



2009
NSW
HEALTH
EXPO

Improving Asthma Care for Children: The eAAP

Improving primary health and care in the
community

Prepared by Dr Fenton O'Leary

The Children's Hospital at Westmead

Acknowledgements

- Tracey Marshall, Asthma Education Service. CHW
- Prof Peter Van Asperen, Dept. Respiratory Medicine. CHW
- Margaret Allen, Clinical Applications Support Unit. CHW
- Adam Bennett, Clinical Applications Support Unit. CHW
- Gill Taylor, Clinical Applications Support Unit. CHW
- Sasanka Dissanayake, ED Registrar. CHW



Aim

- To increase the documented provision of asthma action plans to children discharged from the Emergency Department
- To design and implement an electronic asthma action plan
 - Easy to use
 - Automatically insert into the medical record
 - Useful outside CHW



Nature of the problem

The provision of an AAP to parents of children with asthma can help to reduce their rate of hospital admissions, emergency presentations, absences from school and use of reliever medication (National Asthma Council Australia 2006).

The provision of an AAP in conjunction with asthma education in children admitted for asthma (compared to standard discharge care) resulted in a 28% reduction in readmission rate, 31% reduction in ED visits and a 53% reduction in GP visits in the six months after discharge. (Wesseldine et al 1999).



Extent of the problem

At CHW, AAPs printed off the intranet.

The plan then needed to be completed by the medical officer and given to the parents.

In order for a copy to be entered into the eMR, the medical officer had to photocopy the completed plan prior to giving it to the parents.

Evidence suggested that busy doctors, particularly in the Emergency Department, were not providing patients with AAPs on discharge and when they did provide them they were not photocopying them for the medical record.



Extent of the problem

A review of the Powerchart eMR showed only 232 AAPs recorded from April 2007-April 2008.

A review of 850 patients presenting to ED with asthma from April – October 2007 showed only 2% had an AAP recorded in the eMR on discharge home from the ED.



Strategic importance

The provision of the Asthma Action Plan to parents will ‘improve primary health and care in the community’, as well as ‘promote health’ and ‘create better patient journeys’ by:

Reducing avoidable hospital admissions.

Enhancing the doctor–patient/parent relationship as parents will realise their child is receiving holistic care not just for their admission but also for on going care.

Maximising the child’s asthma care and ensuring their family are aware of what to do during an exacerbation.

Enhancing communication with the family’s General Practitioner.

Enhancing the continuing hospital care as the AAP will be recorded clearly in the eMR, and therefore available to current and future clinicians to review and update.



Planning & implementing solutions

A multidisciplinary team comprising representatives from ED, Respiratory Medicine, Asthma Education Service and the Clinical Applications Support Unit (CASU) was established. The team decided on the following actions after further discussions with key stakeholders.

Design and implement an electronic AAP (eAAP) that would be completed in Powerchart and automatically become part of the eMR. A business case was prepared for and supported by CASU.

Trial this eAAP in the ED.

Design and implement a training package for the eAAP that would also increase general awareness of the need for an AAP. Revision of CHW AAP practice guidelines.

Evaluate the implementation by reviewing the Powerchart eMR, ED Health E-Care and by surveying staff, comparing outcomes to previous years or results where available.



Planning & implementing solutions

The eAAP was developed as a Powerform in Powerchart using a drop down box and click format. Choices in the boxes were agreed by the team to encompass all possible realistic clinical combinations.

Time was taken to ensure that when the Powerform was printed it looked like a conventional AAP.

A training package was designed using practise patients in Powerchart to demonstrate how to use the eAAP and to reinforce the need for an AAP for patients discharged with asthma.

A poster was designed to be used in the clinical areas (ED, wards and outpatients).



Planning & implementing solutions

Asthma Action Plan - TRAIN, Train

*Performed on: 19/10/2009 0939

Asthma Action Plan

Asthma Action Plan for Children and Young People

Last reviewed: June 2009

For general guidelines on completing this form, right click in the box next to the "?" and select reference text

PLEASE NOTE: PRINTING THIS PLAN: To print this form in the correct format, once the form has been closed select Reports then the form to be printed. This is the ONLY format to be given to patients.

