

# Operational Costs in a Large Scale Telehealth Service

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**BRAZIL**

# Cost in telehealth

- Lack of evidence of cost effectiveness is a relevant barrier for a more intensive use of telehealth.
- Particularly for developing countries where the resources are limited and telehealth has a large impact.
- Reasons for this lack of information
  - **Public sector:** most of the projects worked as pilots, finishing by the end of the financial support
  - **Private sector:** confidentially

Telehealth Center  
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- provides teleconsultation and telecardiology services since 2006,
- 500,000 ECG and 18,000 teleconsultations
- 608 municipalities, 735 sites
- 24,000 teleactivities/month (Dec/2010)
- Part of Government Public Health Service

Sharing cost information can be helpful for assessing the potential of telehealth

## Relevant factors

- In 2009 two important modifications were introduced in the service:
  - 328 new municipalities were incorporated from August/2009 to July/2010
  - until June/2009 most teleconsultations were answered directly by specialists. Thereafter, teleconsultation is directed to a generalist physician and, if necessary, goes to a specialist. This modification increased the use of the system.

# Methodology

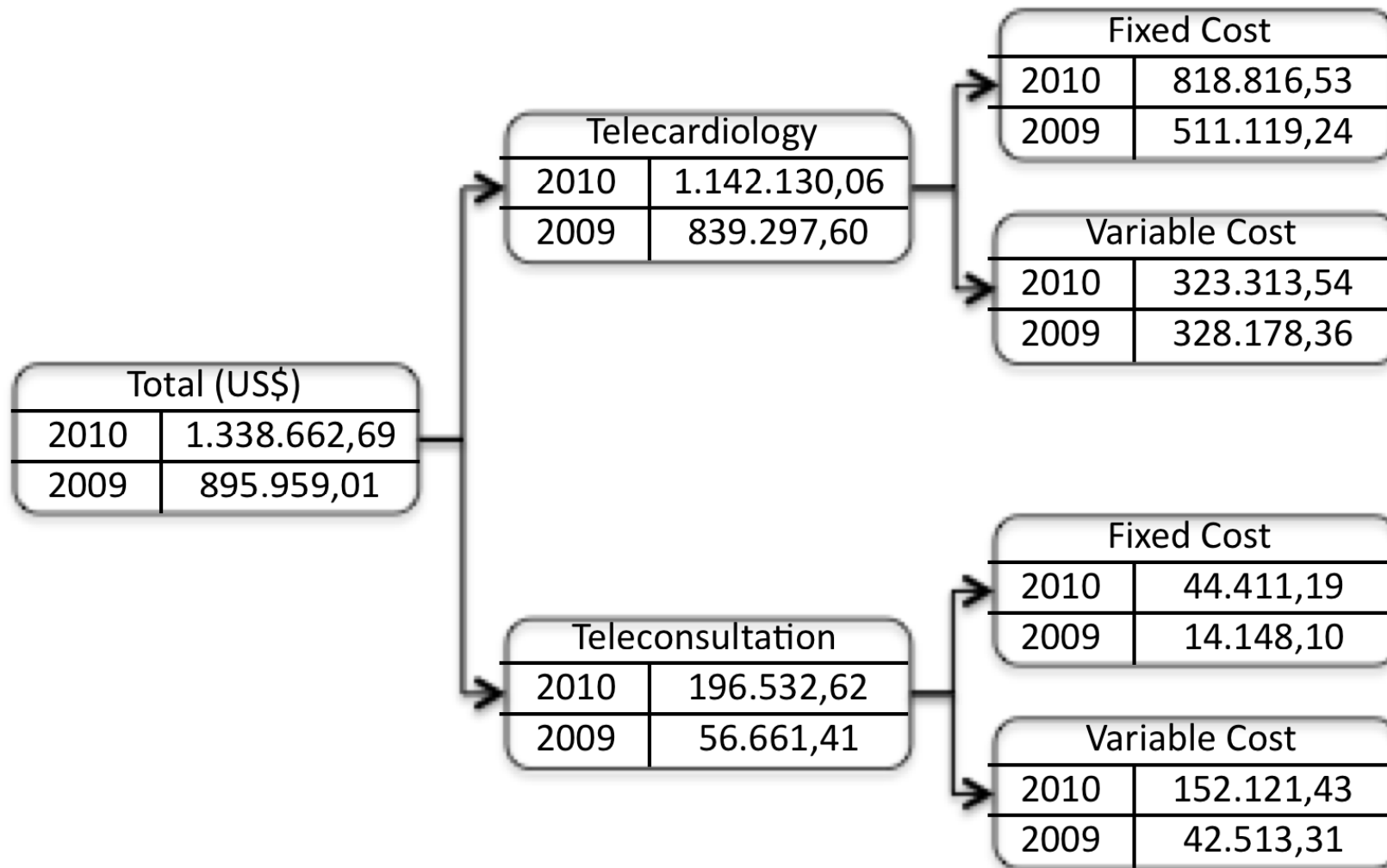
- All expenses are registered according to usual accounting methodology
- Divided in fixed and variable costs
- Most relevant fixed cost: administrative, technical, coordination staff and shift doctors involved in teleconsultation
- Most relevant variable cost: clinical staff involved in telecardiology and part of teleconsultation (paid according productivity)
- Divided according to the type of activity (telecardiology and teleconsultation)

