ABSTRACT: Workflow Mapping for Paediatric Vaccination Process in the United Kingdom (UK): A Precursor of a Time and Motion (T&M) Study

Authors

S Mokiou¹, E De Cock², B Standaert³

¹ United BioSource Corporation, London, UK
² United BioSource Corporation, Barcelona, Spain
³ Health Economics Department, GlaxoSmithKline Vaccines, Wavre, Belgium

Objectives

Time and Motion (T&M) methodology allows quantifying time–related outcomes for a health care delivery process by disaggregating the process in its constituent parts to measure task durations. The design of a T&M study requires early process mapping to define the time outcomes to be measured. The mapping of paediatric vaccination process in the United Kingdom (UK), as a precursor of a real–world study, is described.

Methods

A targeted review of publicly available information was conducted to gain comprehensive understanding of the paediatric vaccination process in the UK. A survey was designed eliciting the chronology of vaccination process prior to and on vaccination day, including estimates of active healthcare professional involvement. Face–to–face interviews with a nurse were conducted at three general practitioner surgeries routinely performing vaccinations. A
subsequent follow-up call with each nurse was also arranged. Descriptive statistics were generated and preliminary cost calculations made.

**Results**

Paediatric vaccination process can be broken down in 6 and 8 clearly discernible steps prior to and on vaccination day, respectively. Activities prior to vaccination day include, among others, inventory, ordering, cold-chain management and are typically for multiple subjects. Mean time for those activities, recalculated per single vaccination visit, was 6.7 minutes, of which 61% dedicated to administrative duties. Activities on vaccination day include, among others, room preparation, consultation, vaccine administration. Estimated time per single visit totaled 25.4 minutes. Estimated total cost per single vaccine administration, with nurse salary cost from PSSRU, was £10.4. Costs may vary substantially depending on the level of “on-costs” to nurse’s gross salary.

**Conclusions**

The detailed mapping of paediatric vaccination process in the UK identified clearly discernible tasks, time estimates, factors impacting variability of time outcomes, and early cost estimates. This forms the basis of a real-world T&M study aiming to generate robust time and cost outcomes.