A Risky Business
Improving Global Health
through Better Demand Forecasts

Ruth Levine
Center for Global Development
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Today’s Presentation

- A new global health environment
- Sad stories
- Definition of demand forecasting
- Importance of the problem of weak forecasting
- Understanding what’s “under” the problem we see
- What can be done to solve the problem?
New Global Health Environment

- New money
- New suppliers
- New products
- New buyers
- New intermediaries and roles
AIDS, TB & Malaria Funding (2001-2007)

Sources: PEPFAR, Global Fund & World Bank
Suppliers: New Players and Products

- New suppliers from many countries
- New products with special characteristics
- Variable quality

Greater competition and reduced prices in some markets and for some products
Complexity for buyers
Uncertainty in quality supply
<table>
<thead>
<tr>
<th>MMV Products - Anticipated Regulatory Approval by 2008</th>
<th>R&amp;D Development partners</th>
</tr>
</thead>
</table>
| **CDA (Chlorproguanil-Dapsone-Artesunate)**: a fixed-ratio three-drug combination, being developed to treat uncomplicated *P. falciparum* malaria. | •GlaxoSmithKline UK  
•Liverpool School of Tropical Medicine UK;  
•London School of Hygiene and Tropical Medicine, UK  
•TDR, Switzerland |
| **Eurartesim (Dihydroartemisinin-Piperaquine)**: a fixed-ratio drug combination being developed to treat uncomplicated *P. falciparum* malaria in adults and children. | •Holley Pharma, China  
•Oxford University, UK  
•Sigma-Tau Industrie Farmaceutiche Riunite, Italy |
| **Paediatric Coartem® (Artemether-Lumefantrine)**: a paediatric dosage suitable for infants and children as small as 5kg. | •Novartis Pharma, Switzerland |
| **Pyronaridine-Artesunate**: a low-cost, fixed-ratio combination, for the treatment of acute uncomplicated malaria in Africa and Asia (*P. falciparum* and *P. vivax*). A paediatric formulation for children of <10kg body weight will also be developed. | •Shin Poong Pharm. Inc., Korea |
New Buyers
Complex In-Country Supply Chains

Commodity Logistics System in Kenya (as of April 2004)

Commodity Type (colour coded)
- Contraceptives and RH equipment
- STI Drugs
- Essential Drugs
- Vaccines and Vitamin A
- TB/Leprosy
- Blood Safety Reagents (inc. HIV tests)
- Malaria
- Anti-Retro Virals (ARVs)
- MOH Equipment
- Laboratory supplies

Organization Key
- Government
- World Bank Loan
- Bilateral Donor
- Multilateral Donor
- NGO/Private

Source of funds for commodities
- USAID
- KfW
- EDF
- UNFPA
- DFID
- WHO
- GOK
- UNICEF
- MEDS
- CDC
- GOK, WB, IDA
- US Gov
- Global Fund for AIDS, TB and Malaria
- MSF

Procurement Agent/Body
- USAID
- KfW
- EDF
- UNFPA
- DFID
- WHO
- GOK
- UNICEF
- MEDS
- CDC
- GOK, WB, IDA
- US Gov
- Global Fund for AIDS, TB and Malaria
- MSF

Point of first warehousing
- KEMSA Regional Depots
- KEMSA Central Warehouse
- KEPI Cold Store
- MEDS
- NPHLS store

Organization responsible for delivery to district levels
- KEMSA and KEMSA Regional Depots (essential drugs, malaria drugs, consumable supplies)
- JSI/Deliver/KEMSA Logistics Management Unit (contraceptives, condoms, STI kits, HIV test kits, TB drugs, RH equipment etc)
- KEPI (vaccines and vitamin A)
- MEDS (by Mission facilities)
- Provincial and District Hospital Laboratory Staff

Organization responsible for delivery to sub-district levels

Mainly District level staff: DPHO, DPHN, DTLP, DASCO, DPHO, etc or staff from the Health Centres, Dispensaries come up and collect from the District level

Commodity Logistics System in Kenya (as of April 2004) constructed and produced by Steve Kinzett, JSI/Kenya - please communicate any inaccuracies to skinzett@cb.jsikenya.com or telephone 2727210
Sad Stories

- WHO estimates of demand for Coartem fell short by multiples of 2-3
- Sanofi tosses out 10m tables of artesunate due to overforecasts
- Uganda has $1-2m worth of expired AIDS drugs and other donor-purchased items due to overforecasts
- Manufacturers exit HepB production after losing money due to overforecasts
- Vietnam faces shortage of Uniject due to underforecast
- **Within-industry champions for global health say weak demand forecasting is #1 reason for inability to make credible business case**
Winners and Losers

- Who Loses from Poor Forecasting?
  - Patients
  - Buyers
  - Suppliers

- Who Wins from Poor Forecasting?
  - No one!
What Is Demand Forecasting?

