The reasons for and impact of stock-outs in rural areas

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Rural perspective – not better or worse, but different
Context – Zithulelele Hospital
Water source (12 months)

342/412 mothers did not purifying the water in any way
Access to electricity (12 months)

- Eskom electricity: 115 (27.91%)
- Own generator: 3 (0.73%)
- No access: 294 (71.36%)
Situation at clinics?
Primary reason for stock-outs?

1. Poor ordering by pharmacists or nurses on the ground
2. Lack of storage facilities for medicines
3. Problems with transport of medication to your facility
4. Disorganised medical depot
5. Poor stock control systems generally – poor management of data and poor feedback
Why do we have stock-outs?

• Definition of a stock-out?

• Combination of factors
  – Clinic
    • Pharmacy assistants a rarity
    • Poor facilities/lack of space
    • Poor stock management systems
    • Nurse overload, isolation and drug knowledge
    • Distance to facility and state of roads for delivery
    • Fluctuating nature of primary care
    • Difficulty ordering surgicals
Why do we have stock-outs?

– Depot/sub-depot
  • Poor systems, lack of staff, lack of capacity and accountability
  • Poor drug management, theft, inefficiency
  • Overwhelmed by need – massive increase in demanders
  • Arbitrary undersupply of nurse orders
  • Lack of transport

– Bigger problems
  • Pharmaceutical companies with supply or capacity problems
  • National or international problems with ingredients
  • Vaccines produced overseas and long lead-in times
  • Fear of reporting stockouts, poor response by managers (esp. “middle managers”)

Massive logistical challenge, requiring skilled personnel at all levels of the pharmaceutical service
Example of stockouts:

- Zithulele Births Follow up Study (ZiBFUS)
- 479 babies f/u 3 monthly for first year
- Weight, breastfeeding, PCR uptake, deaths, immunizations, depression scores, development
- Aim: To get a sense of what is happening outside the hospital gate
Distribution of mothers – by clinic
Birth

Birth place

- 78% at Zithulele
- 9% at home
- 10% on the way
- 3% at Ngcwanguba Health Centre
Why are immunisations incomplete? (At 3 months: n = 166/185)

- Nurse too busy due to immunisation campaign: 6
- Nurse too busy: 8
- Haven't gone back yet: 25
- Didn't realise incomplete: 31
- Immunisations were O/S: 96
Told return for immunisations due to O/S? (n = 376)

- No: 243 (64.6%)
- Yes, once: 117 (31.1%)
- Yes, twice: 16 (4.3%)
6 Weeks Immunizations

Timeliness of Immunizations

- **PCV 1**: 76% in 6-8 weeks, 15.00% in 8-10 weeks, 14.00% in 10+ weeks
- **Hep B 1**: 78% in 6-8 weeks, 13.00% in 8-10 weeks, 14.00% in 10+ weeks
- **Dtap-IPV/HIB 1**: 77% in 6-8 weeks, 14.00% in 8-10 weeks, 13.00% in 10+ weeks
- **RV1**: 81% in 6-8 weeks, 11.00% in 8-10 weeks, 11.00% in 10+ weeks
- **OPV 1**: 81% in 6-8 weeks, 11.00% in 8-10 weeks, 11.00% in 10+ weeks
• According to ZIBFUS data, the 3 month interview data had the lowest up to date rate (44.87%). This is because ≈30% of 10 weeks immunization is given later than 14 weeks from birth.
Rotavirus II

- 38% of Rotavirus II is given later than 18 weeks.
- Improper vaccination can potentially lead to a condition called intussusception.
- 25% of the late Rotavirus fall outside the maximum age that the last dose should be given.

Rotarix: 24 weeks and 6 days
RotaTeq: 32 weeks and 0 days

Late Rotavirus II

- 43%: 18-20 weeks
- 34%: 20-24 weeks
- 11.00%: 24-28 weeks
- 8.00%: 28-32 weeks
- 6.00%: 32+ weeks

Legend:
- 18-20 weeks
- 20-24 weeks
- 24-28 weeks
- 28-32 weeks
- 32+ weeks
Measles/PCV 3 Uptake (12 months)

![Bar chart showing Measles/PCV 3 uptake percentages]

- Measles: 84%
- PCV 3: 83%
Immunizations Given

### Given

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<thead>
<tr>
<th>Vaccine</th>
<th>Age</th>
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<td>OPV 1</td>
<td>6 weeks</td>
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<td>RV 1</td>
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<td>Dtap-IPV/HIB 2</td>
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Immunizations Given *On Time*(2 wks)

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*Given*
Effect of stock-outs?

• Shortages and stock-outs
  – Shortages
    • Need to return more regularly
    • Unnecessary overload of facilities
    • Waste of clinicians and patient time
  – Patient:
    • Untreated: morbidity and mortality - suffering
    • Inconvenience, cost, impairs their dignity
    • Loss of confidence in the health system
Effect of stockouts...2

• On the doctor, nurse and/or pharmacist:
  – Without meds, a lot of what we do is a waste of time
  – Causes extra work and extra costs, e.g. virological failure
  – Wastes scarce clinician resources..
  – Frustrating, feeling of helplessness - highly discouraging!
Effects of stock-outs: in your opinion?

1. Patient morbidity or even mortality – i.e. patient suffering
2. Extra work for all in healthcare facilities
3. Undermines the dignity of patients
4. Demotivates staff
5. Patients lose confidence in the facility or public healthcare system as a whole
Case in point
Infant death in Zibfus study

- No immunisations apart from those given at birth
  - Went to Mapuzi Clinic 3 times, but always o/s
- Went to private doctor in Mqanduli 65 km away
  - Cost: R180 to see doctor
  - R70 transport
  - For cough, not helped...
  - Didn’t improve, died on way to hospital
Stock-outs : conclusion

• This is never OK – we should not tolerate it, and should do something about it
• Needs clinicians at all levels to be involved
• Complex reasons - system failures, we need a holistic view
• Poor reporting, Impact on patient and HCW
• Preventing stock-outs arguably even more important in rural facilities
With thanks to:

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