

Dear Colleagues,

We are pleased to inform you that we have completed the analysis of surveys for the Consortium for Congenital Cardiac Care - Measurement of Nursing Practice (C4-MNP) state of practice assessment regarding the use of Chlorhexidine Gluconate (CHG) in Cardiac Intensive Care Units (CICU), cardiac step-down units, and Neonatal Intensive Care Units (NICU).

In 2013, the Center for Disease Control changed the labeling of CHG from “Not for use of in infants less than 2 months of age” to “use with caution in patients less than 2 months of age.” Based on research in pediatric and adult populations, the use of CHG as part of infection prevention has been incorporated by many into routine care of infants less than 2 months.

From this survey, we endeavored to gain a better understanding of current practices regarding CHG use across the nation.

This survey was developed by Celeste Chandonnet BSN, RN, CCRN-K, CIC, Infection Preventionist and Nursing Research Fellow at Boston Children's Hospital.

The invitation to participate was sent to 32 C4-MNP cardiac centers and neonatal nurses through a national neonatal nursing distribution list. Below, please find the aggregate result report.

We would like to extend our heartfelt appreciation for your continued commitment to this collaborative as we work to improve outcomes for pediatric cardiovascular patients.

Sincerely,



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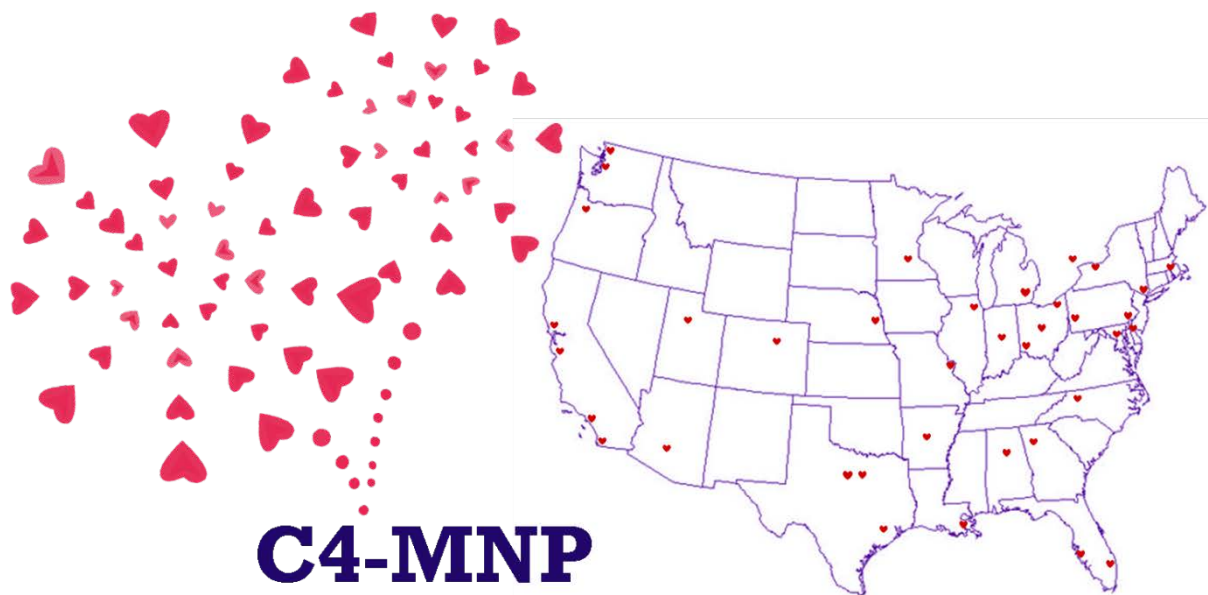
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# Consortium for Congenital Cardiac Care – Measurement of Nursing Practice

## *Use of Chlorhexidine Gluconate (CHG) in Patients Less Than 2 Months of Age*

### *State of Practice Assessment Result Report*

September 18, 2017 – October 16, 2017



Consortium for Congenital Cardiac Care Measurement of Nursing Practice

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## Executive Summary

### **Survey Overview**

Despite research suggesting CHG is routinely used for infection prevention in infants less than two months of age, there are concerns regarding its safety. In an effort to define the current state of practice, an electronic survey was developed and sent to cardiac intensive care units in freestanding children's hospitals and neonatal nurses across the nation. Of the 83 respondents, 41.0% represented units providing cardiac care and 57.8% represented neonatal care-related units.