- Demand forecasting ≠ Needs estimates
- Demand forecasting ≠ Demand creation/advocacy
- Demand forecasting ≠ Target setting

**Estimates “effective” market demand**

Product needs which have or will have purchasing power behind them and will result in actual orders
From Need to Demand

- Population characteristics, disease prevalence and incidence
- Money and its timing
- Patients likely to seek treatment, patients diagnosed
- Patients prescribed treatment, clinician pref.
- Patient compliance, willingness to buy
- Product, brand, dosage specificity

Effective demand = Actual access on the ground
5 Critical Functions of Demand Forecasts

1. Essential products are available because supply matches demand
   - Manufacturers can plan & invest in capacity while taking advantage of production efficiencies

2. New products are developed because there is a realistic picture of future markets
   - Manufacturers have information about new market potential and so can efficiently allocate more R&D resources

3. Supply chain capacity is increased so products can get to people who need them
   - Developing country health systems can be expanded

4. Funders plan purchases & make the most of available money
   - Donors & national governments can efficiently allocate resources

5. The public health community sees bottlenecks & understands opportunities to expand use
   - Highlights key constraints; guides related policy & advocacy efforts
## ACT Supply Chain Risk Map

<table>
<thead>
<tr>
<th>Risk Category</th>
<th>Supply-side facilitators</th>
<th>Suppliers</th>
<th>Quality regulators</th>
<th>Global technical agencies</th>
<th>Aggregate demand forecasters</th>
<th>Funding agencies</th>
<th>Procurement agents</th>
<th>Logistics providers</th>
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<tbody>
<tr>
<td><strong>Supply-side risks</strong></td>
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<td>Losses in the distribution chain</td>
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</table>
# ACT Supply Chain Incentives Map

<table>
<thead>
<tr>
<th>Supply side</th>
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</thead>
<tbody>
<tr>
<td>Develop innovative products</td>
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<td>Increase size of the supply market</td>
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<td>Decrease supply chain lead time</td>
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<td>Overforecast in the short term</td>
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<td>Indifferent</td>
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<tr>
<td>Overforecast in the long term (1-5 years)</td>
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<td>Disincentive</td>
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<td>Disincentive</td>
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<td>Sharing Information on demand, inventory...</td>
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<tr>
<th>Demand side</th>
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<th>National buyers</th>
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<tr>
<td>Decrease wholesale price of artemisinin-based combination therapy drugs</td>
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<td>Decrease retail or end-customer price of artemisinin-based combination therapy drugs</td>
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<td>Expedite grant approval and disbursement</td>
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<td>Rapid adoption of artemisinin-based combination therapy drugs</td>
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<tr>
<td>Enhance the level and sustainability of funding</td>
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<table>
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<tr>
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<th>Supply-side facilitators</th>
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<th>Global technical agencies</th>
<th>Aggregate demand forecasters</th>
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<th>Logistics providers</th>
<th>National buyers</th>
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<tr>
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<th>Logistical and miscellaneous</th>
<th>Supply-side facilitators</th>
<th>Suppliers</th>
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<th>Global technical agencies</th>
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<tbody>
<tr>
<td>Improve efficiencies in distribution chain</td>
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<td>Ensure availability of complementary inputs</td>
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<tr>
<td>Achieve long lasting success (eradication)</td>
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<td>Have rigorous accountability in funds usage</td>
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Recommendations Framework

Take forecasting seriously

- Increases credibility and transparency of forecasting process through adoption of sound principles
- Expands forecasting expertise for global health products

Create global health infomediary

- Consolidates disparate information sources
- Enables more accurate forecasts
- Establishes common baseline forecasts

Share risk & align incentives through contracting

- Shares suppliers’ risk
- Motivates all players to take forecasting seriously and share information
- Motivates funders to reduce risk

Building a foundation for long-term access

Building stronger supply chains & health systems

Linking research funding to market conditions

Improving the regulatory & post-regulatory regimes

Increasing aid predictability
A Risky Business
Saving money and improving global health through better demand forecasts

The report of the Center for Global Development
Global Health Forecasting Working Group

www.cgdev.org/forecasting