# Demand Forecasting: Overview and Issues for Male Circumcision

Meeting the demand for male circumcision:
An assessment of what is needed
Kampala 14 March 2008

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# What Is Demand Forecasting?

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

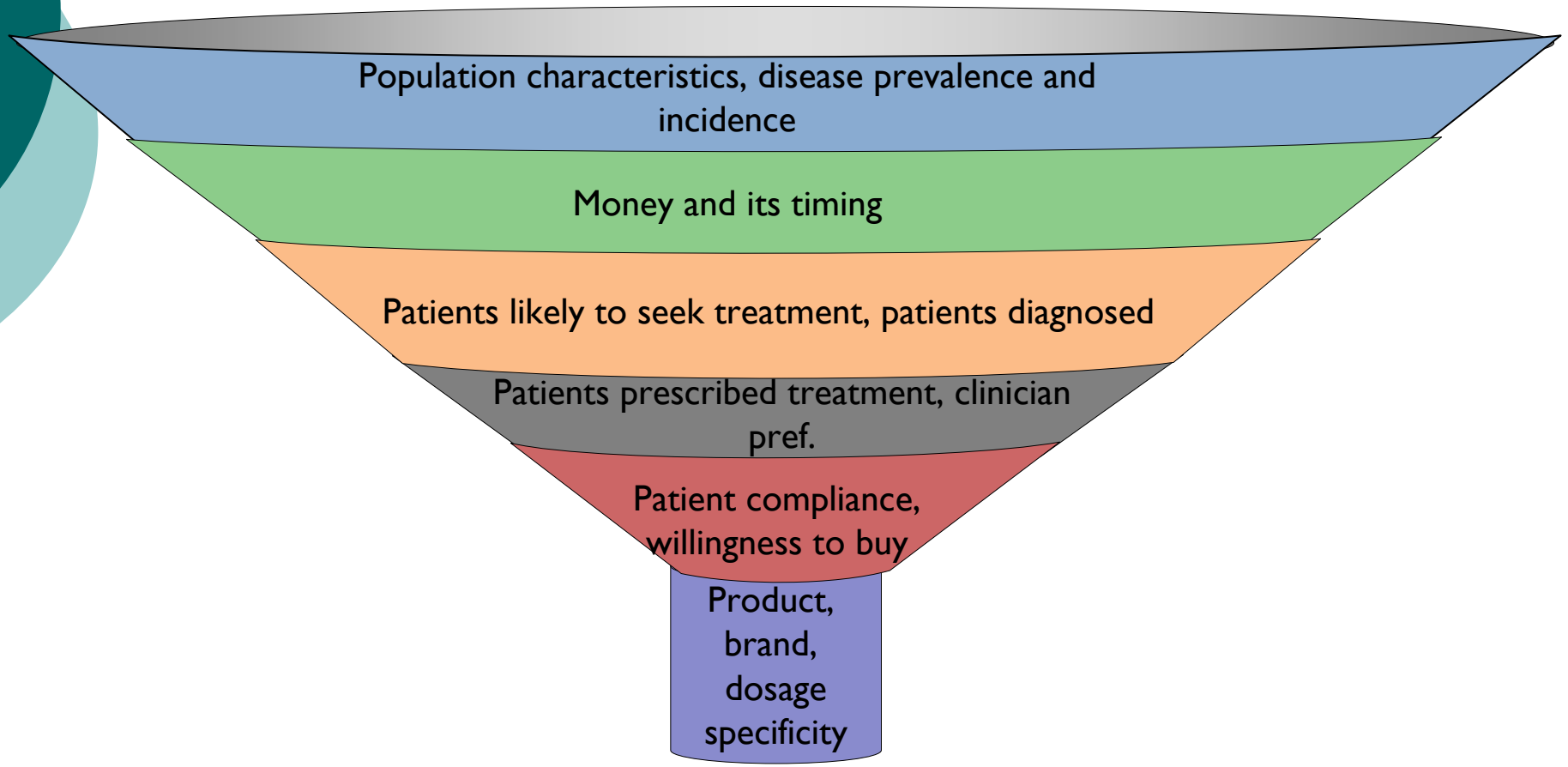
**Estimates "effective" market demand**

Product needs which reflect clinical demand and funding power and will result in actual orders

