

Knowledge Economy and Its Impact on the Development Progress of Transfusion Medicine in Poor Economic Nations

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EXECUTIVE SUMMARY

The chapter will provide a global situation analysis, describe the key elements of knowledge economy in the healthcare and transfusion medicine field, and analyze the impact of the knowledge economy on the pace of development progress of national blood supply and transfusion structures. The authors will provide examples to illustrate the case of applying knowledge economy principles to advance the safety and availability of blood products in clinical healthcare and hence the economy of care. Recommendations on how to improve will be described.

INTRODUCTION

Since the first World Health Assembly (WHA) Resolution on blood safety and availability in 1975 WHA28.72 ‘Utilization and Supply of Human Blood’ (WHA, 1975) and the mapping of the blood supply and transfusion in the world in the 1980s (WHO, 1988), much has been done and achieved. Further exploration of the existing situation in the healthcare and supportive services, however, disclosed major gaps in the low- and medium human development index (HDI) (UNDP, 2020) group of countries, home to close to 84% of the global population. Apart from the weak governance and regulatory structures, the

fragmented blood procurement and supply structures, a major gap disclosed is in the existing knowledge and the approaches to knowledge economy.

The 2018 United Nations Development Program statistical update report ‘Human Development Indices and Indicators’ (UNDP, 2018) presents clearly that the lower the HDI the greater the decrement in secondary and particularly tertiary (higher education, medical school, university) education enrolment. Tertiary education in the very high-HDI countries shows 72% enrolment, where enrolment in the medium and low HDI parts of the world, respectively is only 24% and 8%, and enrolment in the high HDI countries is 50% (Table 1).

Table 1. UNDP (2018) education enrolment rates of school-age populations (%) in the 4 HDI groups for primary, secondary and tertiary education

Human Development Groups	Education Enrolment Ratio		
	Primary School-Age Population (%)	Secondary School-age Population (%)	Tertiary School-Age Population (%)
Low HDI	98	43	8
Medium HDI	110	73	24
High HDI	103	96	50
Very-High HDI	102	106	72

Most vocational and medical schools and universities (higher and tertiary education) in a large proportion of developing countries are relatively young and date back to the last part of the colonial era, the second half of the 19th and the first half of the 20st century. This illustrates the impressive paucity in education, hence knowledge and a weak economy of available and accessible knowledge.

The root cause analysis discloses a major area of attention to bridge and narrow the existing knowledge gap. Education in these countries has been focused almost exclusively on vocational education of laboratory skills (testing and processing) with limited theoretical attention (knowledge), and rudimentary attention to topics such as governance, human capacity investment and appropriate clinical use of blood (WHO, 2017). The World Health Organization (WHO), over the past three decades, has designed a series of useful educational materials, the Distance Learning Material (DLM) (WHO, 2021b) and an excellent Quality Management Training (QMT) (WHO, 2015) material focused on the various elements of the blood supply and clinical use to improve on knowledge and initiate development. Many other organizations and institutions have also contributed to the spread of knowledge and skills through countless workshops, seminars, courses, and short-term consultations. The Education Subcommittee of the AABB Global Transfusion Forum recently published the outcomes of two surveys (Al-Riyami et al., 2021; Rambiritch et al., 2021). The first focused on undergraduate medical school students among 32 medical schools in 18 countries belonging to the medium-, high- and very high-HDI categories. The second focused on laboratory professionals who attended a vocational school in 6 countries in Africa, belonging to the low-, medium- and high-HDI categories and representing 10 blood establishments and 2 blood banks. These outcomes justify the conclusion that education needs an environment and climate to grow into an effective knowledge economy at primary, secondary and tertiary education level, and

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