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Map of Different Vaccine Supply Chain Efficiency Measures

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Although a number of seemingly disparate measures are being used to evaluate different aspects of vaccine supply chain operations, it may be unclear how they fit together and may overlap. Through our work on vaccine supply chains over the past eight years, our HERMES Team (1) assembled a list of measures that have been used (defined in Appendix 1)[1, 2]; (2) determined how these measures relate to one another; (3) grouped the measures into those that represent the supply side, demand side, and four domains that incorporate both (agility, costs, resource utilization, and demand fulfillment); and (4) added arrows to represent the relationships between the measures, with each connection labeled as positive (i.e. as one component increases, the other component also increases) or negative (i.e. as one component increases, the other decreases). The diagram shows how some measures are actually calculated or derived from other measures (e.g. total cost per dose administered incorporates logistics costs, vaccine procurement costs, and doses administered). With this map, decision makers such as immunization program managers, ministries of health, and non-governmental organizations can determine whether they are collecting duplicative information, missing measuring certain domains, or could use alternative measures to capture the same or more information.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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References

1. Chopra, S., Meindl, P. Supply Chain Management: Strategy, Planning, & Operation. Third. Pearson Education; 2007.
2. UNICEF, World Health Organization. Guidance on dashboards for immunization supply chains (DISC). 2015

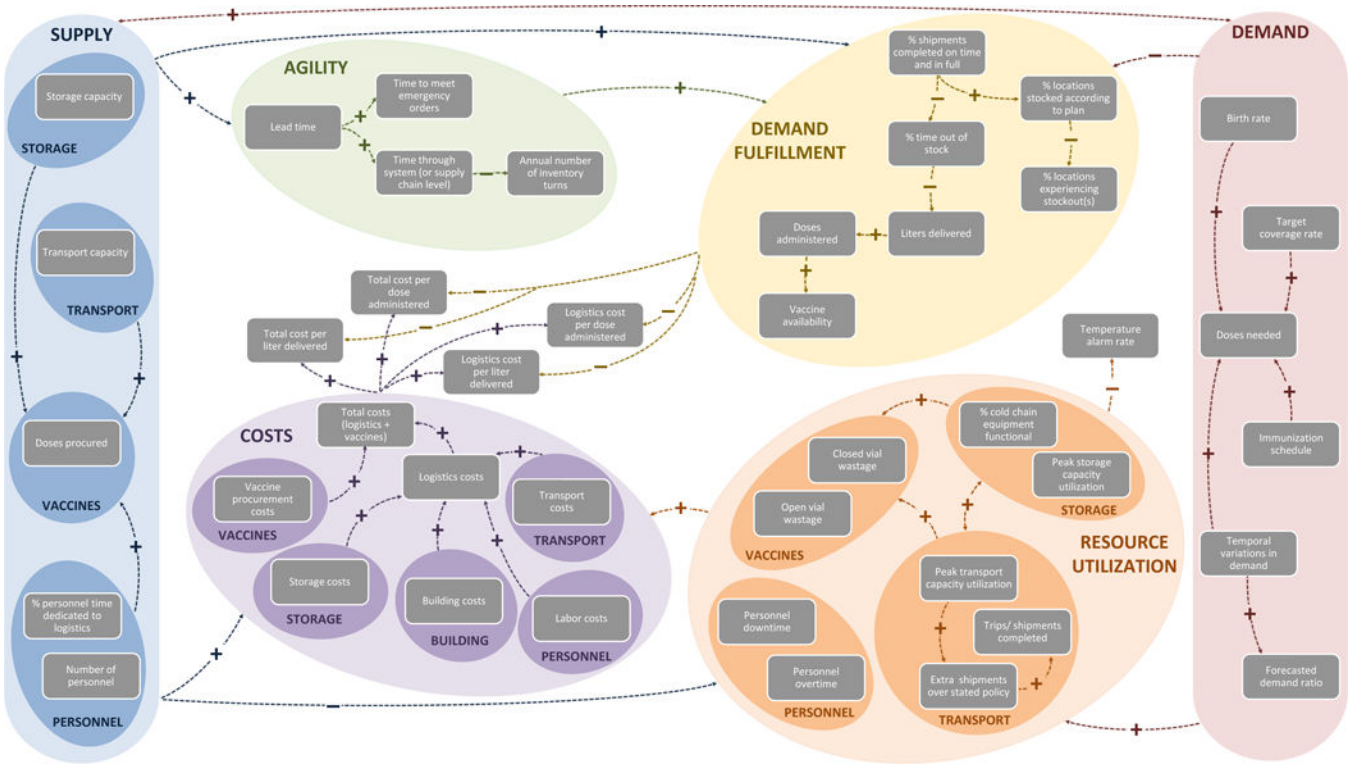

Figure.