### **Key Findings**

The majority of respondents (85%) reported use of CHG, with 97% of cardiac units reporting use in comparison to 77% of neonatal units.

- CHG was most frequently reported for CVC insertion (100% of cardiac units and 84% of neonatal units) and least frequently for CVC maintenance (73% of cardiac units and 49% of neonatal units).
- The largest difference in reported CHG use between unit types was in the context of bathing (94% of all cardiac units and 40% of neonatal units).
- Despite higher frequencies of reported CHG use, fewer cardiac care units have CHG-related policies in place in comparison to neonatal units, with the exception of CHG use for CVC dressing changes.
- In general, cardiac units reported lower frequencies of CHG use in patients  $\leq 36$  weeks of age in comparison to neonatal units.

### **Conclusion**

The results of this survey indicate CHG is being used in infants less than two months of age despite limited evidence to support its safety. More cardiac care units are using CHG than neonatal care units despite having fewer policies in place. With safety concerns remaining, it is important that standard policies and procedures are implemented for use of CHG in this patient population.

### **Next Steps**

The C4-MNP state of practice assessment regarding CHG use in infants less than 2 months of age in pediatric and neonatal clinical care settings generated additional opportunities for advancing science. It assessed variations in CHG use by cardiac versus neonatal unit type. Further research is needed to examine safety of CHG in this patient population.

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## Topic One: Demographics

Unit Category:

Respondents (N=83)	
	Frequency (%)
<b>Cardiac</b>	34 (41.0)
<b>Neonatal</b>	48 (57.8)

*Note: One respondent did not provide unit type; their data was not included in the subgroup analysis.*

Unit Type:

Respondents (N=82)	
Unit Type	Frequency (%)
<i>Cardiac Care-Related Units</i>	
CICU	23 (28.0)
PICU	3 (3.7)
Cardiac Step-down	6 (7.3)
Medical-Surgical Unit	1 (1.2)
Missing	1 (1.2)
<i>Neonatal Care-Related Units</i>	
NICU	46 (56.1)
Newborn Nursery	1 (1.2)
Labor and Delivery	1 (1.2)

*Note: The unit categorized as missing reported cardiac-care classification but omitted unit type.*

NICU Unit Level:

Respondents (N=46)	
NICU Level	Frequency (%)
Level II	5 (10.9)
Level III	23 (50.0)
Level IV	18 (39.1)

## Topic Two: Chlorhexidine Gluconate (CHG) Use

1. Do you use CHG in your unit?

	Frequency (%)	
	Cardiac (N=34)	Neonatal (N=48)
<b>Yes</b>	33 (97.1)	37 (77.1)
<b>No</b>	1 (2.9)	11 (22.9)

The following questions were asked only to those respondents who reported using CHG in the unit (n=70).

2. How is CHG used?

	Frequency (%)	
	Cardiac (N=33)	Neonatal (N=37)
<b>Bathing</b> (CHG bath cloths)	31 (93.9)	15 (40.5)
<b>CVC insertion</b> (Chloraprep or similar product)	33 (100.0)	31 (83.8)
<b>CVC dressing changes</b> (Chloraprep or similar product)	30 (90.9)	29 (78.4)
<b>CVC maintenance</b> (Biopatch or other similar product)	24 (72.7)	18 (48.6)
<b>Other</b>	1 (3.0)	6 (16.2)

*Note: Column totals exceed 100% due to option of selecting multiple responses.*

3. Of the 7 total respondents who reported "other" CHG use:

Response	Unit Type
We use for bathing but switched from bath cloths to Hibiclens	Cardiac
Skin prep for circumcisions	Neonatal
UVC and UAC placement	Neonatal
For umbilical lines, we use CHG for infants < 27 weeks	Neonatal
crack vial/wet swab/back and forth IV site/saline wipe	Neonatal
Pre-op prep	Neonatal
Used to scrub the hub	Neonatal

### Topic Three: CHG Use for Bathing

The following questions were asked only to those respondents who reported using CHG for bathing (n=46).

