ORGANIZATION OF SERVICES AND EFFICIENCY IN HEALTH SYSTEM PERFORMANCE

Do we need to focus more attention on PHC?

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December 2014, Oxford UK
Traditional efficiency studies useful but not always that actionable. Frequently, we will need to look at other factors beyond the efficiency study to understand how to increase productivity and outcomes (Nigeria example).

Increasing evidence that improving health outcomes comes from non clinical services within the control of the health system, frequently addressed outside the clinic setting and that we need to better measure and understand services beyond “inpatient and outpatient” visits. (Montana and Mali examples)

Growing convergence between approaches to improving health in high performing primary care systems in HICs and models used in LICs, ie CHWs, but more research needed.
EFFICIENCY STUDIES

• Health economists have done many, all very useful
  • Examples: branded vs generics, fixed versus mobile delivery, service delivery costs across multiple facilities
• Service delivery costing studies, useful but not always actionable
  • Costs based on inputs used in production of services, labor typically 50-60% of total variable costs, costs tend to be relatively uniform based on homogeneity of health centers
  • Outputs, based on units of service delivery, ie outpatient and inpatient services, typically varies greatly by facility,
• Productivity often low and variable with AC often high and variable:
  ▪ low effective use of care due to barriers like price, distance, perceived quality
  ▪ Some facilities do better, often an 80/20, ie 80% of services delivered in 20% of facilities.
  ▪ Challenges:
    • Labor rarely a fully variable cost so reallocations difficult or impossible.
    • Management often key ingredient
    • Low overall productivity often the result of an allocative inefficiency, ie high user fees
COVERAGE OF KEY INTERVENTIONS HAS BEEN STAGNANT IN NIGERIA

SDI INDICATORS SUGGEST VERY LOW CASELOAD IN PUBLIC SECTOR IN NIGERIA

<table>
<thead>
<tr>
<th></th>
<th>Nigeria</th>
<th>Kenya</th>
<th>Senegal</th>
<th>Tanzania</th>
<th>Uganda</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>INPUTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minimum infrastructure</td>
<td>18%</td>
<td>39%</td>
<td>39%</td>
<td>19%</td>
<td>47%</td>
</tr>
<tr>
<td>Minimum equipment</td>
<td>25%</td>
<td>77%</td>
<td>53%a</td>
<td>78%a</td>
<td>18%</td>
</tr>
<tr>
<td>Drugs availability</td>
<td>45%</td>
<td>52%</td>
<td>78%b</td>
<td>76%b</td>
<td>40%</td>
</tr>
<tr>
<td>Drugs availability – children</td>
<td>47%</td>
<td>69%</td>
<td>--</td>
<td>--</td>
<td>34%</td>
</tr>
<tr>
<td>Drugs availability – mothers</td>
<td>44%</td>
<td>41%</td>
<td>--</td>
<td>--</td>
<td>23%</td>
</tr>
<tr>
<td>Vaccines availability</td>
<td>73%</td>
<td>83%</td>
<td>--</td>
<td>--</td>
<td>58%</td>
</tr>
<tr>
<td><strong>EFFORT</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Absence rate</td>
<td>29%</td>
<td>29%</td>
<td>20%</td>
<td>21%</td>
<td>47%</td>
</tr>
<tr>
<td>Caseload per day</td>
<td>1.5</td>
<td>8.7</td>
<td>--</td>
<td>--</td>
<td>10.0</td>
</tr>
<tr>
<td>Time spent with patients</td>
<td></td>
<td></td>
<td>39 min</td>
<td>29 min</td>
<td></td>
</tr>
<tr>
<td><strong>ABILITY (Share of providers able to...)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Correctly diagnose common conditionsc</td>
<td>36%</td>
<td>74%</td>
<td>34%</td>
<td>57</td>
<td>58%</td>
</tr>
<tr>
<td>Adhere to clinical treatment guidelinesc</td>
<td>31%</td>
<td>43%</td>
<td>22%</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>Correctly manage maternal and neonatal complicationsd</td>
<td>17%</td>
<td>44%</td>
<td>--</td>
<td>--</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Notes:** Public Facilities Only

- Only 3 items were considered: weighing scale, thermometer and stethoscope as opposed to 2 additional items in the other countries: refrigerator and sterilizing equipment.
- Only 15 drugs were considered as opposed to 10 priority drugs for children and 16 priority drugs for mothers.
- Acute diarrhea with dehydration, Malaria with anemia, Pneumonia, Tuberculosis, and Diabetes.
- Post-partum hemorrhage, and Neonatal asphyxia.

SOURCE: SDI
DISTRIBUTION OF PUBLIC SECTOR CASELOAD IS SKEWED BUT LOW OVERALL

Number of outpatient visits per medical staff per day per facility, by percentile

SOURCE: World Bank Service Delivery Indicators (SDI)
PRODUCTIVITY OF PUBLIC SECTOR PHC IS LOW IN RELATIVE TERMS

Average number of outpatient visits per day per PHC health worker

<table>
<thead>
<tr>
<th>Nigeria</th>
<th>Benue PPMVs</th>
<th>Kebbi PPMVs</th>
<th>Kenya</th>
<th>Uganda</th>
<th>Zambia</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5</td>
<td>25.0</td>
<td>8.7</td>
<td>10.0</td>
<td>6.7</td>
<td></td>
</tr>
</tbody>
</table>

1 Data on client volume is based primarily on recall, not records, and thus may not be reliable.

SOURCE: World Bank Service Delivery Indicators (SDI), PPMV/pharmacy survey across Nigeria, Oct 2013 (TNS Global)
Proportion of total survey respondents

Patients are bypassing public PHC facilities in favor of private and secondary facilities.