WHEN WELL

| Preventer (if prescribed) | Asthma Preventer | Asthma Puffs Preventer | Asthma dose frequency | Asthma Method of Delivery |
|---------------------------|---------------------------------------|------------------------|-----------------------|---------------------------|
| | Flixotide (fluticasone 50 mcg) puffer | 2 puffs | 2 | <Alpha> |
| | <Alpha> | <Alpha> | <Alpha> | <Alpha> |
| | <Alpha> | | | |

Reliever

10 minutes before exercise take

WHEN NOT WELL

When not well use

Preventer when not well

| Asthma Preventer | Asthma Puffs Preventer | Asthma dose frequency | Asthma Method of Delivery |
|------------------|------------------------|-----------------------|---------------------------|
| <Alpha> | | | |
| <Alpha> | | | |
| <Alpha> | | | |

Extra steps to take

Emergency Reliever

Emergency Medication

Comment

Result Details

Asthma Method of Delivery

Spacer and puffer

Puffer

Nebuliser

Turbuhaler

Accuhaler

Autohaler

Comment

OK Cancel

3 to 4 hours

with daily

Adapted from the National Asthma Council Asthma Action Plan for Young People 2006



Planning & implementing solutions

Asthma Action Plan - TRAIN, Train

*Performed on: 19/10/2009 0939

Asthma Action P

Asthma Action Plan for Children and Young People

Last reviewed: June 2009

For general guidelines on completing this form, right click in the box next to the "?" and select reference text ?

PLEASE NOTE: PRINTING THIS PLAN: To print this form in the correct format, once the form has been closed select Reports then the form to be printed. This is the ONLY format to be given to patients.

WHEN WELL

Preventer (if prescribed)

| Asthma Preventer | Asthma Puffs Preventer | Asthma dose frequency | Asthma Method of Delivery |
|---------------------------------------|------------------------|-----------------------|---------------------------|
| Flixotide (fluticasone 50 mcg) puffer | 2 puffs | 2 | Spacer and puffer |
| <Alpha> | <Alpha> | <Alpha> | <Alpha> |
| <Alpha> | <Alpha> | <Alpha> | <Alpha> |

Reliever Ventolin (salbutamol 100mcg) puffer Use 2 - 4 puffs as needed

10 minutes before exercise take Use

WHEN NOT WELL

When not well use Ventolin (salbutamol 100mcg) puffer Use 2 - 4 puffs times per day 3 - 4

Preventer when not well

| Asthma Preventer (WNW) | Asthma puffs preventer (WNW) | Asthma dose frequency preventer | Asthma Method of Delivery (WNW) |
|---------------------------------------|------------------------------|---------------------------------|---------------------------------|
| Flixotide (fluticasone 50 mcg) puffer | 2 puffs | 2 | Spacer and puffer |
| <Alpha> | <Alpha> | <Alpha> | <Alpha> |
| <Alpha> | <Alpha> | <Alpha> | <Alpha> |

Extra steps to take

Emergency Reliever Ventolin (salbutamol 100mcg) puffer Reliever strength 6 puffs every 3 to 4 hours

Emergency Medication Prednisolone Strength 15 mg = 3 ml by mouth daily

Comment

Adapted from the National Asthma Council Asthma Action Plan for Young People 2006



Planning & implementing solutions

TRAIN, Train - 1015168 Opened by O'Leary, Fenton

Task Edit View Patient Chart Links Time Scale Options Help

Patient List Cosign Scheduling CHW e-Learning/Snippets CHW Laboratory Collection Manual CHW Policies and Procedures

Tear Off Attach Change Suspend Charges Charge Entry Exit AdHoc PM Conversation Explorer Menu

TRAIN, Train x

← List → Recent MRN

TRAIN, Train Age:2 years MRN:1015168 Location:Short Stay Ward
 DOB:1/01/2007 Adm:19/10/2009 9:11 AM Dis:<No - ...
 Gender:Male

Allergies

Menu Results Print 0 minutes ago

All Results Laboratory Medical Imaging Imaged Documents Documents (last 3 years) Results List View

