GASP
Giving Asthma Support to Patients

Presented by
Jo Moorcroft NZRN PGCertNurs
14 October 2015
The Background
# Asthma Clinic - Initial & Follow up Assessments

**McNay/James**  
Registered Asthma Nurse - First Name: [Name]  
([Date of Birth] - [Gender])  
([Occupational History])  
([Drug Allergies])

## Asthma History
- Year of onset of symptoms: [Year]  
- Year of asthma diagnosis: [Year]  
- Age of asthma diagnosis: [Age]  

## Family History
- Father: [Yes/No]  
- Mother: [Yes/No]  
- Brother: [Yes/No]  
- Sister: [Yes/No]  
- Grandparent: [Yes/No]  
- Other: [Yes/No]

## Personal History
- Personal history of:  
  - Hayfever: [Yes/No]  
  - Asthma: [Yes/No]  
  - Colds: [Yes/No]  
  - Other: [Yes/No]

## Asthma Exacerbation in previous 12 m.
- [Yes/No]  
- If Yes, how many?

## Hospital Admission
- [Yes/No]

## Oral Steroids
- [Yes/No]

## Provocation
- Exercise: [Yes/No]  
- Cold air: [Yes/No]  
- Respiratory infection: [Yes/No]  
- Dust: [Yes/No]  
- Emotional stress: [Yes/No]  
- Work: [Yes/No]  
- Animals: [Yes/No]  
- Other: [Yes/No]

## Investigations
- Height: [m]  
- Weight: [kg]  
- BMI: [kg/m^2]

## Smoking
- [Yes/No]  
- If Yes, how many cigarettes per day: [Yes/No]

## urinalysis
- Glucose: [Yes/No]  
- Protein: [Yes/No]

## Medication
- [Yes/No]  
- Predicted FEV1: [L]  
- Predicted FEV1: % Predicted: [L]

## CIB (CIB)

*Note: The document contains a table with columns for height, weight, BMI, smoking status, urinalysis results, and medication.

*Image: A nurse standing with a calculator and a question mark.
“I wish someone had told me this years ago”
Here's a Curative Smoke for ASThma...

www.onlinapot.org

... impregnated with medicaments that bring quick relief. ‘GRIMAULT’ Indian Cigarettes offer enjoyment plus relief from this harassing complaint. Try a pack today.

‘Grimault’ INDIAN CIGARETTES

Distributors
GRACE KENNEDY & CO., LTD. — KINGSTON

CIGARES DE JOY
GIVE IMMEDIATE RELIEF
IN CASES OF
ASTHMA, COUGH, BRONCHITIS, HAY-FEVER, INFLUENZA
SHORTNESS OF BREATH

Dr. Batty’s
For Your Health
Asthma Cigarettes
Since 1882

For the temporary relief of paroxysms of asthma

Effectively Treats:
ASTHMA, HAY FEVER, FOUL BREATH
ALL DISEASES OF THE THROAT,
HEAD Colds, CANKER SOURS
BRONCHIAL IRRITATIONS
Not Recommended for Children under 6.
Further acknowledgements

Dr Felix Ram
Professor Bruce Arroll
Respiratory nurse colleagues
GASP nurses

1 VENTOLIN In 100mcg/dose CFC Fr
Shake well and inhale TWO puffs in the rectum for asthma
1 Repeat before 10 Sept 07

430152/1 12Jun07

ASTHMA MEDICATION
You're doing it wrong
Nurse led clinics

- Appropriately trained nurses produce as high quality care as primary care doctors and as good health outcomes for patients. Nurses tend to provide more health advice and achieve higher levels of patient satisfaction compared with doctors. Further research is required to determine cost savings (Laurant, et al., 2005)

- “....the most recent Cochrane review indicates equivalent or superior outcomes for nurse consults in primary care.”

  Practice Nurse Cost Benefit Analysis Report: 2010
  Health Services Research Centre (HSRC) for MOH
What’s in it for the patient?

Provides a diagnosis
Maintain optimal asthma control (with minimum effective treatment)
Improved understanding and self-management
Less days off work, school etc.
Reduced flare ups leading to less GP or hospital visits
Increased activities
Improved quality of life

What’s in it for the GP Practice

Improved funding
Improved health and QOL
Improved job satisfaction of nurses
Less emergency visits and flare-ups
Recommendations to the Practice
Asthma Screening Questions

In the past 4 weeks:

• How often did your asthma prevent you getting as much done at work, school or home?