1. In what populations do you use CHG for bathing?

	Frequency (%)	
	Cardiac (N=31)	Neonatal (N=15)
<b>Less than 28 weeks</b>	0 (0.0)	3 (20.0)
<b>28-36 weeks</b>	2 (6.5)	6 (40.0)
<b>37-48 weeks</b>	20 (64.5)	8 (53.3)
<b>Over 2 months</b>	31 (100.0)	12 (80.0)

*Note: Column totals exceed 100% due to option of selecting multiple responses.*

2. How often is CHG used for bathing?

	Frequency (%)	
	Cardiac (N=31)	Neonatal (N=15)
<b>Daily</b>	27 (87.1)	10 (66.7)
<b>Weekly</b>	0 (0.0)	1 (6.7)
<b>Pre-op</b>	15 (48.4)	3 (20.0)
<b>Other</b>	5 (16.1)	1 (6.7)

*Note: Column totals exceed 100% due to option of selecting multiple responses.*

3. Of the 6 total respondents who reported “other” frequency of CHG use for bathing:

Response	Unit Type	Count
Daily if CVL present	Cardiac	3
Pre-op patients receive 2 baths night before and day of surgery. Patients then receive daily CHG bath for 7 days post-op and continue daily bathing if they have a central line in place.	Cardiac	1
Patients less than 2 months old but greater than 35 weeks and 2.5 kg receive CHG bath 3 times a week if they have a central line. All patients greater than 2 months with CVC receive CHG bath daily	Cardiac	1
Twice a week	Neonatal	1

4. Of the 18 respondents reporting CHG use for pre-op bathing, how many baths?

	Frequency (%)	
	Cardiac (N=15)	Neonatal (N=3)
<b>1 bath</b>	8 (53.3)	1 (33.3)
<b>2 baths</b>	6 (40.0)	2 (66.7)
<b>3 baths</b>	1 (6.7)	0 (0.0)

5. Does your hospital have a policy guideline/procedure for CHG use for bathing?

	Frequency (%)	
	Cardiac (N=31)	Neonatal (N=15)
<b>Yes</b>	24 (77.4)	13 (86.7)
<b>No</b>	7 (22.6)	2 (13.3)

#### Topic Four: CHG Use for CVC Insertion

*The following questions were asked only to those respondents who reported using CHG for CVC insertion (n=64).*

1. In what populations do you use CHG for CVC insertion?

	Frequency (%)	
	Cardiac (N=33)	Neonatal (N=31)
<b>Less than 28 weeks</b>	1 (3.0)	10 (32.3)
<b>28-36 weeks</b>	10 (30.3)	25 (80.6)
<b>37-48 weeks</b>	25 (75.8)	23 (74.2)
<b>Over 2 months</b>	32 (97.0)	24 (77.4)

*Note: Column totals exceed 100% due to option of selecting multiple responses.*



2. Does your hospital have a policy guideline/procedure for CHG use for CVC insertion?

	Frequency (%)	
	Cardiac (N=32)	Neonatal (N=31)
<b>Yes</b>	30 (90.9)	30 (96.8)
<b>No</b>	2 (6.1)	1 (3.2)

### Topic Five: CHG Use for CVC Dressing Changes

The following questions were asked only to those respondents who reported using CHG for dressing changes (n=59).

1. In what populations do you use CHG for CVC dressing changes?

	Frequency (%)	
	Cardiac (N=30)	Neonatal (N=29)
<b>Less than 28 weeks</b>	1 (3.3)	9 (31.0)
<b>28-36 weeks</b>	4 (13.3)	20 (69.0)
<b>37-48 weeks</b>	22 (73.3)	21 (72.4)
<b>Over 2 months</b>	29 (96.7)	21 (72.4)

*Note: Column totals exceed 100% due to option of selecting multiple responses.*

2. How often is CHG used for CVC dressing changes?

	Frequency (%)	
	Cardiac (N=30)	Neonatal (N=29)
<b>Weekly</b>	26 (86.7)	17 (58.6)
<b>As Needed</b>	6 (20.0)	14 (48.3)
<b>Other</b>	4 (13.3)	5 (17.2)

