



# IMPLEMENTING THE TELEMONTITORING OF NEONATAL INTENSIVE CARE UNIT IN MINAS GERAIS STATE, BRAZIL

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SAÚDE

# EPIDEMIOLOGY

## INFANT MORTALITY



**Brazil (%)**

**21.3 in 2000**



**13.9 in 2010**

**Minas Gerais State (%)**

**20.8 in 2000**



**13.1 in 2010**

# EPIDEMIOLOGY

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- ▣ **The infant mortality rate in Minas Gerais State has been decreasing in recent years, but still remains higher than other states in Southeastern region of Brazil.**
- ▣ **There are regional differences and the mortality rate reaches 18.7% in the northeast region of Minas Gerais State.**

# INTRODUCTION

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- ▣ **Care provided in intensive care units (ICUs) is notable for its high cost and high rates of morbidity and mortality.**
- ▣ **The Minas Gerais State Government, in Brazil, is working to create 200 new Neonatal ICU beds.**
- ▣ **One of the problems for the deployment of these new services is the lack of trained human resources in inner towns.**

# OBJECTIVES

- ▣ **The project aims to promote specific training and technical assistance for health and administrative professionals from the Neonatal ICU of our State.**



# METHODOLOGY

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- ▣ **Technical visits to neonatal intensive care units were done for project presentation.**
- ▣ **A system of on line teleconsultation and videoconferencing was developed, connecting the team of Telemonitoring Center with the team of ICU in regional towns.**
- ▣ **There is availability of neonatologists, nurses and technicians on duty, during 12 h/day period.**
- ▣ **A team of specialist is available for off line teleconsultation: surgeons, cardiologists, neurologists, gastroenterologists and others.**

# METHODOLOGY

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- ▣ **The data have been collected for future assessment, analysis, and studies.**
- ▣ **Incorporation of new technologies for telemonitoring are considered.**
- ▣ **The coordination has been organizing workshops for the ICUs managers.**
- ▣ **Videoconference and semi-presential courses have been organized to offer permanent education for the professionals involved.**