• How often have you had shortness of breath?

• How often did your asthma symptoms wake you up at night, or earlier than usual in the morning?

• How often have you used your reliever medication?

• How would you rate your asthma control?
54% of Patients in NZ remained Poorly Controlled in 2007*

$n = 160$

What’s the solution?
Peter, 26 years

- Symptom Scores – High
- Exacerbations - 10+
- Courses OCS – 10+
- Anxious
- Tearful

- Drugs included:
  - Serevent 3 p BD
  - Flixotide 250, 4 p BD
  - Ventolin 2 p BD (6-7p most days)
  - Atrovent 1 p BD
  - OCS for flare ups
Peter

- Symptom Scores – High
- Exacerbations - 10+
- Courses OCS – 10+
- Anxious
- Tearful

Drug included:-

Serevent 3 p bd
Flixotide 250, 4 p bd
Ventolin 2 p bd (6-7p most days)
Atrovent 1 p bd
OCS for flare ups

3m later....... 

Seretide 125, 2 p bd 
Symptom Scores – Zero 
No exacerbations 
No SABA use
GASP
Giving Asthma Support to Patients

The GASP Package
The GASP Package

• The web based GASP assessment with decision support Tool

• Education Programme for registered practice nurses:
  • 3-day asthma course
  • It’s academic, but very practical
  • It’s serious, but also a lot of fun!

• Resources:
  • Resources for a nurse-led clinic are provided
  • Understanding the GASP tool (user guide)

• Asthma assessments:
  • In the practice setting, accompanied/supported by the trainer
  • Objective tests
  • Asthma management following the NZ guidelines
  • Self management plans
Evaluation of Education Package

GASP nurses’ comments:

• The most amazing course!
• I wish I’d enrolled into this course 12 years ago
• So motivated it becomes infectious
• Brilliant course, so interactive, hands on
• Very passionate about empowering patients
• Starting GASP assessments and education will be great!
• Will recommend it to our GPS!
• Awesome course, excellent platform
GASP
Giving Asthma Support to Patients

The GASP Tool
The GASP Tool

- **Giving Asthma Support to Patients**

- One page web-based assessment tool with built-in Decision Support

- Adults and children

- Populates to and from the patients’ notes

- Assists in differential diagnosis (asthma/COPD)

- Based on current NZ Guidelines

- Personalised patient forms – (saves time)

- Audit-friendly
Background

• Studies have shown that computer-based technology can be used to successfully monitor and manage various diseases
  
  *(Respiratory Care• May 2004 Vol 49 No 5)*

• GASP is a unique tool that provides seamless care bridging the gap between patients, nurses and General Practitioners

• Under-treatment and management of asthma is a common problem in primary care: (50% of 720 patients undiagnosed /untreated: 76% undertreated)
  
  *Nolte H, Nepper-Christensen S, Backer V, 2006 Denmark*

• GASP’s key purpose is to optimise treatment for patients with asthma
Level of Asthma Symptom Control

In the past 4 weeks:
• Daytime symptoms more than twice a week
• Any night time waking due to asthma
• Reliever needed more than twice a week
• Any activity limitation due to asthma

Well Controlled: none of these
Partially controlled: 1-2 of these
Uncontrolled: 3-4 of these
Did you know?

If good Asthma Control is ≤ 2 doses (4 puffs) per week of a reliever or rescue inhaler

\[
\frac{4 \times 52}{200} = 1.04 \text{ inhalers}
\]

then patients requiring > 2 reliever inhaler devices per year may have partial or poor control!