# 5 Critical Functions of Demand Forecasts

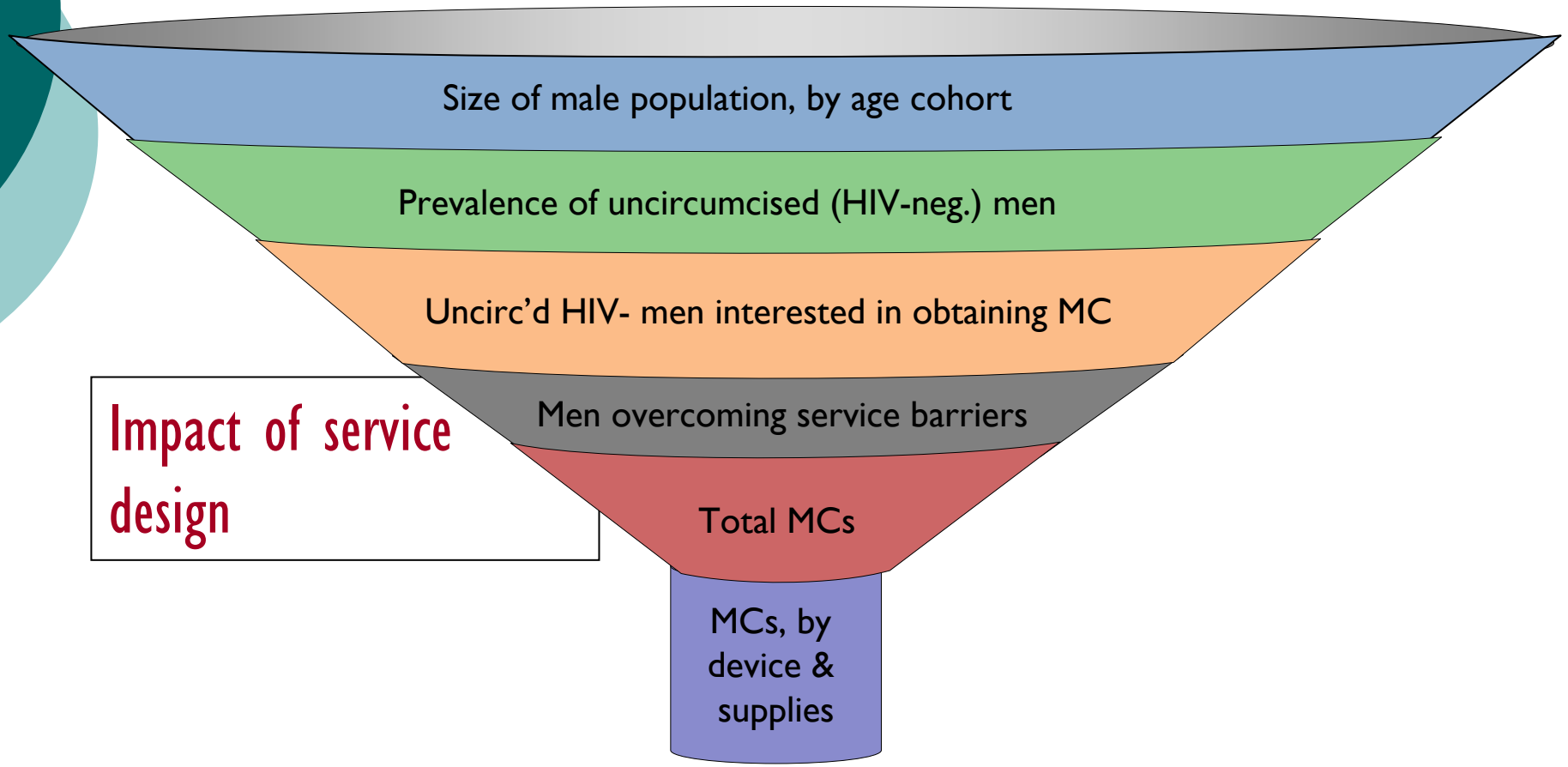
1. **Essential products available: supply matches demand**
   - Manufacturers can plan & invest in capacity while taking advantage of production efficiencies
2. **New products are developed: realistic picture of future markets**
   - Manufacturers have information about new market potential and so can efficiently allocate more R&D resources
3. **Supply chain capacity increased: products can get to people who need them**
   - Developing country health systems can be expanded
4. **Funders make the most of available money**
   - Donors & national governments can efficiently allocate resources
5. **Public health community understands opportunities**
   - Highlights key constraints; guides related policy & advocacy efforts

