

Nursing by Numbers or Nursing with Numbers?

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Background

Nursing numeracy manifestly matters: to patients, to nurses themselves, to their employers, to the public and to nurse educators (Coben 2008).

.....Yet there is no consensus with regard to the level or assessment of this critical area of nursing. This is the case nationally in the UK and globally.



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How can a benchmark assessment support students and teachers?

Students in nursing must be:

- **prepared effectively**
- **supported most effectively by their lecturers**
- **And employable**

Variation in outcome measures for numeracy mean students learn to succeed by numbers, playing 'dot to dot' but struggling to see a whole picture



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Working with Numbers

If students and teachers and employers know what numeracy to expect of registrants at the end of nursing programmes - the whole picture is clear to see.

Lecturers can facilitate working with numbers to help students to gain the skills to meet their knowledge needs



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Study aims

To determine the numeracy skills needed for successful calculation of medicine dosages in clinical practice and the valid assessment of these.

1. Development of an evidence-based benchmark of skills required for medicines calculation.
2. Comparison of assessment mechanisms for validity



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Study Outline

- Pilot study in England – 50 students from 1 university
- Main study in Scotland 500 students from 6 Universities
- Today's presentation will reflect pilot data



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The pilot study

- 50 English student nurses at beginning of 3rd year undertook a computer based numeracy assessment including 28 medication calculation task activities
- 9 students undertook a further computer assessment and also a practical activity



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The computer activity

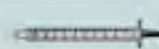
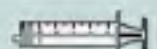

Question 22 of 30

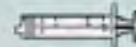
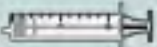
Extract the relevant information from the prescription chart and the medication product label. Calculate the correct dose to administer and choose the appropriate syringe with which to administer it.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

| REGULAR PRESCRIPTION MEDICINES | | | | DATE |
|--------------------------------|-------|----------------------|----------------------|------|
| MEDICINE (Approved Name) | | START DATE | ADMINISTRATION TIMES | |
| Ampicillin | | 1/10/2007 | 06:00 | |
| DOSE | ROUTE | SPECIAL INSTRUCTIONS | | |
| 500mg | I.M. | - | 14:00 | |
| DOCTOR'S SIGNATURE | | PHARMACY SUPPLY | | |
| Dr. Jones | | A. Mann | 22:00 | |



1ml  5ml  20ml 

2ml  10ml 


The computer activity

Question 11 of 30

Extract the relevant information from the prescription chart and the medication product label. Calculate the correct dose to administer and choose the appropriate method with which to administer it.


1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30

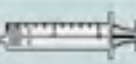
| REGULAR PRESCRIPTION MEDICINES | | | | DATE |
|--------------------------------|-------|----------------------|-------------------|------|
| MEDICINE (Approved Name) | | START DATE | REGISTRATION TIME | |
| Chlorpromazine Hydrochloride | | 3/20/2007 | 06:00 | |
| DOSE | ROUTE | SPECIAL INSTRUCTIONS | | |
| 25mg | ORAL | - | 14:00 | |
| DOCTOR'S SIGNATURE | | PHARMACY SUPPLY | | |
| Dr. Jones | | A. Mann | | |
| | | 22:00 | | |




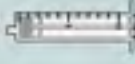
Chlorpromazine Hydrochloride
25mg / 5ml

Medicine Pot

5ml 

10ml 

5ml 

10ml 

Evaluation

SECTION 2: HOW CLOSELY THE ASSESSMENT TASKS REPRESENT MEDICATION DOSAGE AND IVI CALCULATION REQUIREMENTS IN CLINICAL PRACTICE.

2a: The assessment tasks represent an accurate method for measuring the medication dosage calculation requirements experienced in clinical practice.

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Computer | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Practice | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

2b: The assessment tasks represent an accurate method for measuring the IVI calculation requirements experienced in clinical practice.

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Computer | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Practice | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

2c: The time taken to interpret, calculate and complete the medication dosage and IVI calculation problems in the assessment is representative of the time taken in clinical practice.

| | Strongly Agree | Agree | Disagree | Strongly Disagree |
|----------|-----------------------|-----------------------|-----------------------|-----------------------|
| Computer | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |
| Practice | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> | <input type="radio"/> |

Please make any additional comments here:

Additional Comments:



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Next steps...

- 500 students from across 6 Universities in Scotland are participating in the main study
- 100 students will complete the practical and the computer analysis
- All students will evaluate the usefulness and reality of the packages appraised.
- Study is ongoing and will report in April 2009



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