# RESULTS

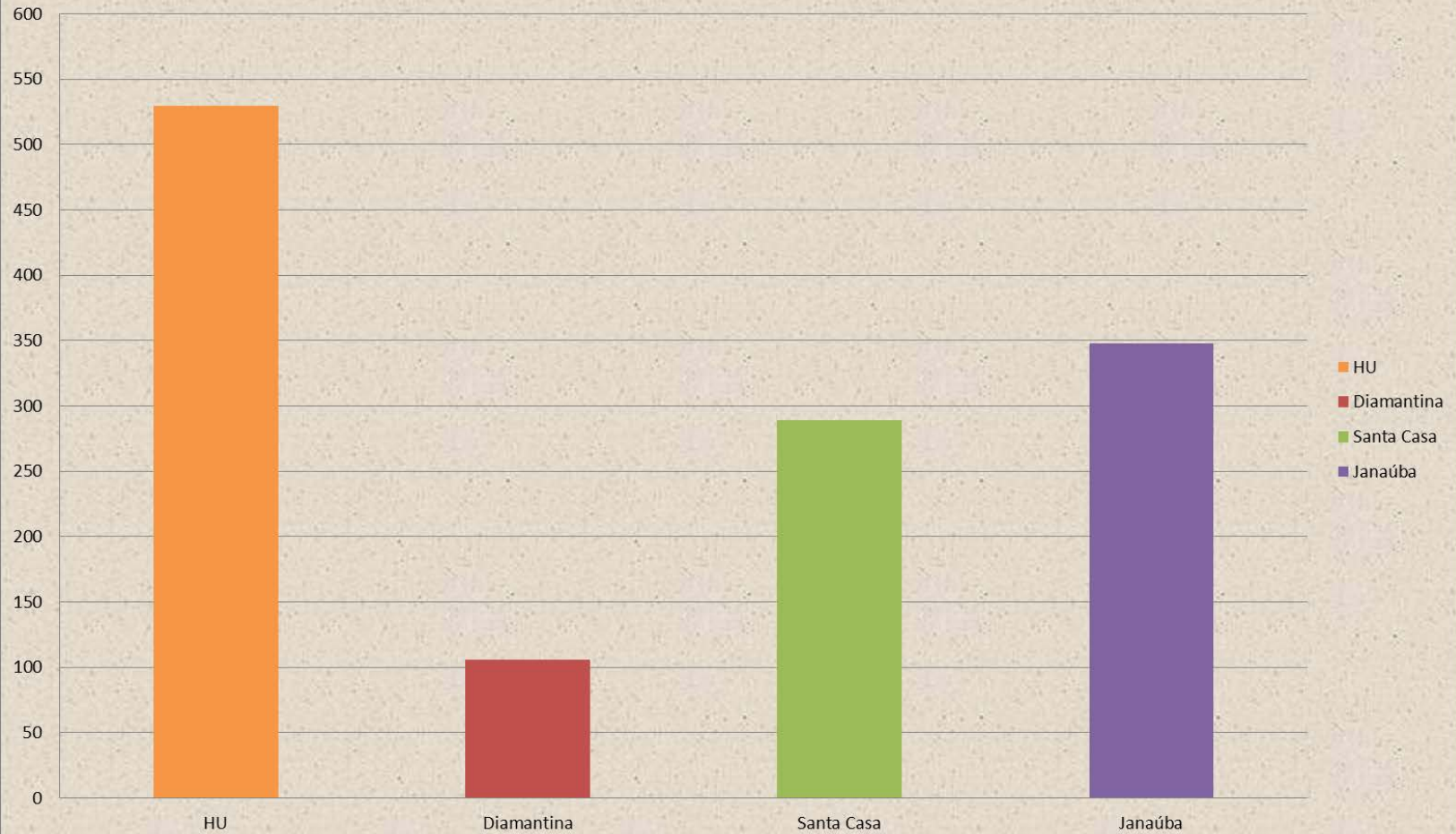
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- ▣ **Nowadays four Neonatal ICUs are connected with Telemonitoring Center.**
- ▣ **Neonatologists and nurses were trained to use the system and they are organizing clinical protocols to help the colleagues to work better in the new ICUs that will be in function soon.**
- ▣ **Videoconferences have been done for permanent education. Four videoconferences were held: Enteral Nutrition, Parenteral Nutrition, Vascular Access and Meningitis/Lumbar Puncture.**