# From Need to Demand: Generic Model




Effective demand = Actual access on the ground

# From Need to Demand: Male Circumcision



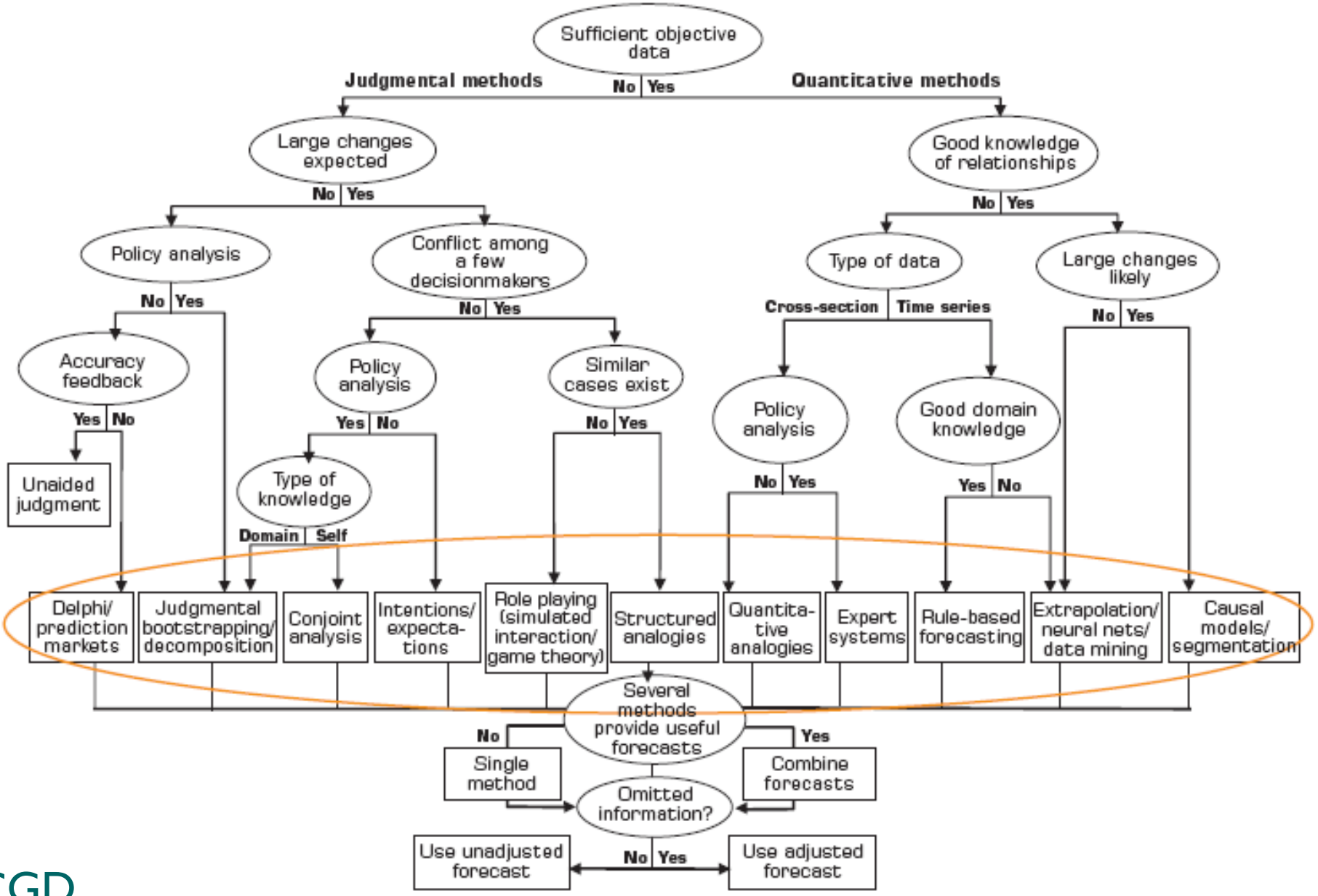
# Demand Forecasting Issues for MC: Underlying Demand