Flowsheet: All Results Flowsheet Level: ALLRESLTSECT Table Gr

Last 100 Results

| Results | 19/10/2009 9:39 AM | 24/08/2009 12:20 PM | 20/07/2009 12:05 PM | 15/06/2009 12:22 PM | 28/11/2008 |
|-------------------------------|-----------------------|------------------------|------------------------|------------------------|------------|
| Asthma Service | | | | | |
| Asthma Action Plan | Asthma Action ... | | | | |
| ED Documents | | | | | |
| Emergency Dept Summary | | ED Summary | ED Summary | ED Summary | ED S |

Navigator

- Asthma Service
- ED Documents



Planning & implementing solutions

| | |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------|
| AMO: McCaskill, Mary WARD: Short Stay Ward Date of Admission: 19-OCT-2009 09:11 | MRN: 1015168 NAME: TRAIN, Train DOB: 01-JAN-2007 SEX: M |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------|

ASTHMA ACTION PLAN FOR CHILDREN AND YOUNG PEOPLE

WHEN WELL

Preventer (if prescribed)

| | | |
|---------------------------------------|-----------------------|----------------|
| Flixotide (fluticasone 50 mcg) puffer | Use 2 puffs | times a day: 2 |
| | Via Spacer and puffer | |

Reliever

| | | |
|-------------------------------------|-----------------|-----------|
| Ventolin (salbutamol 100mcg) puffer | Use 2 - 4 puffs | as needed |
|-------------------------------------|-----------------|-----------|

Take only when necessary for relief of wheeze or cough

| | | |
|-----------------|----------|-------------------------|
| Before exercise | Use **** | 10 mins before exercise |
|-----------------|----------|-------------------------|

WHEN NOT WELL

At first sign of a cold or a significant increase in wheeze or cough, take:

Reliever:

| | | |
|-------------------------------------|-----------------|--------------------|
| Ventolin (salbutamol 100mcg) puffer | Use 2 - 4 puffs | times a day: 3 - 4 |
|-------------------------------------|-----------------|--------------------|

Preventer:

| | | |
|---------------------------------------|-----------------------|----------------|
| Flixotide (fluticasone 50 mcg) puffer | Use 2 puffs | times a day: 2 |
| | Via Spacer and puffer | |

When your symptoms get better, return to the doses you take when well.

IF SYMPTOMS GET WORSE, THIS IS AN ACUTE ATTACK

Extra steps to take

| | | |
|---------------------------------------------------------|-----------------------|-------------------|
| Emergency Reliever: Ventolin (salbutamol 100mcg) puffer | 6 puffs | every 3 - 4 hours |
| Emergency Medication: Prednisolone | Strength 15 mg = 3 ml | by mouth daily |

Comment:

If your child is requiring Reliever Medication every 3 hours take your child to nearest Local Doctor or nearest Emergency Department

When your symptoms get better, gradually return to the doses you take when well.

Doctor's Name and Signature: _____ Ambulance: 000

Adapted from the National Asthma Council Asthma Action Plan for Young People 2006 for
The Children's Hospital at Westmead

THE CHILDREN'S HOSPITAL AT WESTMEAD

ASTHMA ACTION PLAN FOR CHILDREN AND YOUNG PEOPLE

M7C

0007

| | |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------|
| AMO: McCaskill, Mary WARD: Short Stay Ward Date of Admission: 19-OCT-2009 09:11 | MRN: 1015168 NAME: TRAIN, Train DOB: 01-JAN-2007 SEX: M |
|---------------------------------------------------------------------------------------|---------------------------------------------------------------|

ASTHMA ACTION PLAN FOR CHILDREN AND YOUNG PEOPLE

WHEN WELL

Your child will

- Be free of regular night time wheeze or cough or shortness of breath or chest tightness
- Have no regular wheeze or cough or shortness of breath or chest tightness on waking, the during the day or night
- Be able to take part in normal physical activity without getting asthma symptoms
- Need reliever medication less than 3 times a week (expect reliever medication is used before exercise as a part of asthma management)

