

What does it cost to provide surgical services for children with congenital/developmental cataract in Tanzania?



Determining the cost of cataract surgery in children

1. KCMC Hospital catchment area children (congenital or developmental cataract)
2. Need to include information:
 - a) Hospital costs (ward, surgery, follow up)
 - b) Patient costs (direct: transport, meals & indirect)
3. Multiple trips
 - a) Surgery
 - b) Follow up (spectacles, low vision devices, etc.)



Assessment of costs

Ward costs

- Food
- Nursing care

Surgical costs

- Ophthalmologist
- Anesthetist
- Nursing staff
- Consumables
- [Equipment/instruments]

Assessment of costs

Follow up costs

- Spectacles
- Low vision devices
- Ophthalmologist, optometrist, low vision technician

Patient &

parent/guardian costs

- Transport to hospital
- Meals (during journey)
- Lost earnings
 - During travel
 - Hospitalization
 - Follow up

Note: does not include costs at home (e.g., other child care)

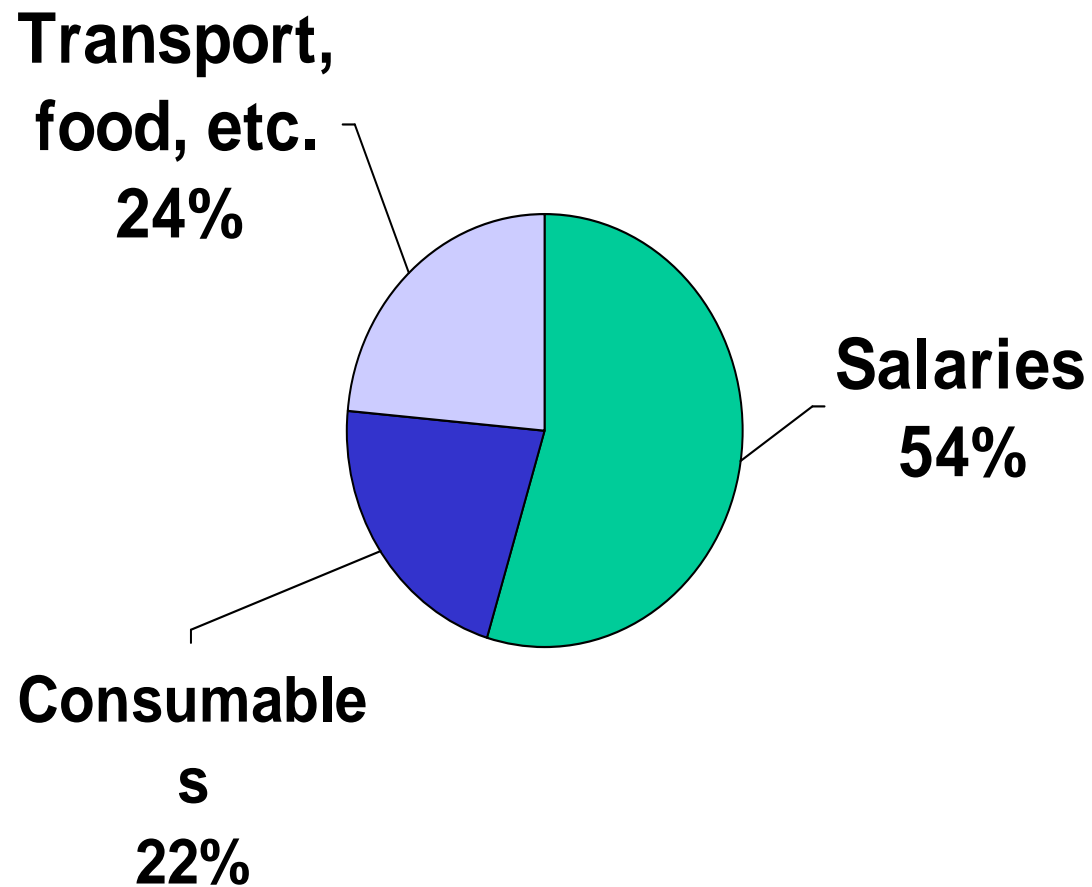
Methods

- Children receiving surgery at KCMC in 2007 and part of 2008
- N=160 (2007)
- Average per capita consumption expenditure (\$9.20/month = \$110.40/year)

Estimated costs per child

| | |
|----------------------------------|----------|
| Hospital: ward expenses | \$134.20 |
| Hospital: surgical expenses | \$300.14 |
| Hospital: follow up expenses | \$47.00 |
| Patient expenses: direct costs | \$58.98 |
| Patient expenses: indirect costs | \$17.48 |
| Total | \$557.80 |

Proportion to total costs by type



Interpretation

- Cost of good quality cataract surgery in children in Africa high
 - Estimates = \$560 per surgery
 - Underestimate (re-admissions for EUA & suture removal, etc)
 - Fees charged considerably lower
 - Beyond the reach of most families (even for transport)
 - Given the size of the catchment area (10 million) need to support transport
 - Requires subsidy (fees & transport)

Strategies to reducing costs

- Decentralize refractive services & some low vision care (after assessment at tertiary hospital)
- Use foldable lens manufactured at Aurolab



Strategies to reduce costs

- Bilateral surgery
- Improved surgical techniques
 - Reduce suture removal
 - Reduce risk of PCO

What do our findings suggest?

- Providing cataract surgery in children requires an investment in all aspects of service delivery (not just the surgery)
- Clear and coherent planning needed to develop CEHTF (avoid duplication of efforts)
- External support needed to ensure that services are of high quality and comprehensive (beyond capacity of parents to pay)

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Calculations: Ward expenses

| <i>Item</i> | <i>Cost</i> | <i>Unit</i> | <i>Total</i> |
|---------------------------------|-------------|-------------|--------------|
| Food (includes parent/guardian) | \$5/day | 11 days | \$55 |
| Nursing staff | \$7.20/day | 11 days | \$79.20 |
| Total | | | \$134.20 |

Calculations: Surgical expenses

| <i>Item</i> | <i>Cost</i> | <i>Unit</i> | <i>Total</i> |
|-----------------------|-------------|-------------|--------------|
| Programme coordinator | \$44.84 | 1 | \$44.84 |
| IOL: Acrysoft | \$90 | .80 | \$72 |
| IOL: PMMA | \$3 | .20 | \$0.60 |
| Other consumables | \$22.20 | 1 | \$22.20 |
| Ophthalmologist | \$187.50 | .60 | \$112.50 |
| Anesthetist & nursing | \$24.00 | 2 | \$48.00 |
| Total | | | \$300.14 |

Some amounts doubled if bilateral surgery done

Calculations: Follow up expenses

| <i>Item</i> | <i>Cost</i> | <i>Unit</i> | <i>Total</i> |
|-------------------------------------|-------------|-------------|--------------|
| Post operative spectacles | \$30 | 0.8 | \$24 |
| Low vision devices | \$5 | 0.4 | \$2 |
| Optometrist & low vision technician | \$21 | 1 | \$21 |
| Total | | | \$47 |

Note: Children need replacement spectacles about once per year

Calculations: Patient expenses

| <i>Item</i> | <i>Cost</i> | <i>Unit</i> | <i>Total</i> |
|---|-------------|---|--------------|
| Transport to/from hospital | \$16.73 | 3 | \$50.19 |
| Meals during transport | \$2.93 | 3 | \$8.79 |
| Lost earnings: Transport to hospital At hospital Follow up | \$9.20 | 0.95 x 2 2 days 11 days 6 days | \$17.48 |
| Total | | | \$76.46 |