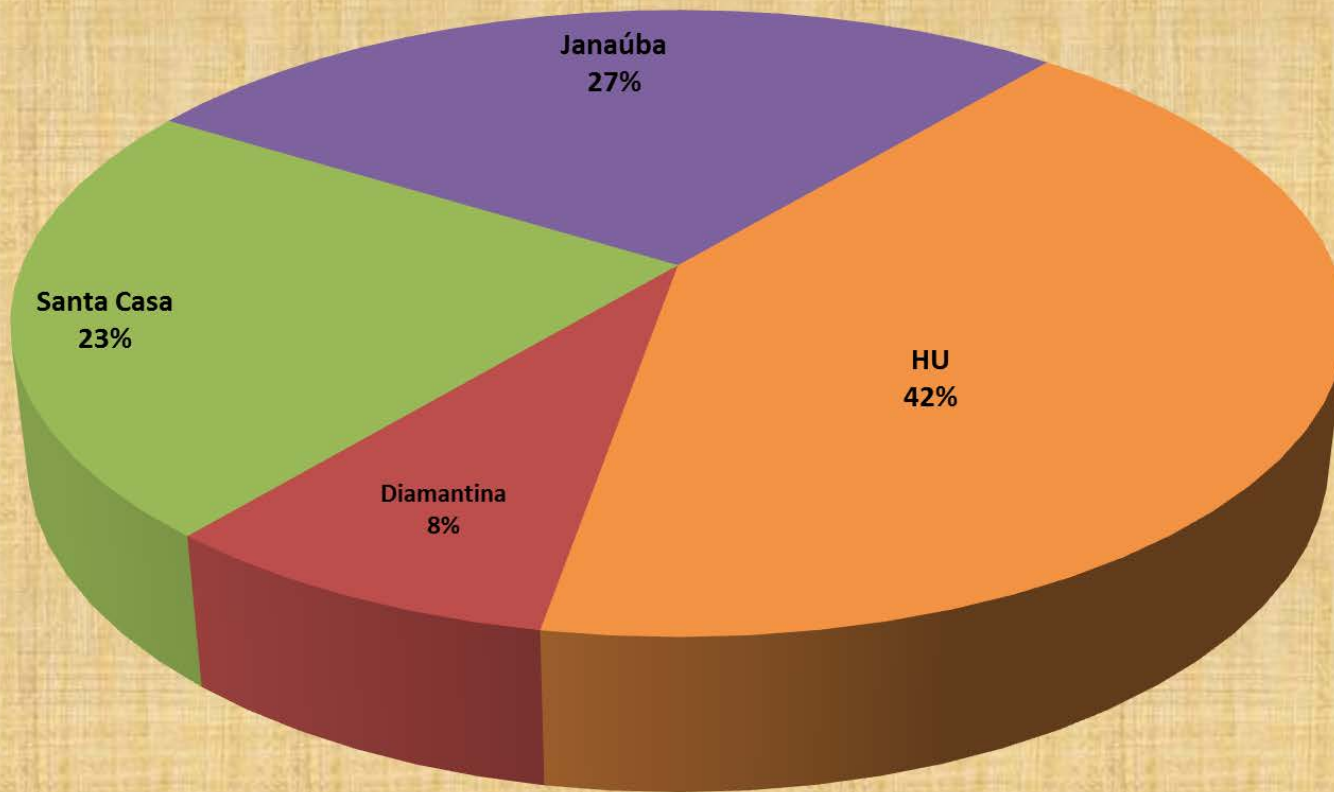
# RESULTS

Number of Teleconsultations December 15<sup>Th</sup> 2012 to March 15<sup>Th</sup> 2013



# RESULTS

December 2012 to March 2013



# RESULTS

DECEMBER 15<sup>Th</sup> 2012 TO MARCH 15<sup>th</sup> 2013

ICU	Number of Teleconsultations - Nurses	Number of Teleconsultations - Neonathologists	Number of teleconsultations - Experts	Total number of Teleconsultations	Average response time Specific area / month
Santa Casa - Montes Claros	144	141	7	292	4,25h
University Hospital Clemente de Faria	264	275	9	548	4,00h
Nossa Senhora da Saúde Hospital - Diamantina	38	57	4	99	0,10h
Janaúba Hospital	155	203	1	359	11h
Others	0	2	0	2	0
<b>TOTAL</b>	<b>601</b>	<b>678</b>	<b>21</b>	<b>1300</b>	<b>5h</b>

# DISCUSSION

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- ▣ **The provision of effective telemonitoring of the Neonatal Intensive Care Unit is the major area of interest in this project and a close study on this topic has been done by the professionals.**
- ▣ **The State Health Department is planning to incorporate new neonatal ICUs in telemonitoring.**
- ▣ **In a near future it is expected that the results can be better quantified.**

# DISCUSSION

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- ▣ **The ICU telemedicine approach, trademarked as eICU, by the dominant vendor, offers the promise of a fundamental reengineering of how intensive care is provided, yet it remains largely unstudied.**

(Berenson & Grossman, 2009)

- ▣ **Study with the association of remote monitoring of ICU patients with mortality, complications, and length of stay in six units didn't demonstrate a reduction in overall hospital mortality.**

(Thomas *et al.*, 2009)

- ▣ **Otherwise, an observational study with ICU patients cared before and after ICU telemonitoring period in 6 ICUs at 5 hospitals in the Gulf Coast region and concluded that the program is cost effective.**

(Franzini *et al.*, 2011)

**If the project saves lives and promotes  
continuing education for health  
professionals... It will be enough for us!**



# TELEMONITORAMENTO UTI NEONATAL



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