GINA Guidelines – 2014
<table>
<thead>
<tr>
<th>Risk Factors for poor asthma control</th>
<th>Risk factors for fixed airflow limitation</th>
<th>Major independent risk factors for flare-ups</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uncontrolled or partly controlled</td>
<td>Comorbidities</td>
<td>Lack of ICS treatment</td>
</tr>
<tr>
<td></td>
<td>obesity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>rhinosinusitis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>confirmed food allergy</td>
<td></td>
</tr>
<tr>
<td>Excessive SABA use &gt;1 x 200-dose canister per month</td>
<td>Sputum or Blood eosinophilia</td>
<td>Exposure to tobacco smoke, noxious chemicals, occupational exposure</td>
</tr>
<tr>
<td>Inadequate ICS – not prescribed poor adherence inhaler technique</td>
<td>Pregnancy</td>
<td>Low initial FEV&lt;sub&gt;1&lt;/sub&gt; &lt;60% pred. Chronic mucus Hypersecretion</td>
</tr>
<tr>
<td>Low FEV&lt;sub&gt;1&lt;/sub&gt; especially &lt;60% pred.</td>
<td>Sputum or Blood eosinophilia</td>
<td></td>
</tr>
<tr>
<td>Psychological or socioeconomic problems</td>
<td>Risk factors for medication side–effects</td>
<td><a href="http://www.ginasthma.org">www.ginasthma.org</a> 2014</td>
</tr>
<tr>
<td>Exposures: smoking allergen exposure</td>
<td>Systemic: Frequent OCS or high dose ICS</td>
<td>Local: High dose or potent ICS Poor inhaler technique</td>
</tr>
</tbody>
</table>
Pop-up Prompts and Drop Down Boxes

GASP - Asthma Review

NHI No: JOSHUA

Age: 12 yrs Gender: Male Ethnicity: European

Base Measurements

Height: 150 cm
Weight: 59 kg
BMI: 17

Exacerbations (In the Last 12h)

- No. Hospital Admit
- No. Emergency Visit
- No. Oral Steroids
- Oral steroids in past 2 years

Symptom Score (In the Last 4h)

- Nocturnal awakening
- Daytime symptoms
- Activity Limitations

Medication

- Short Acting Bronchodilator
- Inhaled Corticosteroid/Combination

Technique/Adherence/Notes

- Inhaler Technique
- Medication Adherence
- Peak Flow Meter
- Action Plan

Peak Flow

- Predicted PEFR
- Highest Home PEFR
- Lowest Home PEFR
- Current PEFR
- PEFR Post bronchodilator

- % Variability
- % Predicted
- % Reversibility

Consent

Patient consents to share data

Accredited Asthma Provider

Claim Recall In

Decision Support

Triggers

- Emotions/Stress
- Animals
- Exercise
- Food/Drinks
- Cold/Flu
- Aspirin/NSAIDs
- Occupational

- Hormonal
- Cold Air
- Dust
- Mould/Damp

- Initiants

Click here for spirometry
Click here for other tests (FEV1, Eosinophil Count)

Trigger Advice
Diagnosis and Spirometry

GASP - Asthma Review

Base Measurements
- NHI No: JOSHUA
- Age: 12 yrs
- Gender: Male
- Ethnicity: European
- Height: 150 cm
- Weight: 59 kg
- BMI: 17

History
- FIM Asphyx
- GORD
- Hayfever
- Heartburn
- Mucus
- Psychological
- Smoking: No
- Flu Vac: No

Exacerbations (In the last 12h)
- No. Hospital Admit: Yes
- No. Emergency Visit: Yes
- No. Oral Steroids: Yes
- Oral steroids in past 2 yrs: Yes

Technique/Adherence/Notes
- Inhaler Technique: Yes
- Medication Adherence: Yes
- Peak Flow Meter: Yes
- Action Plan: Yes

Medications
- Short Acting Bronchodilator
- Usage: Yes
- Dose/puffs per day: 3
- Long Acting Bronchodilator
- Non-Steroidal Preventer

Triggers
- Emotional/Stress
- Animals
- Cold Air
- Dust
- Food/Drink
- Mold/Damp
- Irritants

Peak Flow
- Predicted PEF: 361
- Highest Home PEF
- Lowest Home PEF
- Current PEF
- PEF Post bronchodilator

Consent
- Patient consents: Yes to share data
- Accredited Asthma Provider: Yes
- Claim: Yes
- Recall In: Yes

Spirometry
- Predicted FEV1: 3.77
- Current FEV1: 3.65
- Predicted FVC: 4.65
- Current FVC: 4.52
- FEV1/FVC Ratio: 78%

Post Bronchodilator or Steroid Trial
- Post FEV1: 4.04
- FEV1 Improvement:
- Post FVC:
- FEV1/FVC Ratio:

Decision Support

Trigger Advice

Click here for other tools (PEF app, Eosinophil Count)
Spirometry Test Values and Reversibility Test Findings

