

# From Outbreak to Hand Rub Production; the Cameroon Local Hand Rub Project



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**CAMEROON BAPTIST CONVENTION**  
**HEALTH SERVICES**

# Objectives



- To share CBCHS experience
- To promote local alcohol hand rub production

# Outline



- Introduction
- Background
- Problem
- Interventions/outcome
- CBCHS hand rub project

# Conflict of Interest



- None
- We are not promoting the CBCHS hand rub

# Introduction



- Of the 4 million neonatal deaths worldwide annually, 22.5% (900,000) caused by sepsis (Li Zhang et al, 2016)
- 40% sepsis-related neonatal deaths in LMIC (Li Zhang et al, 2016)
- Hands are the most common mode of spread (Bauer-Savage et al, 2013)
- Associated with poor infection prevention or unhygienic practices during delivery and post natal care.
- Preventable with relatively basic and cheap interventions

# Background of BBH



- Tertiary, referral, mission hospital
- 250 beds
- Created in 1949
- 800 staff
- Wide range of services
- 30 bed OB unit, with one sink (2002)

# The problem/outbreak



- Multiple outbreaks of neonatal sepsis in the OB unit in Bango Baptist Hospital (BBH), NWR, Cameroon, affecting many neonates, leading to additional treatments, hospital stay and cost.
- No surveillance, no data before 2002
- 86/1000 cases in 2002

# Clinical Presentation/lab findings



- Skin sepsis (pustules)
- Septic knee
- *Staph aureus* and *Pseudomonas aeruginosa* from samples



# Contributing factors



- Inadequate hand hygiene
- Common-use items (petroleum jelly, soap, diaper etc.)
- Poor disinfection

# Inadequate hand hygiene facilities



Only one sink in a 30-bed postpartum ward, reserved only for drinking.

Many clinical procedures performed without washing hands

**Ignorance of the importance of hand hygiene**

# Common-use items(from baby to another)



Single petroleum jelly dispenser for multiple uses; babies', staff hands and lips

A single bar soap for multiple babies

Few bath basins for many babies

Single diaper on the scale

## Poor disinfection



0.05% chlorine was used to disinfect bath basins for 20 minutes before cleaning,

instead of the recommended 0.5% for 10 minutes which was proven to be effective against viruses

# Multimodal Interventions



- The common-use petroleum jelly removed.
- Moms allowed to apply petroleum jelly at bed side
- Sharing with neighbors
- Individual bar soap, diaper introduced
- Single bath basin per baby per day

# Multimodal strategies/intervention cont.



- Bath basins decontaminated with 0.5% chlorine for 10 minutes before cleaning
- Case definition and case register established
- Case conferences and hand hygiene workshops organized
- Three potable hand washing facilities added
- Alcohol hand rub produced locally and distributed to staff