# Methodology

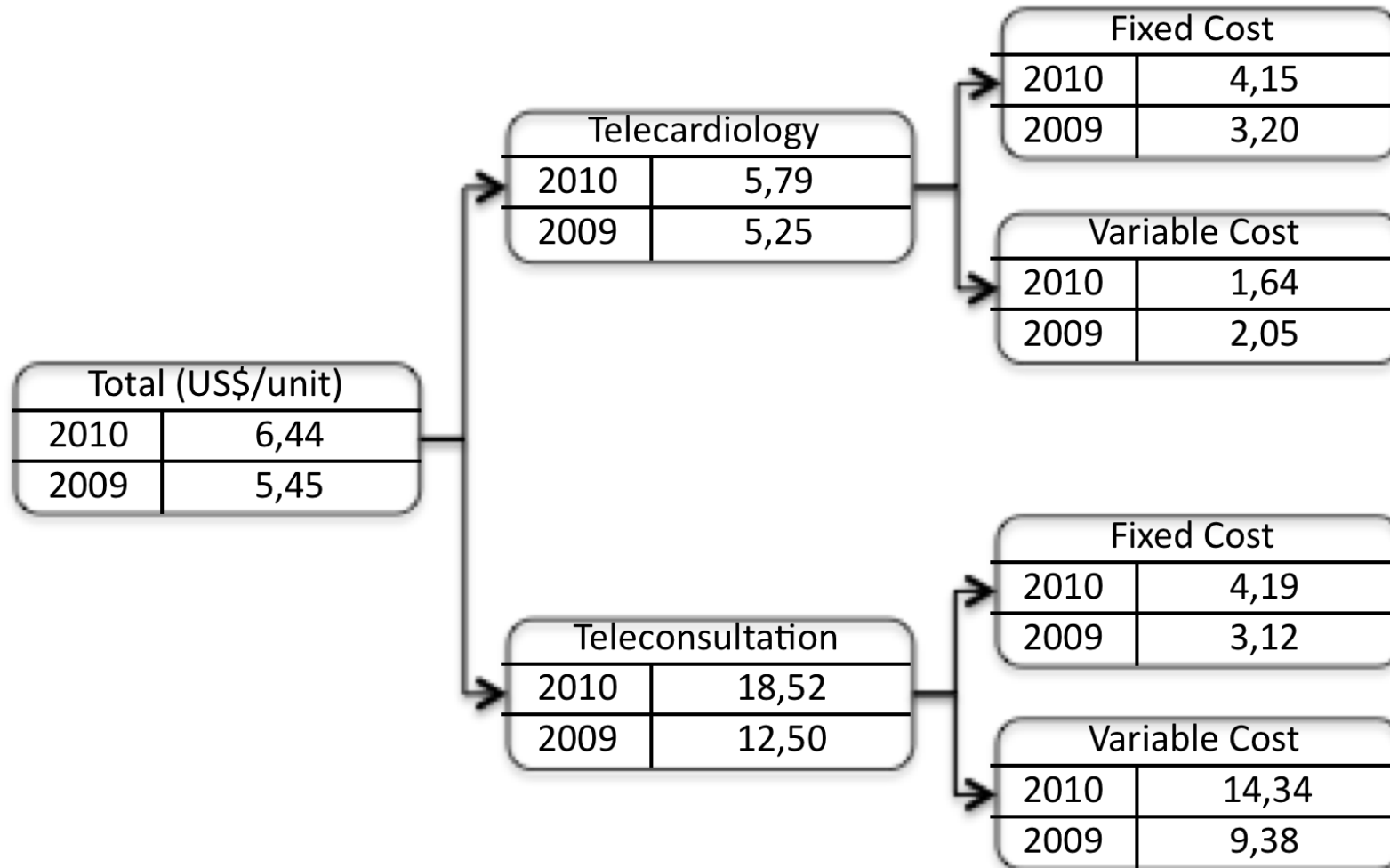
- Indirect costs were divided according to the number of each type of activity:

	2009		2010	
Telecardiology	159.715	97,2%	197.367	94,9%
Teleconsultation	4.534	2,8%	10.611	5,1%
Total	164.249	100,0%	207.978	100,0%

# Results: Annual operational cost US\$



# Results: Unit cost (US\$/activity)





# Discussion

- Cost depends on a specific situation. Can not be directly extrapolated.
- Telehealth has a high fixed cost: scale is an important factor
- Telecardiology has a relatively low cost
  - cardiovascular diseases is most important cause of deaths
  - high utilization dilutes fixed costs

# Discussion

- Teleconsultation has a high cost
  - each municipality has about 400 referrals/month
  - teleconsultation could more intensively used as a second opinion system
  - Alkmim<sup>5</sup>: high answering time was one of barriers
  - high answering time (average 3 days) was due to
    - teleconsultation was sent directed to specialists
    - low number of teleconsultation per day
    - high number of specialists
  - to increase number of teleconsultation
    - introduction of a gatekeeper
    - 80% teleconsultations answered in less than 4 hours
    - necessary to contract new doctors (higher cost)

# Discussion

- Introduction of 328 new municipalities
  - low utilization at the beginning
  - higher costs
  - implementation methodology has impact on operational cost

# Conclusion

- Cost follow up and analysis has to be a routine for telehealth services:
  - it is very helpful to convince municipal administrators to implement telehealth
  - it permits to convince funders to pursue on telehealth
  - it permits to optimize financial resources
  - it permits a better expansion planning
  - it permits comparisons

# Thank you!

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