

## Phenobarbital CSCI – How do you dilute it?

August – September 2015

Number of responses = 17 (note this survey was for UK members only)

1) On average, approximately how often have you used phenobarbital by CSCI in the last 2 years?  
(one\_of)

answer	votes	% of vote
Most weeks	0	0%
Most months	0	0%
Up to 20 times	0	0%
Up to 10 times	1	6%
Up to 5 times	4	24%
Once or twice	8	47%
Have not used in the last 2 years	2	12%

2) Which strength of phenobarbital injection do you use?  
(one\_of)

answer	votes	% of vote
15mg/mL only	0	0%
30mg/mL only	0	0%
60mg/mL only	0	0%
200mg/mL only	6	35%
A mixture of the above strengths	8	47%
Do not know	2	12%

3) What diluent do you generally use to further dilute phenobarbital injection?  
(one\_of)

answer	votes	% of vote
Water for injection	10	59%
0.9% saline	5	29%
5% glucose	0	0%
No standard diluent	0	0%
Do not know	2	12%

4) For CSCI, do you follow the traditional dilution guidelines of 10 times the volume of the injection for *all* phenobarbital doses?  
(one\_of)

answer	votes	% of vote
Yes	7	41%
No	7	41%
Do not know	3	18%

4a) If YES, please describe how you give larger doses, i.e. >600mg phenobarbital

Have not gone beyond 600mg in last 2 years
Not needed to use dose >600mg/24h
We haven't had to use doses above 400mg so have not had this problem, I suspect if it was a problem we would use a second CSCI
Sometimes I have needed to remove McKinley T34 pump from lock box, so that contents can be made up to 34mL WFI in the syringe. Sometimes required to get the pump adjusted by medical physics to run as a 12 hour infusion
Use 2 syringe drivers or give by IV infusion
Multiple syringe drivers
Using a Braun pump and dripping it through

4b) If NO, please describe your usual dilution practice and include the maximum dose, diluent and the volume you have used successfully without site problems.

Use 200mg/mL and make up to 21mL total volume with WFI
Use 400mg in 14mL WFI
Up to 1200mg to a volume of 34mL in 0.9% saline
Up to 1200mg/24h to max we can get in 20ml syringe in a McKinley pump (approximately 18mL)
Have only used 100 to 200mg so far in 17mL 0.9% saline
Max of 34mL in a 50ml syringe via McKinley CSCI. Max dose of 1200mg/24h in WFI using 200mg/mL

5) For an average dose of phenobarbital 800mg/24h CSCI, i.e. 4mL of phenobarbital injection 200mg/mL, what is the usual final total volume of the infusion that you have used?

answer	votes	% of vote
44mL total volume (i.e. diluting <i>with</i> 10 times its own volume)	3	18%
40mL total volume (i.e. diluting <i>to</i> 10 times its own volume)	1	6%
34mL total volume (i.e. the approximate maximum fill volume of a 50mL syringe in a Mckinley T34 syringe pump)	3	18%
22mL total volume (i.e. the approximate maximum fill volume of a 30mL syringe in a Mckinley T34 syringe pump)	1	6%
17mL total volume (i.e. the approximate maximum fill volume of a 20mL syringe in a Mckinley T34 syringe pump)	2	12%
Less than 17mL	0	0%
Have not used a dose of 800mg phenobarbital	4	24%
Do not know	2	12%

5a) Have you experienced any site problems with this?

Please also include information about whether you find you need to change the site more frequently.

**WFI**

No (34mL total volume)

No (22mL total volume)

No (total volume unknown)

Only after prolonged use ( >5 days, but have not used a dose of 800mg phenobarbital)

Sites generally do need to be changed more frequently than that seen with other drugs via a separate CSCI in the same patient. In some we have needed to change the phenobarbital CSCI site daily or every other day (have not used a dose of 800mg phenobarbital)

**0.9% saline**

No; both patients have died within 3 days of starting CSCI of phenobarbital (44mL total volume)

No (40mL total volume)

No (34mL total volume; short term use only)

No (17mL total volume)

**Diluent unknown**

No (17mL total volume)

No (volume unknown)

6) If possible, please state the maximum dose of phenobarbital you have used by CSCI successfully without site problems, and the diluent and final total volume that it was contained in.

200mg in 0.9% saline

400mg/24h in WFI

400mg in 23mL in WFI (=17.4mg/mL)

400mg/24h in 17mL WFI (=23.5mg/mL)

600mg in 15mL WFI (=40mg/mL)

800mg in 22mL WFI (=36.4mg/mL)

800mg/24h in 0.9% saline to 44mL total volume using a Braun pump (=18.1mg/mL)

800mg in 0.9% saline used about 3 or 4 years ago, 2 drivers used

1200mg in 34mL sodium chloride 0.9% (=35.3mg/mL)

1200mg in 21mL WFI (=57.1mg/mL)

1200mg/24h to max we can get in 20mL syringe in a McKinley pump ≈ 18mL (=66.7mg/mL)

7) Further comments.

Have never had any issues over a number of years

Have also given p.r.n. both IM and SC without irritation or tissue necrosis as stated

Have given larger doses via IVI, mixed in 0.9% saline Gave 1.8g/24hr IVI this way because patient already had 2 syringe drivers and using multiple others seemed unsafe