions That Are Cost-effective (WHO-CHOICE),[4] and equity assessment tools[5] should be encouraged. This would ensure that the method and scope of application is fair, fit-for-purpose, and sustainable.

Unfeigned resolve to address inequity would be reflected in regulations and policies at all levels: ministries, districts and hospitals, primary health care, schools and school clinics, community and faith based institutions; all and any relevant establishments.

> *"...the health sector needs to understand the imperatives of other sectors and form common understanding of health, its determinants and broader societal well-being or quality of life."*
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> —World Health Organization[6]

POCT is not without its commercial and consumer considerations. The capacity to purchase a POCT device is the rightful choice of the able. Consumerism and inequity contrast in that consumerism is based on choice and capability, while inequity is based on fairness and social justice. If consumerism is not balanced by measures to tackle inequity, the gap in health care services between the able and unable would widen. Industry providers will have their own commercial considerations and will be cognizant of their profit margins. For example, a need for POCT for genetic diseases[7] does not mean the number of these patients supports any economy of scale. One approach to address these issues is active partnering between industry and funders to support mutually cost-effective POCT for such underserved groups of patients.

Near-patient testing is but one aspect of laboratory testing and health care but it is growing and equity is its natural niche. Our contribution as POCT providers is to prioritize equity-in-action and only then would we be doing our part at redressing the balance.

> *"If you think you are too small to make a difference, you haven't spent the night with a mosquito."*
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> —African proverb quoted by the Dalai Lama XIV[8]

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