
GLOBAL
HEALTH
SUPPLY CHAIN SUMMIT

The Return on Investment for Public Health Supply Chains –

Applying Private Sector Best Practices in the Public Sector

Edward Wilson,
John Snow, Inc.

STRONG SYSTEMS SAVE LIVES

JSI improves health logistics in Africa, Asia, Latin America, the Caribbean, Eastern Europe, and Eurasia.

We strengthen supply chains end-to-end by building systems that connect manufacturers, funders, IT experts, health ministries, pharmacies and communities.

JSI creates sustainable systems that draw on >30 years of strong relationships with country governments, commercial sector, civil society, academia, and the donor & multilateral communities.

We are leading the way on more than **30 current SCM projects**, with $3B+ of health procurement experience on 125 SCM projects implemented in >100 countries.

We are passionate about using our public health and supply chain expertise to help our partners eradicate malaria, increase access to contraceptives, improve routine immunization.

ECONOMIC EVALUATIONS: PRIVATE SECTOR ANALYTICS TO IMPROVE PUBLIC HEALTH SUPPLY CHAIN PERFORMANCE

To determine how best to strengthen health supply chains as a means toward more accessible, affordable, and higher quality health products and services

With limited funds, stakeholders are asking:

- Where to invest ?
- How much to invest ?
- What is the expected result ?
- What is the case to invest in x vs. y intervention?

Public health supply chains are assessing:

- Cost benefit
  - Return on investment (ROI)
  - Value for money
- Cost effectiveness

LEADERS IN APPLYING ECONOMIC EVALUATION INTERVENTIONS IN PUBLIC HEALTH SUPPLY CHAINS

JSI and Avenir have taken the lead in exploring the application of economic evaluations for supply chains

We've informed decision-makers in:

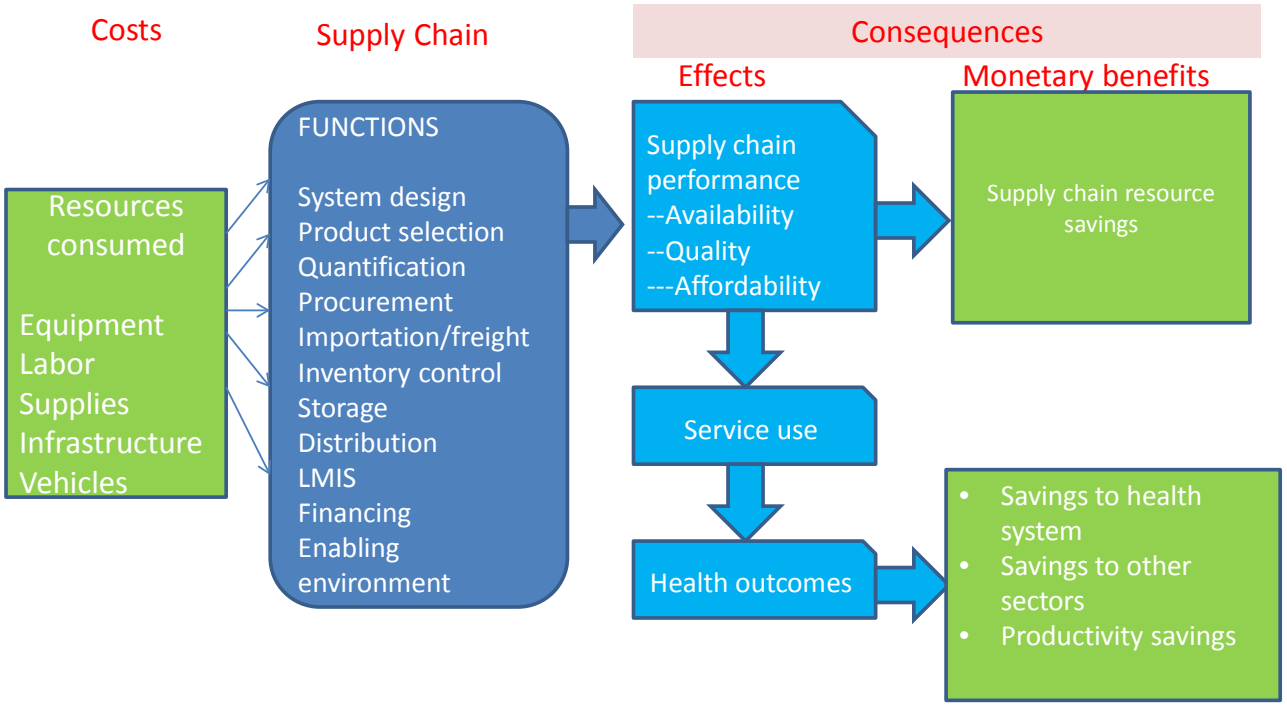
- Tanzania
- Nigeria
- Zimbabwe
- Ghana
- Rwanda
- Others