*Note: Column totals exceed 100% due to option of selecting multiple responses.*

3. Of the 9 respondents reporting “other” frequency of using CHG for CVC dressing changes:

<b>Response</b>	<b>Unit Type</b>	<b>Count</b>
Every 3 days and when lifting	Cardiac	2
Every 48 hours unless PICC or other 'permanent' catheter then weekly unless soiled. Changes when soiled	Cardiac	2
48 hours with gauze under tegaderm	Neonatal	1
1.9 French PICCs are PRN while 2.6fr and larger are weekly or sooner if needed	Neonatal	1
If Broviac, then weekly otherwise only when drsg not intact	Neonatal	1
Prn dressing changes for those less than two months adjusted age	Neonatal	1
Assessed on a regular basis by bedside RN and PICC resource staff. Changed if loose, transparent dressing peeling at edge. Dressing not intact	Neonatal	1

4. Does your hospital have a policy guideline/procedure for CHG use for CVC dressing changes?

	<b>Frequency (%)</b>	
	<b>Cardiac (N=30)</b>	<b>Neonatal (N=28)</b>
<b>Yes</b>	29 (96.7)	27 (93.1)
<b>No</b>	1 (3.3)	1 (3.4)

### **Topic Six: CHG Use for CVC Maintenance**

*The following questions were asked only to those respondents who reported using CHG for CVC maintenance (n=42).*

1. In what populations do you use CHG for CVC maintenance?

	<b>Frequency (%)</b>	
	<b>Cardiac (N=24)</b>	<b>Neonatal (N=18)</b>
<b>Less than 28 weeks</b>	1 (4.2)	5 (27.8)
<b>28-36 weeks</b>	2 (8.3)	11 (61.1)
<b>37-48 weeks</b>	12 (50.0)	12 (66.7)
<b>Over 2 months</b>	22 (91.7)	13 (72.2)

*Note: Column totals exceed 100% due to option of selecting multiple responses.*

2. If CHG is used for CVC maintenance, how often?

	Frequency (%)	
	Cardiac (N=24)	Neonatal (N=18)
<b>Daily</b>	2 (8.3)	1 (5.6)
<b>Weekly</b>	18 (75.0)	14 (77.8)
<b>As Needed</b>	0 (0.0)	4 (22.2)
<b>Other</b>	2 (8.3)	1 (5.6)

*Note: Column totals exceed 100% due to option of selecting multiple responses.*

3. Of the 3 respondents reporting “other” frequency of using CHG for CVC maintenance:

Response	Unit Type	Count
1.9 fr PICCs are PRN	Neonatal	1
Every 3 days	Cardiac	2

4. Does your hospital have a policy guideline/procedure for CHG use for CVC maintenance?

	Frequency (%)	
	Cardiac (N=23)	Neonatal (N=18)
<b>Yes</b>	21 (87.5)	17 (94.4)
<b>No</b>	2 (8.3)	1 (5.6)

### Topic Seven: CHG Other Use

The following questions were asked only to those respondents who reported using CHG for other uses (n=7).

1. In what populations do you use CHG for other uses?

	Frequency (%)	
	Cardiac (N=1)	Neonatal (N=6)
Less than 28 weeks	0 (0.0)	1 (16.7)
28-36 weeks	0 (0.0)	5 (83.3)
37-48 weeks	1 (100.0)	4 (66.7)
Over 2 months	1 (100.0)	3 (50.0)

Note: Column totals exceed 100% due to option of selecting multiple responses.

2. If CHG is used for “other”, how often?

	Frequency (%)	
	Cardiac (N=1)	Neonatal (N=5)
Daily	1 (100.0)	0 (0.0)
Weekly	0 (0.0)	1 (16.7)
Other	0 (0.0)	4 (66.7)

Note: Column totals may not equal 100% due to option of selecting multiple responses.

3. Of the 4 respondents reporting “other” frequency of other CHG use:

Response	Unit Type	Count
One time for circumcision	Neonatal	1
As needed at delivery	Neonatal	1
Preop night before and morning of surgery	Neonatal	1
CHG is not used in neonates < 1000 gm	Neonatal	1

4. Does your hospital have a policy guideline/procedure for CHG use for “other” use?

	Frequency (%)	
	Cardiac (N=1)	Neonatal (N=6)
Yes	0 (0.0)	5 (83.3)
No	1 (100.0)	1 (16.7)