Chapter 3
Hierarchical Planning Models for Public Healthcare Supply Chains

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ABSTRACT

This chapter focuses on the hierarchical planning and execution for supply chain management in public healthcare services. The authors first introduce tiered organizational and services delivery structure of public healthcare services followed by various supply chain issues that public healthcare services encounters. They then review hierarchical planning and execution discussions for the strategic, tactical, and operational decisions in supply chain literature. They continue the discussion with public healthcare services cases on medicine and equipment maintenance supply chains. They compare hierarchical planning execution discussions in supply chain management literature vis-a-vis healthcare services cases. Their main argument is that much can be gained by the public healthcare services by striving for reduced information asymmetry and employing appropriate functional aggregation at various levels of the hierarchically organized public healthcare supply chains.

PUBLIC HEALTHCARE SERVICES

Health is an indicator of an individual's quality of life, and access to healthcare services is one of the fundamental rights of human beings (WHO, 2017). With the advancement in technology, healthcare services have become quite specialized and the cost of healthcare has increased to unaffordable levels. The provision of quality and sustainable healthcare services is a huge challenge for organizations and governments, especially in the developing countries. Public healthcare comprises of complex chain of community workforce, with primary, secondary and tertiary level healthcare facilities to provide preventive, curative and specialized healthcare service delivery (Min, 2014). This service delivery chain or healthcare supply chain is supported by a network of government, semi-government and private organizations. The main objective of every healthcare system, particularly public healthcare system is the provision of best quality healthcare services to the patients at an affordable cost. To achieve this, healthcare organizations have to plan purposefully and to use their available resources efficiently while ensuring that healthcare services are accessible to all (Min, 2014). Public healthcare systems are organized in a tiered manner so that healthcare services reach across the population and that they are effectively managed.

Table 1. Types of Healthcare Services

	Examples of institutions	Examples of healthcare professionals
Primary care	Doctor's offices, clinics, schools, prisons, mobile vans	Family physicians, nurse practitioners, physician assistants, pediatricians, obstetricians, gynecologists
Secondary care	Community hospitals, specialty (e.g., cancer) clinics, diagnostic imaging labs, magnetic resonance imaging labs, intensive care units	Internists, cardiologists, oncologists, ophthalmologists, endocrinologists, dermatologists, geriatricians, orthodontists, neurosurgeons, orthopedic surgeons, psychiatrists
Tertiary care	Regional medical centers, medical schools, burn centers, birthing centers	Specialists, medical researchers, occupational therapists
Preventive care	Public health organizations, wellness and fitness centers, pharmacies	Chiropractors, fitness instructors, clinical dieticians, epidemiologists
Outpatient care	Nursing homes, assisted living facilities, outpatient surgical centers, rehabilitative centers	Hospices, care givers, nurses
Emergency (urgent) care	General hospitals, satellite clinics, ambulances, trauma centers	Paramedics, ER doctors

(Source: Min, 2014)

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