- Pent-up demand, across multiple age cohorts.
- After catch-up (5 years?), one cohort per year.
- Acceptability high even before RCT results – average 50-60%
- Uptake estimates without community mobilization lower – 20-40%, limited data

# Demand Forecasting Issues for MC: Impact of Services

- Response to community mobilization
- Impact of service quality / reputation
- Impact of service location (fixed vs. mobile)
- Mix of surgery methods

# Figure 3.2
## Selection tree for forecasting methods

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# Tracking Coartem® Forecast Performance

| *All figures in million treatments* | 2005 | 2006 | 2007 | 2008 |
|---|---|---|---|---|
| **Forecasts provided in:** | | | | |
| **Dec. 2004** | 55 | 106 | 109 | |
| **Dec. 2005** | | 64 | 72 | 80 |
| **Sept. 2006** | | 62 [a] | 64 | 80 |
| **Actual sales** | 14 [b] | 55 [c] | | |
| **Installed capacity [d]** | 33 | 120 | 120 | |

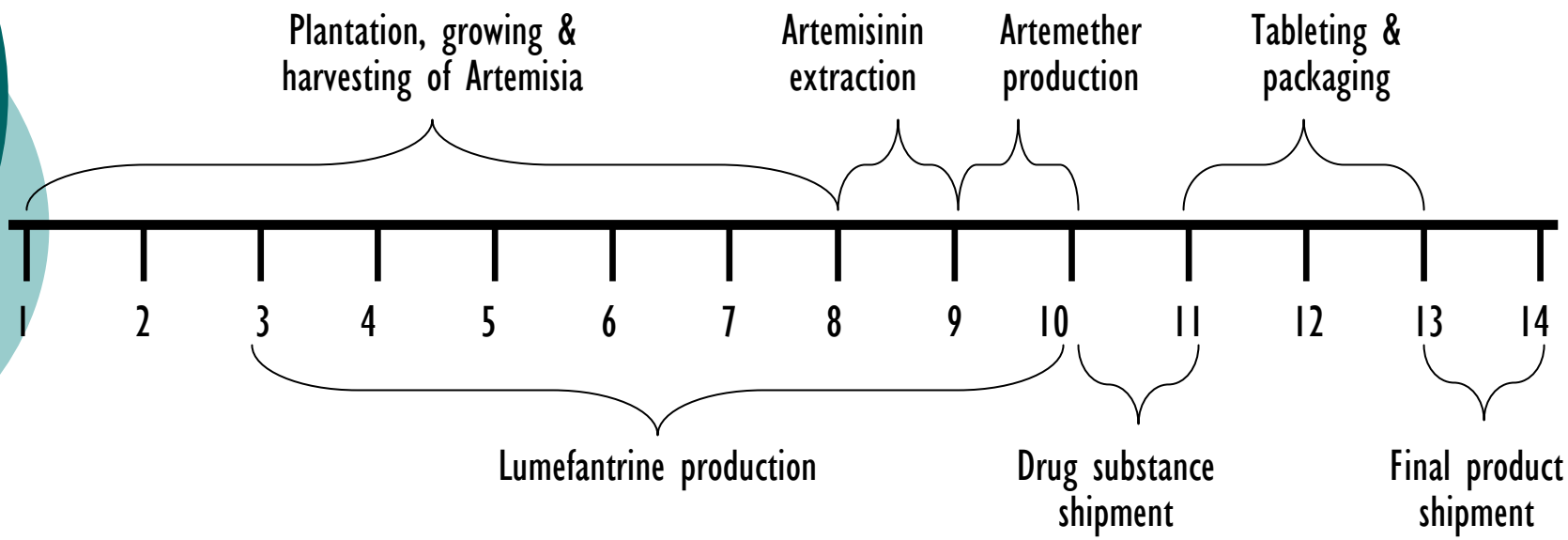
[a] 61.5m = 44m treatments actual sales to Aug. 2006 + 17.5m forecasted for Q4 2006