WHEN NOT WELL

Your child will experience

- Increasing night time wheeze or cough or shortness of breath or chest tightness
- Symptoms regularly in the morning when you wake up
- A need for extra doses of reliever medication
- Asthma symptoms which interfere with exercise or everyday activity

IF SYMPTOMS GET WORSE, THIS IS AN ACUTE ATTACK

Your child will experience

- One or more of the following: wheeze, cough, chest tightness or shortness of breath
- Need to use reliever medication at least once every 3 hours or more often

DANGER SIGNS

- Beware that the symptoms of acute asthma attack can get worse very quickly
- Wheeze, cough, chest tightness or shortness of breath continue after using reliever medication or return within minutes of taking reliever medication
- Severe shortness of breath, inability to speak comfortably, blueness of lips

IMMEDIATE ACTION IS NEEDED CALL AN AMBULANCE

Take this Asthma Action Plan with you when you visit your Doctor or Health Professional

Adapted from the National Asthma Council Asthma Action Plan for Young People 2006 for
The Children's Hospital at Westmead

THE CHILDREN'S HOSPITAL AT WESTMEAD

ASTHMA ACTION PLAN FOR CHILDREN AND YOUNG PEOPLE

M7C

0007

NEW IN POWERCHART - ASTHMA ACTION and REDUCING MEDICATION PLANS

Planning & implementing solutions

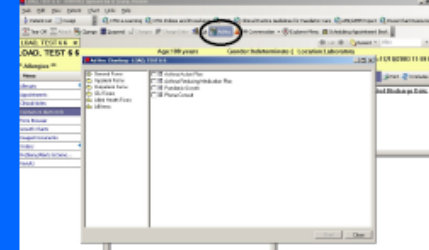
Asthma action and Reducing Medication plans are now available through Powerchart.

Children do better if they have an action plan at home for parents to follow when they are well, when not well and during an acute attack.

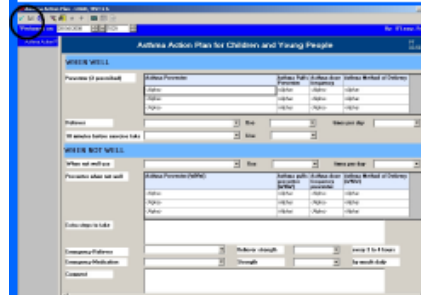
All children discharged on a reducing dose of salbutamol should have a reducing medication plan completed

All children with known asthma should also have an Asthma Action Plan completed

Step 1 – Open patient, select 'ad hoc charting' and choose which plans to complete

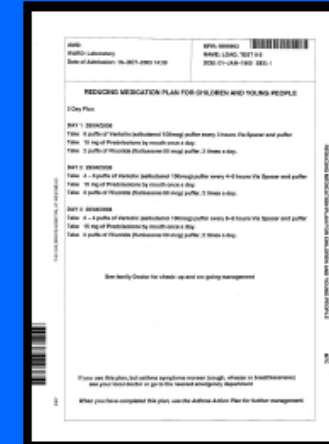
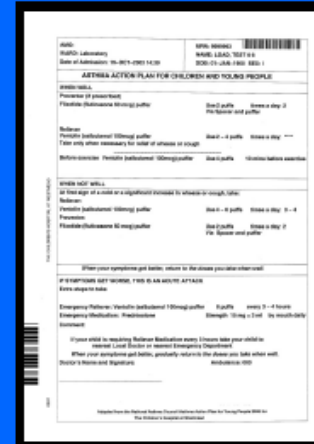
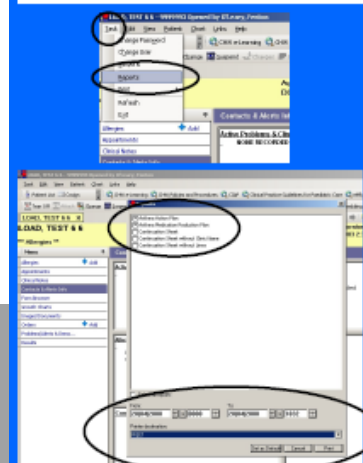


Step 2 – Complete the form(s) by clicking the drop down boxes. Leave blank anything you don't wish to include. When complete save the form by clicking to 'tick' and entering your password