Base Measurements
- Height: 150 cm
- Weight: 59 kg
- BMI: 17

Exacerbations (In the last 12m)
- No. Hospital Admit: ✔
- No. Emergency Visit: ✔
- No. Oral Steroids: ✔
- Oral steroids in past 2 years: ⊘

Medications
- Usage: 600/puffs per day

Asthma Decision Support
- Decision Support:

Findings
- Reversibility Suggests Asthma: Spirometry shows reversibility, improvement in FEV1 post bronchodilator/steroid > 12%/200ml, greater confidence if increase is > 15%/400ml

Peak Flow
- Predicted PEFR: 391
- Highest Home PEFR
- Lowest Home PEFR
- Current PEFR
- PEFR Post bronchodilator

Consent
- Patient consents to share data
- Accredited Asthma

Post Bronchodilator or Steroid Trial
- Post FEV1: 3.1
- % Predicted: 82
- % Improvement: 71
- % Predicted: 71
- FEV1/FVC Ratio: 84
- Predicted FEV1: 3.77
- Current FEV1: 2.8
- Predicted FVC: 4.65
- Current FVC: 3.21
- FEV1/FVC Ratio: 87

Trigger Advice
History and Triggers

Patient:

Trigger Advice

GENERAL GUIDELINES

- Carry your reliever
- Use preventer if prescribed
- Avoid trigger whenever possible
- Monitor peak flow and/or symptoms
- Have good baseline control of asthma

COLD AIR / TEMPERATURE

- Changes of temperature can affect people with asthma.
- Try to keep your home at an even temperature.
- It may help to use a thermostatically-controlled heater in the bedroom at night
to keep the temperature around 20 degrees C.
- Wearing a thin, warm scarf loosely around your lower face can help warm the air you breathe.
- If you know that certain weather affects your asthma you may need to increase your medicine during that time.

Colds and Flu

- The most common trigger
- Follow your Self Management Plan by increasing preventer and/or reliever at first sign of worsening asthma
- Dress for the weather - wear a hat
- Avoid contact with people with a cold
- Consider an Influenza (Flu) immunisation, before winter
Exacerbations, Adherence, Technique, Symptoms, Medications

GASP - Asthma Review

NHI No: JOSHUA

Base Measurements
- Height: 150 cm
- Weight: 20 kg
- BMI: 17

Age: 12 yrs Gender: Male Ethnicity: European

History
- Age of Dx: 2
- F/J Atopy: ✔
- GORD: 
- Hayfever: 
- Mucous: 
- Psoriasis: 
- Psychiatric: 
- Spirometry: 
- Smoking: No ✔
- Flu Vac: No ✔
- Cigs/day: 
- Pack Years: 

Exacerbations (In the last 12m)
- No. Hospital Admit: 0 ✔
- No. Emergency Visit: 0 ✔
- No. Oral Steroids: 1 ✔
- Oral steroids in past 2 years: ✔

Symptom Score (In the last 4w)
- Nocturnal awakening: 3 or more/week ✔
- Daytime symptoms: 3 or more/week ✔
- Activity Limitations: Yes ✔

Technique/Adherence/Notes
- Inhaler Technique: Correct ✔
- Medication Adherence: Non-Adherent ✔
- Peak Flow Meter: Yes ✔
- Action Plan: Updated today ✔

Medications
- Short Acting Bronchodilators
  - Ventolin, 100 mcg ✔
- Inhaled Corticosteroid/Combos
  - Fluticasone, 50 mcg ✔
- Long Acting Bronchodilators
  - Non-Steroidal Preventers

Consent
- Patient consents ✔ to share data
- Accredited Asthma: ✔ Provider
- Recall In: 1 Mth

Triggers
- Emotions/Stress: 
- Animals: 
- Exercise: 
- Food/Drinks: 
- Colds/Flu: ✔
- Aspirin/NSAIDs: 
- Occupational: 

Peak Flow
- Predicted FEFR: 361
- Highest Home FEFR: 
- Lowest Home FEFR: 
- Current FEFR: 340
- PEFR Post bronchodilator: 370

Spirometry
- Predicted FEV1: 3.77
- Current FEV1: 2.8
- Predicted FVC: 4.65
- Current FVC: 3.21
- FEV1/FVC Ratio: 87

Post Bronchodilator or Steroid Trial
- Post FEV1: 3.1
- FEV1 Improvement: 300 mls
- Post FVC: 3.3
- FEV1/FVC Ratio: 94

Decision Support
Asthma Action Plan

GASP - ASTHMA REVIEW

NHI No: JOSHUA
Age: 12 yrs Gender: Male Ethnicity: European

PATIENT -

Best Peak Flow: 340

High PEF Above 289

Asthma is well controlled when:
- No cough or wheeze.
- Play or behave same as other children.
- Reliever inhaler used less than 3 times per week.