SOURCE: GHS, 2013
IN MANY AREAS, PPMVS ARE ABUNDANT AND CONVENIENTLY LOCATED

Mapping of PPMVs and public PHCs in the urban area around Kebbi

**Public PHCs only**

**PPMVs and public PHCs**

SOURCE: ACHIEVE PPMV study, NMIS
PUBLIC PHCS HAVE POOR PERCEIVED VALUE FOR MONEY, GIVEN HIGH USER FEES (ESPECIALLY FOR DRUGS AND LABS) AND POOR QUALITY

Costs to patient by treatment at public primary health care facilities surveyed, USD

- 62% of Nigeria’s population lives on less than $1.25 a day
- 82% live on less than $2 a day

SOURCE: World Bank Service Delivery Indicators (SDI), 2013; World Bank Development Indicators

High costs are compounded by poor quality of PHC services

- Only 18% have minimum infrastructure and 25% have minimum equipment
- Only 45% have minimum list of essential drugs
- Health workers are absent 29% of the time and have low skills level
  - Only 36% able to correct diagnose common conditions
  - 31% adhere to clinical treatment guidelines
  - 17% correctly manage maternal and neonatal complications
PHC facilities require a minimum of $1,200 (180,000 naira) a year to fund operational expenses (excluding drugs)

- Primary Health Center visited in Kaduna reported needing a minimum of $1,200 (180,000 naira) a year in cash to fund operational expenses (excluding drugs) including:
  - Laundry detergent
  - Cleaning supplies
  - Gauze and other medical consumables
  - Utilities
  - Fuel for generator
- CHCs would require more cash than this minimum threshold
- Facilities fund operational expenses with user fees or cash loans from facility in-charge due to lack of public funding

Most facilities received less than $1,200 a year
Cash received from government & NGO sources in last fiscal year
Percent of facilities surveyed

Minimum cash needed for operational expenses:
- $1,200 a year
- $100 a month

~85% of facilities receive less than minimum level of cash
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“The dominant form of health care financing in the United States supports a reactive, visit-based model in which patients are seen when they become ill, typically during hospitalizations and at outpatient visits. That care model falls short not just because it is expensive and often fails to proactively improve health, but also because so much of health is explained by individual behaviors, most of which occur outside health care encounters. Indeed, even patients with chronic illness might spend only a few hours a year with a doctor or nurse, but they spend 5000 waking hours each year engaged in everything else”

STATE OF MONTANA EMPLOYEE HEALTH CENTERS

- Program started in 2012 by Governor Brian Schweitzer

- Created health centers for State government employees, all of whom had “universal coverage” already

- Contracted out to CareHere, company that runs employee health care clinics on a for-profit basis

- Major emphasis on health screening for risk factors, and addressing risk factors through counseling, nutrition, diet and exercise coaching
GROWTH IN CONTACTS FOR MONTANA STATE EMPLOYEES INCREASED ACCESS TO PHC
BETTER DETECTION OF CHRONIC CONDITIONS
(ASTHMA/COPD, DIABETES, HIGH CHOLESTEROL, HYPERTENSION)
COACHING VISITS/CONTACTS

<table>
<thead>
<tr>
<th>Coach Type</th>
<th>9/1/12 to 2/28/13</th>
<th>3/1/13 to 8/31/13</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse Coach</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diet/Nutrition Coach</td>
<td></td>
<td></td>
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<tr>
<td>Exercise Coach</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioral Health / Tobacco Coach</td>
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</tbody>
</table>
http://www.plosone.org/article/info:doi/10.1371/journal.pone.0081304

<table>
<thead>
<tr>
<th>Intervention</th>
<th>Core Strategies</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobilizing the health care delivery system</td>
<td>Active door-to-door case finding by Community Health Workers, who proactively identified children with 16 danger signs of childhood illness, diagnosed and treated pediatric malaria in the home, referred and accompanied other cases to the health center, conducted follow-up visits at 24 and 48 hours, and connected pregnant women with prenatal care and facility-based delivery.</td>
</tr>
<tr>
<td></td>
<td>Removing user fees to provide free access to care to all patients who could not afford to pay</td>
</tr>
<tr>
<td></td>
<td>Constructing and renovating clinical infrastructure</td>
</tr>
<tr>
<td>Creating rapid referral networks</td>
<td>Community organizers, religious leaders, educators mobilize community members to bring children in early for prevention and care services</td>
</tr>
<tr>
<td>Overcoming conditions of poverty</td>
<td>Providing a package of programs to prevent childhood illness by addressing conditions of poverty, through non-formal education, microenterprise, and community organizing</td>
</tr>
</tbody>
</table>
Figure 1. Patient Visits Before and After the Launch of the Health System Strengthening Intervention.

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CONVERGENCE IN PHC APPROACHES ACROSS HICS AND LICS

• Elements of convergence
  • Focus on CHWs, coaching, addressing individual risk factors, greater focus on individual and household behavior
  • Growing demedicalization of health care, shifting from doctors and nurses to care coordinators, coaches, keeping physicians focused on the tough assignments
  • Increasing use of ICT, mobile job aids for CHWs in LICs, “automated hovering” in HICs
• Research needs
  • Evidence base for CHWs relatively weak (though HICs going forward without it). More research clearly needed on how CHW/lay health worker engagement contributes to health
  • More research needed on what CHWs/care coaches do and the contribution to health. What is effective? What is cost effective?