Results of our work include:

- Creating baselines for performance measurement
- Shaping expectations for future performance
- Identifying the level of continued investment needed to sustain performance gains
- Making the case for funding/investment

WE APPLY A ROBUST ECONOMIC EVALUATION APPROACH TO SOLVE PUBLIC HEALTH SUPPLY CHAIN CHALLENGES

Components of economic evaluation of supply chains



- Linking the costs of resources and functions to supply chain performance and outcomes

- Modeling the monetary benefits across supply chain resources and health systems

Facilitates analysis with:

- Baseline performance
- Scenario planning
- System comparisons

IN ZAMBIA, WE USED COST EFFECTIVENESS TO INFORM THE SUPPLY CHAIN DISTRIBUTION MODEL

	No data	New data-driven models	
	Existing model	**Model A**	**Model B**
District monthly supply chain cost ($)	3,878	7,357	7,849
Average stock availability (%)	79	82	91
Average cost effectiveness rate ($)	49	90	86
Incremental cost effectiveness rate ($)	N/A	14.50	4.18
		slightly less expensive than model B, but produced only 82% stock availability	most costly but produced 91% stock availability for an average of $86 per percentage point of stock availability

IN TANZANIA, WE USED COST EFFECTIVENESS TO QUANTIFY THE COST AND PERFORMANCE IMPACT OF SUPPLY CHAIN SYSTEM ENHANCEMENTS

Existing System

- Fragmented supply system with uncoordinated management
- Largely paper-based MIS w/data of poor quality and availability

Leading to…

- Poor stock availability
- Low client service levels
- High costs

Enhancements

Logistics Management Unit (LMU)

Electronic MIS for commodity logistics (eLMIS)

Performance Results

	Baseline	Round 1
Total annual cost (USD)	59	63
Value of handled commodities	208	251
Cost per value of commodities	28%	25%
Supply chain performance	69%	77%
Cost per value of commodities *adjusted for performance*	42%	31%

Improvements across all measures from baseline to round 1

WHAT'S NEXT: THE BIG "SO WHAT" QUESTIONS REMAIN…

What is the link between supply chain investments, supply chain performance and health outcomes… if you spend a dollar to improve supply chains, how many lives do you save?

How do supply chain investments stack up against investments in the other health systems building blocks – human resources, infrastructure, services, etc.?

WHY? AND WHO CARES?…

- The need to justify supply chain investment in the context of other health interventions and considering finite resources
- The importance of understanding if/how supply chain investments translate into health impact/achievement of health related SDGs
- Provides body of evidence and fills research gap