# Hand hygiene interventions



Alcohol hand rub



Portable hand washing facility

Stand

Receiver

Portable Hand Washing Point

# Incidence of sepsis from 2002-2006

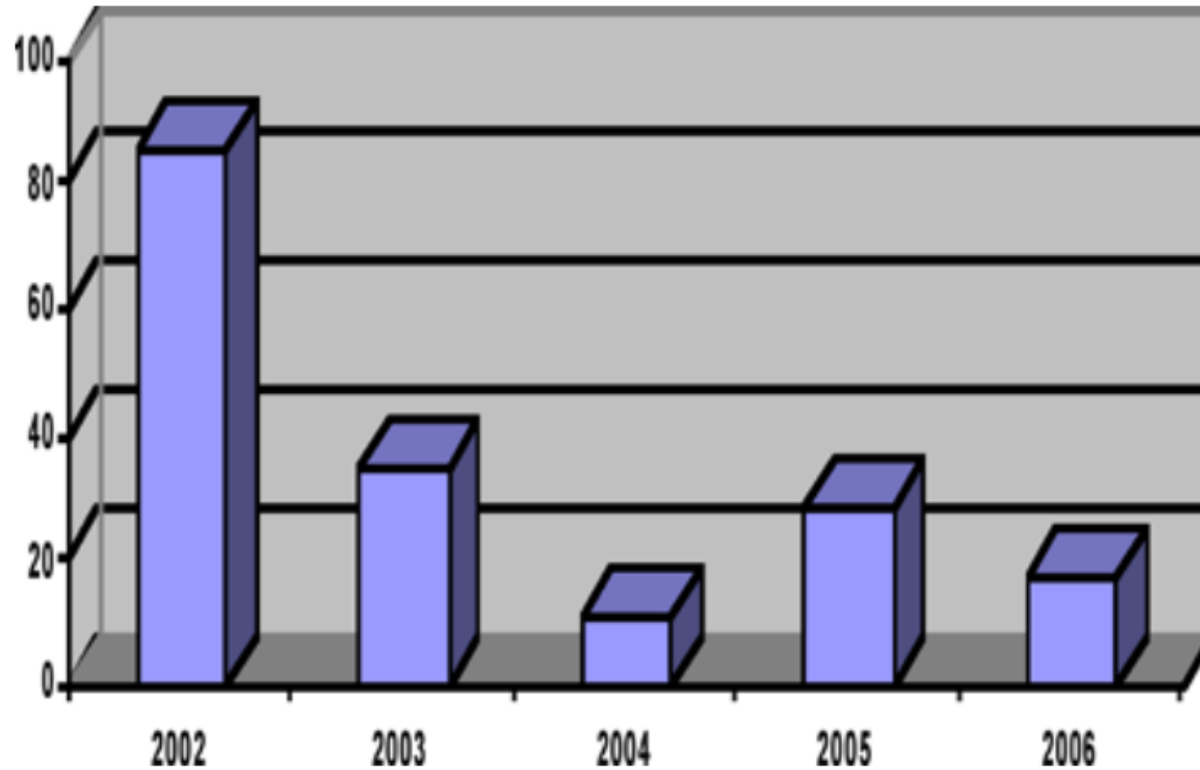


Figure 1. Septic spots per 1000 live births



# Production and use of Alcohol Hand Rub



- Motivated by the multiple neonatal sepsis outbreaks and insufficient hand hygiene facilities
- Started in Banson Baptist Hospital in 2003
- The propose was to promote hand hygiene compliance
- Piloted in four large facilities in 2012
- Scaled up to 37 facilities in 2017

# Modified WHO Formulation 2



- Isopropyl alcohol-99.8%
- Hydrogen peroxide-3%
- Glycerol -98%
- Sterile water
- Catalyst to form gel

# Quality control



- Microbiological test
- pH/concentration
- Efficacy

# Distribution



## Distribution



100 ml for staff  
pockets



500ml for tables

## Locally fabricated Hand rub dispensers



# Indicators



- Quality of hand rub produced
- Demand for hand rub by staff
- Quantity of alcohol hand rub used per facility
- Number of staff refilling personal hand rub within 14-19 days
- Number of staff with personal hand rub during on the spot checks