[b] 9m sold to Dec. 2005 + 5m early Jan. 2006 counted as 2005 sales

[c] 44m sold to Aug. 2006 + 11m expected orders. Manufacturer will carry an additional stock of 5m, bringing total 2006 production to 59m

[d] Installed capacity figures are for Novartis only

# ACT Production Process (Based on Coartem®)




**Total lead time = 14 months**

- The production lead-time for ACTs is long and capacity planning has to be done based on long-term demand forecasts.
- Donor funded initiatives are underway to reduce the production lead-time by manufacturing synthetic forms of artemisinin.
- The long clinical-trial and approval process for new drugs implies that in the short to medium term, the long lead-time is a hard constraint.

# ACT Supply Chain Risk Map

| | Supply-side facilitators | Suppliers | Quality regulators | Global technical agencies | Aggregate demand forecasters | Funding agencies | Procurement agents | Logistics providers | National buyers |
|---|---|---|---|---|---|---|---|---|---|
| **Supply-side risks** | | | | | | | | | |
| Batch yield risk | No risk | Low risk | No risk | No risk | No risk | No risk | No risk | No risk | No risk |
| *Excess inventory risk* | | | | | | | | | |
| Economic | No risk | High risk | No risk | No risk | No risk | Low risk | No risk | No risk | Moderate risk |
| Reputational | No risk | No risk | No risk | No risk | Low risk | No risk | No risk | No risk | No risk |
| *Long-term overcapacity risk* | | | | | | | | | |
| Economic | No risk | High risk | No risk | No risk | No risk | No risk | No risk | No risk | No risk |
| Reputational | Low risk | No risk | No risk | No risk | Low risk | No risk | No risk | No risk | No risk |
| *Shortage risk* | | | | | | | | | |
| Economic | No risk | Moderate risk | No risk | No risk | No risk | No risk | No risk | No risk | No risk |
| Reputational | No risk | High risk | No risk | Low risk | Moderate risk | Low risk | No risk | No risk | Moderate risk |
| **Demand-side risks** | | | | | | | | | |
| Price increase | No risk | No risk | No risk | No risk | No risk | Moderate risk | No risk | No risk | Moderate risk |
| Price decrease | No risk | Moderate risk | No risk | No risk | No risk | No risk | No risk | No risk | Low risk |
| *Budget and purchasing power risks* | | | | | | | | | |
| Grant approval and disbursement timing | No risk | High risk | No risk | No risk | No risk | Moderate risk | No risk | No risk | High risk |
| Sustainability of funding | Low risk | Moderate risk | No risk | No risk | No risk | High risk | No risk | No risk | High risk |
| Obsolescence risk | Low risk | Moderate risk | No risk | No risk | No risk | No risk | No risk | No risk | Moderate risk |
| **Regulatory and quality risks** | | | | | | | | | |
| Lack of approved drugs | No risk | No risk | Low risk | No risk | No risk | No risk | No risk | No risk | No risk |
| *Regulatory enforcement risks* | | | | | | | | | |
| Counterfeit product | No risk | Moderate risk | No risk | No risk | No risk | No risk | No risk | No risk | Moderate risk |
| Safety of approved drugs | No risk | High risk | High risk | No risk | No risk | Low risk | No risk | No risk | Moderate risk |
| **Logistical risks** | | | | | | | | | |
| Nontimely delivery | No risk | Moderate risk | No risk | No risk | No risk | No risk | Moderate risk | Moderate risk | Moderate risk |
| Losses in the distribution chain | No risk | No risk | No risk | No risk | No risk | Low risk | No risk | Moderate risk | Moderate risk |

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# Demand Forecasting for MC: Recommendations

- Adoption of assessment techniques proposed by CDG.
- Qualitative DF methods advancing to quantitative methods, as data improve.
- Assess impact of service location and quality, community mobilization, other factors.