What to Do:
- Preventer: puffs morning & night every day.
- Symptom Controller: puffs morning & night every day.
- Reliever: puffs as needed.
- Ventolin: for use as needed.

If reliever is used regularly more than 3 times per week see your doctor.
Always use a spacer.

Worse PEF Below 289

Asthma is getting worse when:
- Child is getting a cold.
- Occasional cough or wheeze at night.
- Cough or wheeze when child is excited or playing.
- Needing reliever inhaler to control asthma symptoms.

What to Do:
- Use your preventer / symptom controller every day.
- Take reliever inhaler.
- If child is not improving within 4 hours of taking reliever inhaler or symptoms worsen move to WORRIED zone.
- If no better after 2-3 days see your doctor.
- However, if not improving with one hour of taking reliever inhaler move to EMERGENCY zone.

Worried PEF Below 170

Asthma is worrying when child is working hard to breathe:
- Breathing is faster than usual.
- Skin is turning bluish (more noticeable in people of colour).
- Change in normal behaviour.
- Take 6 puffs of your emergency inhaler via a spacer and child to take 6 breaths after each puff.

Emergency: Dial 111 for ambulance when:
- Child has severe wheezing.
- Child is not breathing.
- Child is blue or pale.
- Parent or child is frightened.
- While waiting for ambulance:
  - Keep child calm and sitting upright.
  - Give 1 puff of emergency inhaler via a spacer. Child to take 6 breaths after each puff, repeat 6 times.
  - Repeat every 5 minutes, until ambulance arrives.

ENTRY

56. Lung A3 (l) 74% Predicted
69. % Predicted

Post FEV1: 3.1 82% Predicted
Post FVC: 3.3 71% Predicted
FeV1/FVC Ratio: 94

MEDICATIONS

Symptom Score (in the last 4wks)
- Nocturnal awakening: 3 or more/week
- Daytime symptoms: 3 or more/week
- Activity limitations: Yes

Inhaled Corticosteroid/Combination
Ventolin, 100 mcg
Fluticasone, 50 mcg
Long Acting Bronchodilator
Non-Steroidal Preventer

Consent

Patient consents to share data
Accredited Asthma Provider
Claim
Recall
Post Bronchodilator or Steroid Trial
Post FEV1: 3.1 82% Predicted
Post FVC: 3.3 71% Predicted
FEV1/FVC Ratio: 94

20/02/2015 GP Signature: __________________________
Decision Support - Advice

**ADVICE**

- Ensure patient has sufficient medication supply.
- Educate patient on adherence to treatment regime and understanding of self-management plan before initiating a new drug therapy (BTS/SIGN 2014).
- **Combination inhalers** are recommended to guarantee that the LABA is not taken without an ICS and to improve inhaler adherence (BTS/SIGN 2014 6.3.4). Special authority applies for Symbicort.
- Any **exacerbation** should prompt review of maintenance treatment to ensure that it is adequate.
- For most patients, exercise-induced asthma is an expression of poorly controlled asthma and regular treatment including inhaled steroids should be reviewed (BTS/SIGN 2014 6.7.2).
- Good asthma control is associated with little or no need for a SABA (BTS/SIGN 2014 6.1.1).
- Consider adding **Long-Acting B2 Agonists**. The first choice as add-on therapy to inhaled steroids in adults and children (5+ years) is an inhaled long-acting B2 agonist, which should be considered before going above a dose of 400 μg BDP or equivalent/day in children and in adults taking ICS doses of 200-800 μg BDP or equivalent/day (BTS/SIGN 2014 3.3.2).
  - Use a fixed dose regimen, suitable for long-term regular twice daily treatment.
  - LABA should always be considered if doses of ICS greater than 800 μg/day (or equivalent) are required.
- Many patients will benefit more from add-on therapy than from increasing ICS above doses as low as 200 μg BDP equivalent/day (BTS/SIGN 2014 6.3.1).
- Consider **titrating inhaled corticosteroids** up to 500 μg/day Fluticasone/Flovent, up to 400 μg/day Budesonide/Primatene, up to 800 μg/day Budesonide/Inhale or Beclometasone/Aerosol for adults.
- In children 5-12 yrs, pMDI + spacer is as effective as any DPI (BTS/SIGN 2014 7.2.2).
- **Atopy** - Atopic dermatitis and atopic rhinitis are amongst the factors most strongly associated with asthma persisting into the teenage years (BTS/SIGN 2014 10.4.1).
- Influenza vaccine is recommended to be given annually.