Challenges in answering these 'macro' questions

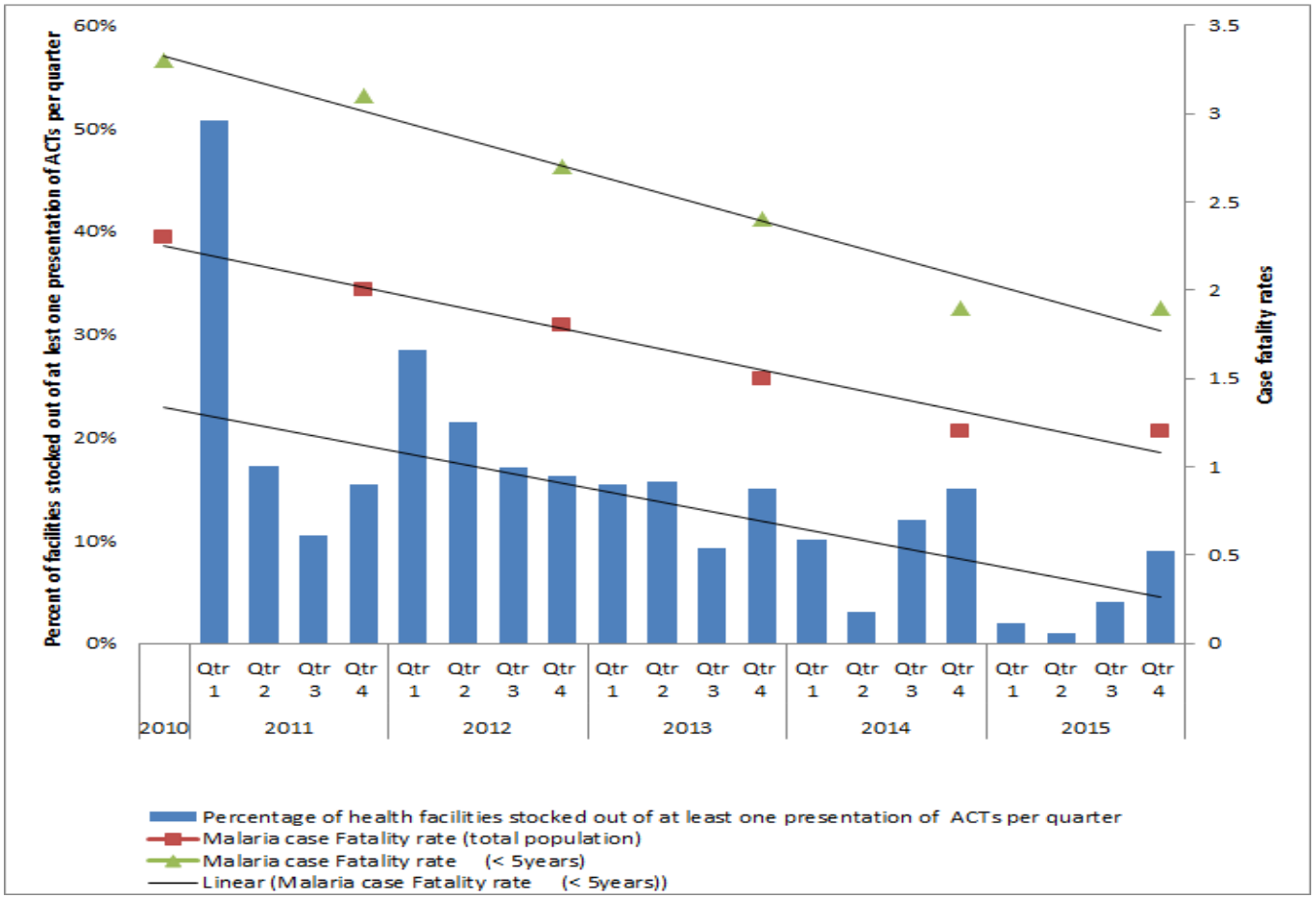
- quantifying the contribution of supply chain outcomes – an indicator like product availability – to health outcomes
- generating and sustaining stakeholder support for SC initiatives
- balancing short- and long-term health system needs and investment requirements

HOW WE ARE ANSWERING THESE "BIG QUESTIONS"

JSI and Avenir – in our next phase of this work, we are exploring these unanswered questions

Building on earlier country-specific works to incorporate economic evaluation analyses…	Continue to support and participate in the Community of Practice: SC Costing Users Group (SCUG)	Building on MGD research and findings to estimate requirements to achieve SGDs
Enhance what we already know about those contributions	***Share learnings and enable users with robust tools***	***Create scenarios to plan and advocate for resources***

IN MALARIA SUPPLY CHAINS, DECLINES IN STOCKOUTS LINK TO DECLINES IN CASE FATALITY RATES



Data show that increased commodity availability over time – *through better supply chain performance* – correlates to reductions in fatality rates for malaria cases