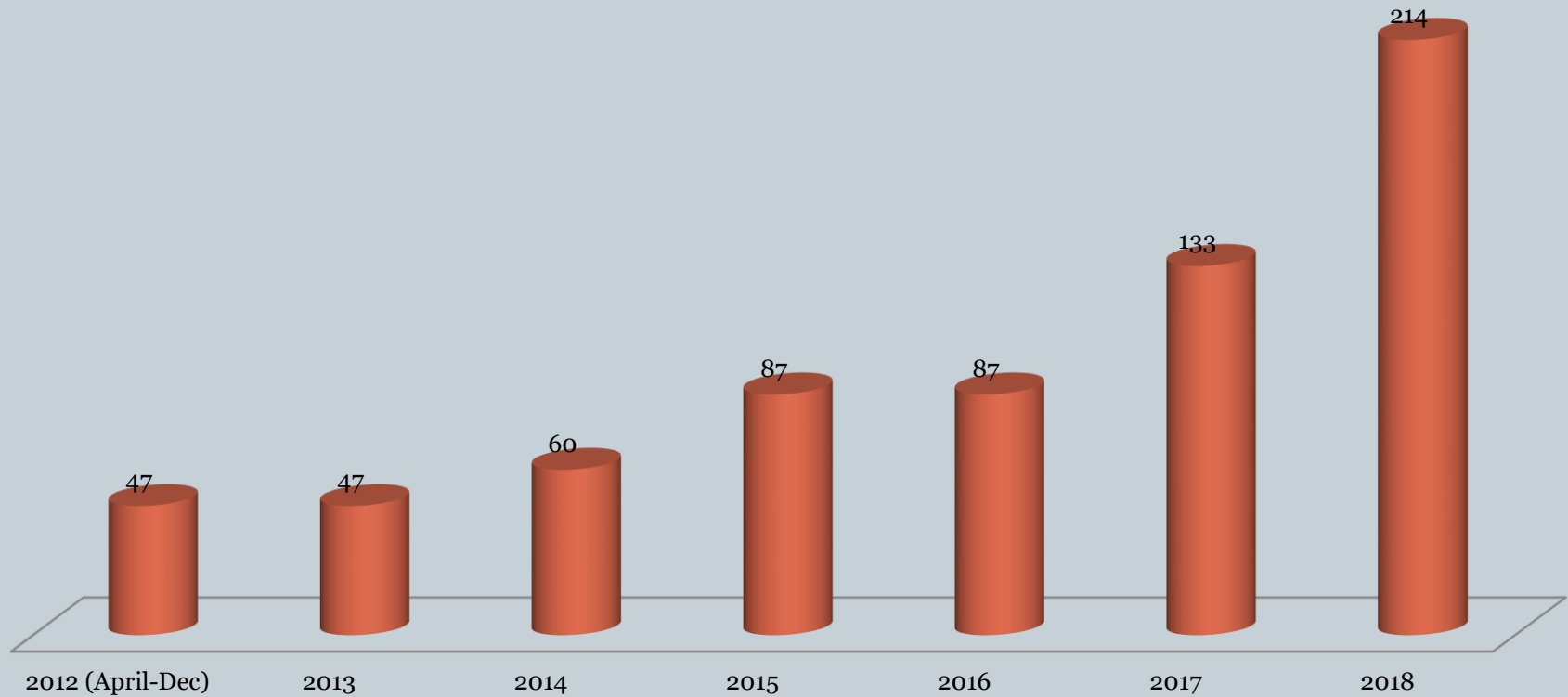


# Results

# Volume of Alcohol Hand Rub Produced and Distributed increased steadily



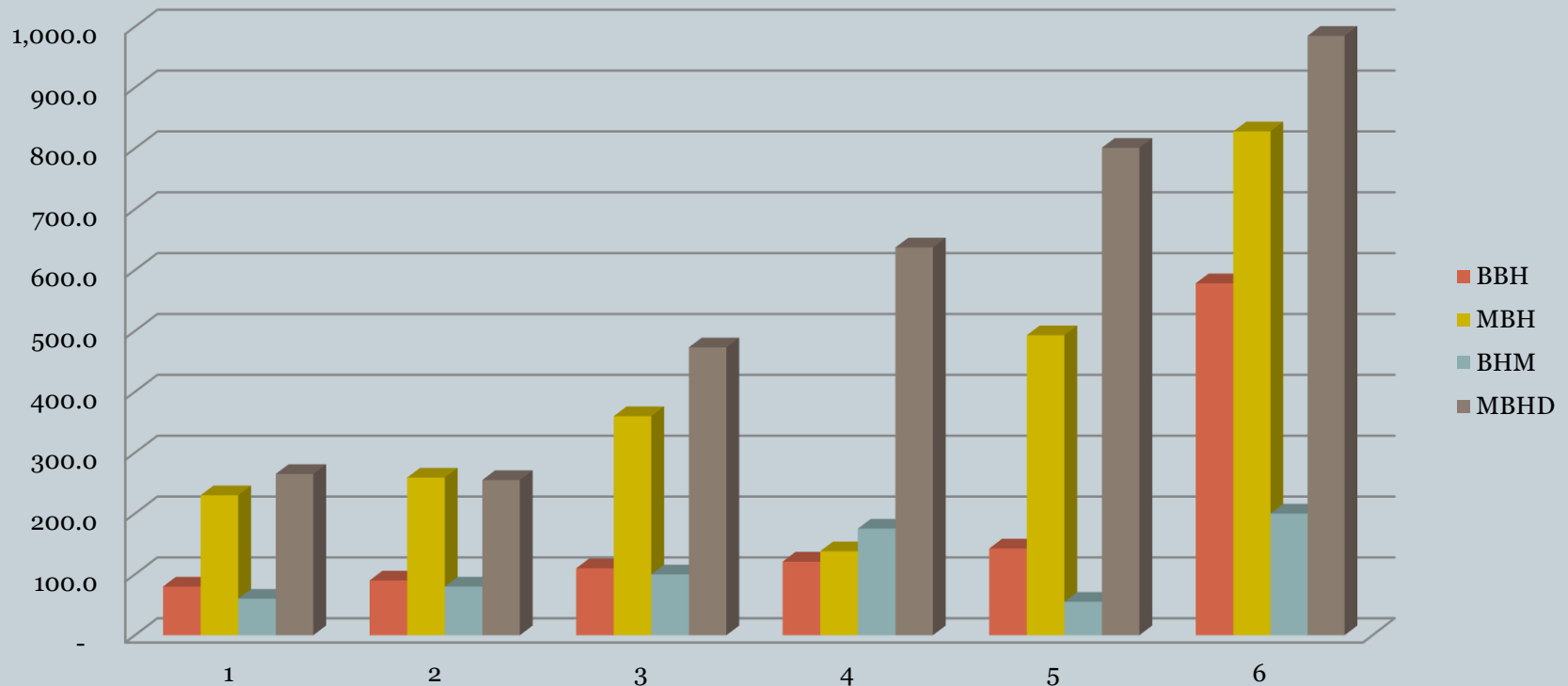
## Volume Per Month (Litres)



# Volume of hand rub used also increased steadily



## ABHR CONSUMPTION IN FOUR FACILITIES FROM 2012-2018(Litres)





## Results cont.



Demand for hand rub increased

Number of staff refilling 100ml personal hand rub within 14-19 days increased

Number of staff with personal hand rub in their pockets during spot check increased.

# Costs Analysis



Volume	Local	Imported	Deference
100ml	500Fcfa(\$1)	2,000Fcfa ( \$4)	1500Fcfa
500ml	1800Fcfa (\$3.6)	5,000Fcfa(\$10)	3,200Fcfa
1000ml	3,600Fcfa ( \$7.5)	8.000Fcfa (\$16)	4,400Fcfa
Dispenser	2,000Fcfa (\$4)	5,000Fcfa (\$ 10)	3,000Fcfa

# Sustainability strategies



- Local production reduces cost
- Strong leadership commitment
- Centralization (within the system) increases economies of scale
- Aligning production with existing activities (example: Central Pharmacy for CBC Health Services), for effective use of human and material resources
- Suitable partners and networking

# Challenges



- Production **is** entirely manual and labor-intensive
- Poor and inefficient delivery systems leading to stock outs in some facilities
- Inaccessibility of some facilities leading to delivery difficulties
- Misplacement or damage of containers by some staff
- Limited commitment of some leaders
- Poor monitoring systems in most facilities

# Lesson learnt



- Infection prevention is not rocket science
- Consistent application of basic strategies is key
- Alcohol hand rub can be produced and used in any setting
- Local production is key to sustainability.

# Conclusion/take home message



- Neonatal sepsis is the most common cause of neonatal deaths in LMIC
- Common use items are highly associated with spread
- Hand hygiene is the key preventive strategy

# Conclusion/take home message



- Alcohol hand rub is vital to improve hand hygiene practices and compliance
- There is a very serious need to promote local hand rub production
- Networks might be necessary to support/promote local hand rub initiatives

# Points for further discussion



- Can this initiative move from concept to action?
- How can we stimulate local hand rub production?
- Is external support necessary to stimulate local initiatives?
- How can WHO, ICAN, and similar IPC/WASH organizations be of help?
- What support can a technical working group provide to others interested in taking action?





Thanks for your kind  
attention.