

# EVIDENCE-BASED ASTHMA TRAINING IMPROVES ASTHMA MANAGEMENT

## SKILLS IN GENERAL PRACTICE: A COMMUNITY-BASED SURVEY

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### Background

The BTS/SIGN Asthma Guideline provides evidence-based recommendations for the diagnosis and treatment of asthma. Although easily accessible online, the guideline alone may not be sufficient to change practice, and community-based health professionals may benefit from an educational package linking the guideline to practice. Here we assess the effects of accredited asthma training, based on the guideline, on clinical practice in primary care.

### Methods and participants

- 526 primary care nurses enrolled on an accredited (Education for Health) diploma level asthma module received a 30-item postal questionnaire at the beginning (baseline) and end of the course (6 months).
- Student demographic characteristics were collected (these included experience of working with asthma patients and age group of clients).
- Self-reported confidence in ability to provide appropriate asthma care and education to patients and the frequency of performing key components of the guidelines were measured using a Likert scale of 1 (poor confidence or low frequency) to 5 (high confidence or high frequency).
- Enhancement of practitioner role were measured using yes/no responses and a Likert scale of 1 (not at all enhanced) to 5 (greatly enhanced).
- Paired data were analysed using McNemar's test.

### Results

- 303 paired sets of data were suitable for analysis (58% overall response rate).
- 93% of the allied health professionals worked with patients with asthma: four-fifths (80%) cared for both adults and children and 84% had less than 5 years experience with this client group (see Table 1).
- The proportion of the respondents who reported they were 'usually confident (4)' or 'very confident (5)' in their ability to provide appropriate asthma care and education to patients rose from 10% to 84% (Table 2)

Respondents currently working with asthma patients (n=303)	Yes	93%
	No	7%
Respondents' client groups	Adult & children	80%
	Children only	2%
	Adults only	18%
Respondent's experience of working with asthmatic patients (years) (n=186)	0 – 2 years	61%
	2 – 5 years	23%
	6 – 9 years	7%
	10+ years	10%

Table 1: Respondents' demographic characteristics

- There was a significant increase from baseline in frequency of taking a structured respiratory history ('most times'/'always' 38% to 80%; $p<0.0001$ ) and measurement of peak expiratory flow (65% to 92%; $p<0.0001$ ) (Table 3)
- Frequency of checking of inhaler technique (58% to 91%; $p<0.0001$ ) and checking adherence to treatment (62% to 92%; $p<0.0001$ ) also following training (Table 3)
- The use of bronchodilator reversibility testing for diagnosis increased from 36% to 76% ( $p<0.001$ ), whilst the proportion of nurses who usually or always gave advice to patients and/or prescribers on inhaler device selection increased from 25% to 74% ( $p<0.0001$ ) (Table 4)
- 57% respondents reported enhancement of their clinical role and 54% reported enhancement of their professional education role in teaching others in their workplace

Question	Pre/post	combined 4 and 5	No. paired datasets	McNemar test $\chi^2$
21. I understand the <b>causes and pathophysiology</b> of asthma	Pre Post	52 (17%) 265 (88%)	298	<0.0001
22. I can take a <b>comprehensive respiratory history</b> from a patient	Pre Post	49 (17%) 261 (87%)	293	<0.0001
25. I <b>understand the various drug treatment strategies</b> for asthma	Pre Post	48 (16%) 253 (84%)	299	<0.0001
26. I can use the Guidelines to <b>choose appropriate medications</b> for patients	Pre Post	48 (16%) 166 (89%)	286	<0.0001
27. I feel confident in my ability to <b>provide appropriate asthma care &amp; education</b> to patients	Pre Post	29 (10%) 254 (84%)	296	<0.0001

Table 2: Self-reported confidence and knowledge.

Question	Pre/post	combined 4 and 5	No. pair datasets	McNemar test $\chi^2$
10. I take <b>peak flow readings</b>	Pre Post	194 (65%) 276 (92%)	295	<0.0001
11. I <b>check inhaler device</b> technique	Pre Post	172 (58%) 275 (91%)	293	<0.0001
12. I <b>teach patients how to use a home peak flow meter &amp; diary</b>	Pre Post	83 (28%) 171 (57%)	290	<0.0001
13. I take a <b>structured, formal, asthma history</b> from most patients	Pre Post	110 (38%) 239 (80%)	287	<0.0001
14. I formulate a <b>structured asthma treatment plan</b> with the patient	Pre Post	73 (25%) 200 (68%)	282	<0.0001
15. I provide a <b>written asthma action plan</b> for patients	Pre Post	43 (15%) 155 (53%)	283	<0.0001
16. I <b>check compliance</b> with medication	Pre Post	178 (62%) 274 (92%)	284	<0.0001
17. I <b>advise</b> patients and/or prescribers <b>on device selection</b>	Pre Post	73 (25%) 218 (74%)	295	<0.0001
18. I ask about <b>smoking status</b>	Pre Post	274 (92%) 291 (97%)	296	0.0017

Table 3: Frequency of performing key tasks

Question	Pre/post	Yes	No	No. paired datasets	McNemar test $\chi^2$
8. Do you carry out <b>bronchodilator reversibility testing</b> for diagnosis?	Pre post	105 (36%) 227 (76%)	189 (64%) 72 (24%)	290	<0.001
9. Do you <b>write and sign prescriptions</b> for asthma medications?	Pre post	11 (4%) 18 (6%)	285 (96%) 280 (94%)	291	<0.05

Table 4: Asthma diagnosis and prescribing

### Summary

- Significant increase in the proportion of nurses who were confident to provide appropriate asthma care and education to patients and the frequency of performing key components of the BTS/SIGN guidelines
- Enhanced clinical and professional education role

### Conclusion

- Nurses who completed a BTS/SIGN Guideline-based accredited asthma module reported an increase in the management skills associated with improved diagnosis and treatment of asthma
- Training a nurse within the practice can encourage knowledge-sharing among colleagues and therefore aid local dissemination of the key points of the Guidelines