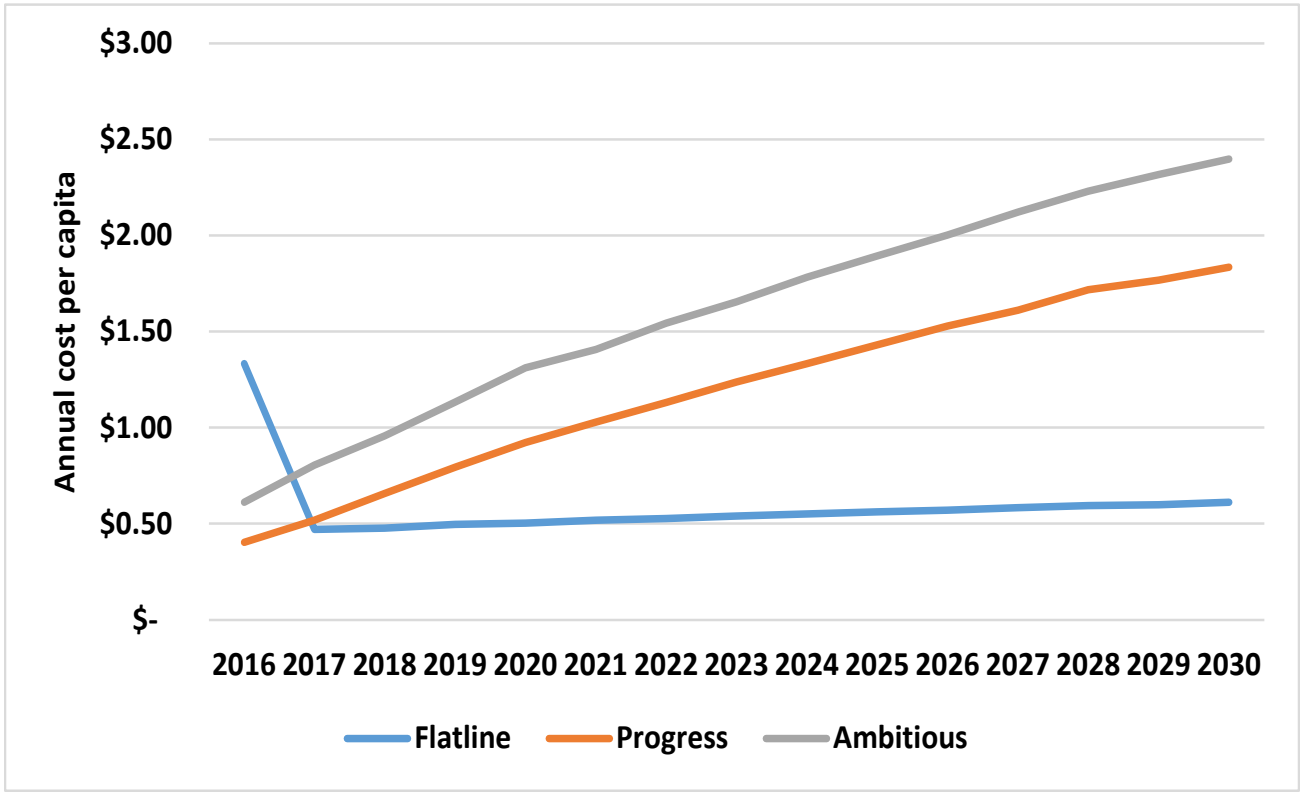
MODEL-BASED ESTIMATES OF BENEFITS OF FAMILY PLANNING SUPPLY CHAIN STRENGTHENING

Intervention	Cost per DALY averted in $US
Insecticide-treated bed nets	13-20
Malaria prevention for pregnant women	29
Tuberculosis treatment (epidemics)	6-60
Family planning supply chain strengthening	24
Modern contraceptive methods	62
Antiretroviral therapy (Africa)	252-547
Bacille Calmette–Guérin (BCG) vaccination of children	48-203
Oral rehydration therapy	1,268
Cholera immunization	3,516

Source (for interventions other than supply chain strengthening): Singh et al 2009.
Sources: Futures Institute 2011

Data also indicate that health outcomes resulting from strengthening family planning supply chains may be achieved at a lower cost than some other public health interventions