**RESEARCH**

- A pMDI + spacer is at least as good as a nebulizer at treating mild and moderate asthma attacks in children and adults (BTS/SIGN 2014 7.2.1).
## Measurable Clinical Outcomes

### Aim

Effectiveness of the GASP tool to map out the care of patients with asthma

*Journal of Primary Health Care - 2014*

*F. Ram & W. McNaughton*
GASP Audit (NIWI, 2011)

Measurable Clinical Outcomes

Methodology

Study design: Cohort study (observational)

761 patients aged 5-64 yrs
Completed GASP assessments between Nov 2008–April 2011 (2.6 yrs)

All GASP assessments conducted by accredited GASP Nurses
Comparisons were made between first and last GASP assessment
Mean time between first and last assessments was 260 days

(Journal of Primary Health Care - 2014)
F. Ram & W. McNaughton
## GASP Audit - outcome 2011 *(NIWI, 2011)*

Audit 2.6 years

<table>
<thead>
<tr>
<th>Event</th>
<th>Reduced %</th>
<th>95% CI</th>
<th>NNT</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exacerbations</td>
<td>35%</td>
<td>(0.65; 0.56 to 0.76)</td>
<td>7</td>
</tr>
<tr>
<td>Hospital admissions</td>
<td>33%</td>
<td>(0.67; 0.44 to 1.00)</td>
<td>50</td>
</tr>
<tr>
<td>ED Presentations</td>
<td>37%</td>
<td>(0.63; 0.51 to 0.78)</td>
<td>10</td>
</tr>
<tr>
<td>Course oral corticosteroids</td>
<td>34%</td>
<td>(0.66; 0.56 to 0.78)</td>
<td>9</td>
</tr>
<tr>
<td>Use of SABA - Never</td>
<td>Increased by 73%</td>
<td>1.73; 1.49 to 2.01</td>
<td>6</td>
</tr>
<tr>
<td>&quot; Every day</td>
<td>52%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&quot; &gt;2 puffs /week</td>
<td>47%</td>
<td>(0.53; 0.43 to 0.69)</td>
<td>11</td>
</tr>
</tbody>
</table>

*(Journal of Primary Health Care - 2014)*

F. Ram & W. McNaughton
**Asthma Exacerbations**
- Reduced of 35% (95%CI: 24 to 44)

*Journal of Primary Health Care – 2014
F. Ram & W. McNaughton*

<table>
<thead>
<tr>
<th>Sub-category</th>
<th>After GASP n/N</th>
<th>Before GASP n/N</th>
<th>RR 95% CI</th>
<th>RR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>15/61</td>
<td>27/61</td>
<td></td>
<td>0.56 [0.33, 0.94]</td>
</tr>
<tr>
<td>European</td>
<td>157/638</td>
<td>242/631</td>
<td></td>
<td>0.64 [0.54, 0.76]</td>
</tr>
<tr>
<td>Maori</td>
<td>15/44</td>
<td>17/43</td>
<td></td>
<td>0.86 [0.50, 1.50]</td>
</tr>
<tr>
<td>Pacific Island</td>
<td>6/18</td>
<td>7/18</td>
<td></td>
<td>0.86 [0.36, 2.05]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>761</td>
<td>753</td>
<td></td>
<td>0.65 [0.56, 0.76]</td>
</tr>
<tr>
<td>Total events: 193 (After GASP), 293 (Before GASP)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test for overall effect: Z = 5.55 (P < 0.00001)

UC = usual care and no GASP assessments
CI = confidence Interval
Hospital Admissions - Reduced by 33% (95%CI: 0 to 56)

Journal of Primary Health Care – 2014
F. Ram & W. McNaughton

<table>
<thead>
<tr>
<th>Sub-category</th>
<th>After GASP</th>
<th>Before GASP</th>
<th>RR</th>
<th>RR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n/N</td>
<td>n/N</td>
<td>95% CI</td>
<td></td>
</tr>
<tr>
<td>Asian</td>
<td>3/61</td>
<td>3/61</td>
<td>1.00</td>
<td>[0.21, 4.76]</td>
</tr>
<tr>
<td>European</td>
<td>30/638</td>
<td>43/631</td>
<td>0.69</td>
<td>[0.44, 1.09]</td>
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<tr>
<td>Maori</td>
<td>3/44</td>
<td>6/43</td>
<td>0.49</td>
<td>[0.13, 1.83]</td>
</tr>
<tr>
<td>Pacific Island</td>
<td>1/18</td>
<td>3/18</td>
<td>0.33</td>
<td>[0.04, 2.91]</td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>761</td>
<td>753</td>
<td>0.67</td>
<td>[0.44, 1.00]</td>
</tr>
</tbody>
</table>

Total events: 37 (After GASP), 55 (Before GASP)

Test for overall effect: Z = 1.98 (P = 0.05)

UC = usual care and no GASP assessments
CI = confidence Interval
ED Presentations
- Reduced by 37% (95%CI: 23 to 49)

*Journal of Primary Health Care – 2014*
F. Ram & W. McNaughton

<table>
<thead>
<tr>
<th>Sub-category</th>
<th>After GASP n/N</th>
<th>Before GASP n/N</th>
<th>RR 95% CI</th>
<th>RR 95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asian</td>
<td>11/61</td>
<td>17/61</td>
<td>0.65 [0.33, 1.26]</td>
<td>0.63 [0.51, 0.77]</td>
</tr>
<tr>
<td>European</td>
<td>103/638</td>
<td>159/631</td>
<td>0.64 [0.51, 0.80]</td>
<td></td>
</tr>
<tr>
<td>Maori</td>
<td>6/44</td>
<td>15/43</td>
<td>0.39 [0.17, 0.91]</td>
<td></td>
</tr>
<tr>
<td>Pacific Island</td>
<td>4/18</td>
<td>5/18</td>
<td>0.80 [0.26, 2.50]</td>
<td></td>
</tr>
<tr>
<td>Total (95% CI)</td>
<td>761</td>
<td>753</td>
<td></td>
<td>0.63 [0.51, 0.77]</td>
</tr>
<tr>
<td>Total events:</td>
<td>124 (After GASP), 196 (Before GASP)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Test for overall effect: Z = 4.56 (P < 0.00001)

UC = usual care and no GASP assessments
CI = confidence Interval
Evidence from this study suggests that the GASP tool offers significant health benefits to patients with asthma.

Findings from this study strongly support the use of the GASP tool in primary care.

These promising findings warrants a randomised controlled trial in the primary care setting to further confirm the effectiveness of the GASP tool.

(Journal of Primary Health Care - 2014)
F. Ram & W. McNaughton
He Tapu Te Hā: Space to Breathe Trial
Evaluation
Parent’s comments after completing the ‘Space to Breathe’ study:

‘I feel this information should be shared with others and I wondered why my doctor hadn’t already told me’ - Emma

‘Words cannot express the relief of worry and anxiety that this programme has brought to this family – Thank you’ – Adam

‘I’ve learnt how to control all 4 of my kids’ asthma, as opposed to waiting until it’s very bad and taking them to hospital ... I haven’t even needed to take them to the doctor’s’ - Maria Anne
Evaluation continued ....

‘This study has changed my daughter’s life for the better’ – Mark

‘Thank you so very much. From a mother who felt like she wasn’t finding answers and pulling her hair out at night, my child is sleeping 100% better’ – Jo

‘It has made a huge difference to his (and our) quality of life’
- Natasha
GASP
Giving Asthma Support to Patients

GASP and Me
The GASP TOOL has...

- Enhanced my knowledge
- Given me confidence
- Efficiency
- Legitimacy with patient
- Support of doctors
- Effective nurse-led clinic
- Income
Together we can change the future of asthma care in New Zealand.
References

- Authoritative information and statistics, to promote better health and wellbeing (AIHW)
- Global Initiative for Asthma, 2014. [www.ginasthma.org](http://www.ginasthma.org)
THANK YOU.
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GASP
Giving Asthma Support to Patients