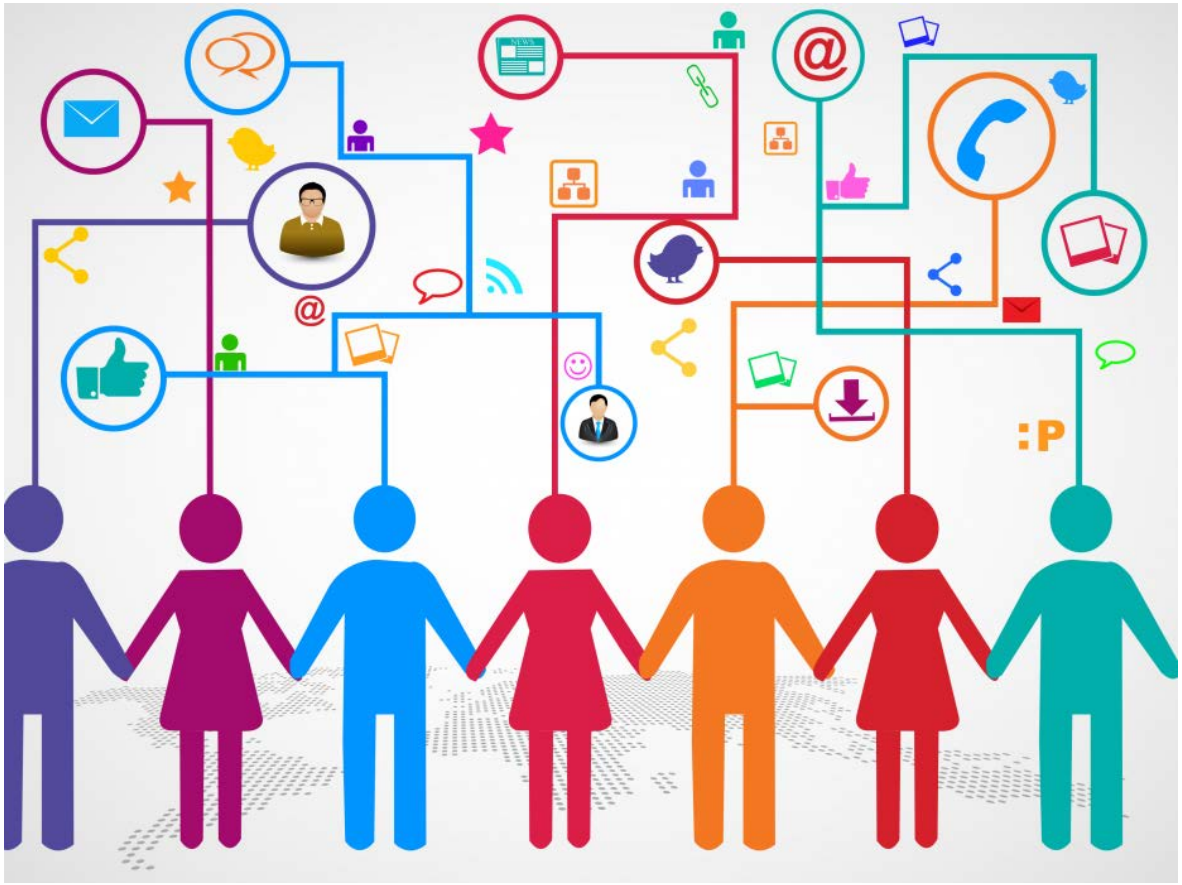
ESTIMATING SUPPLY CHAIN COSTS ASSOCIATED WITH ACHIEVING SDGS



Preliminary research on costs to achieve SGDs estimates per capita costs per year ranging from $0.40 to $2.40 using various scenarios

Source: Rosen et al. 2016 in draft. *Estimating Supply Chain Costs Associated with Achieving the Sustainable Development Goals in 67 Countries*.

JOINING FORCES TO SOLVE THE PUZZLE



UP FOR DEBATE….

- What are the outstanding question we need to answer ?
- What else can we do to better link supply chain investment to health outcomes ?
- How do we overcome the challenges ?
- What can we learn from industry ?

And importantly….

- ***What is the cost of not investing in public health supply chains ?***

ROBUST ECONOMIC ANALYSIS SUPPORTS INVESTMENT IN PUBLIC HEALTH SUPPLY CHAINS

Investment in public health supply chains is necessary to support product availability, ultimately leading to…	sustainable improvements in health outcomes
Thoughtful, strategic, and data-driven investments in supply chains can…	accelerate innovation and improve performance
Providing methodologies and data to measure and track investments….	supports stakeholder engagement and alignment of short- and long-term expectations among partners
Stakeholders can leverage the results of such analyses for…	data-based planning and advocating for budgets and funding both internally and externally

THANKS TO OUR GENEROUS SPONSORS