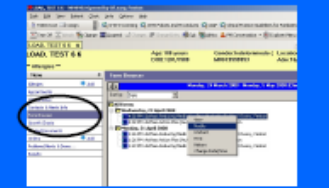
Step 3 – Print the form(s) by:

- Select 'Task' then 'Reports'
- Select form(s) to be printed
- Ensure correct printer is displayed RQE 1 for Cubes and RQE2 for Obs



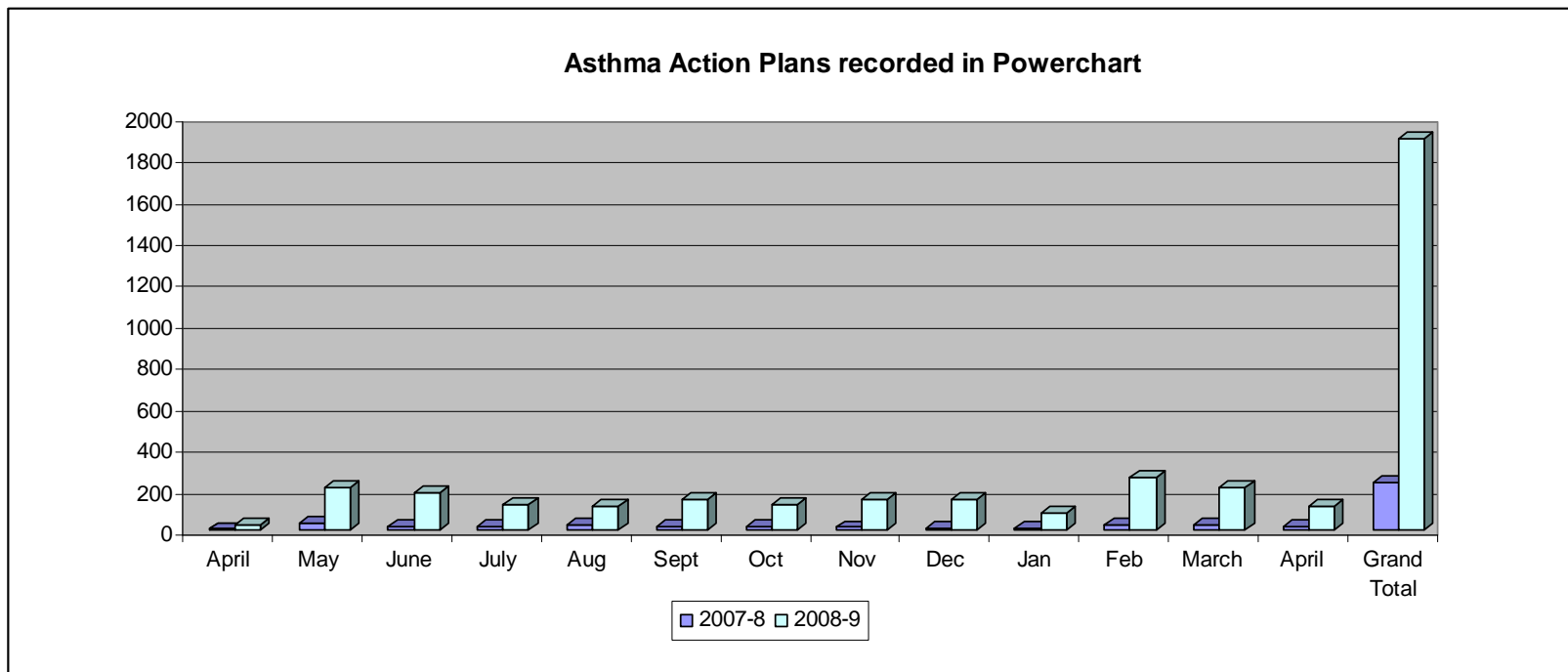
If you need to change the form once it is signed you can modify it.

- Go to 'Form Browser'
- Select document with 'right click'
- 'Modify'



Outcomes & evaluation

The number of AAPs recorded in Powerchart increased by 816%, from 232 in 2007-8 to 1895 in 2008-9



Outcomes & evaluation

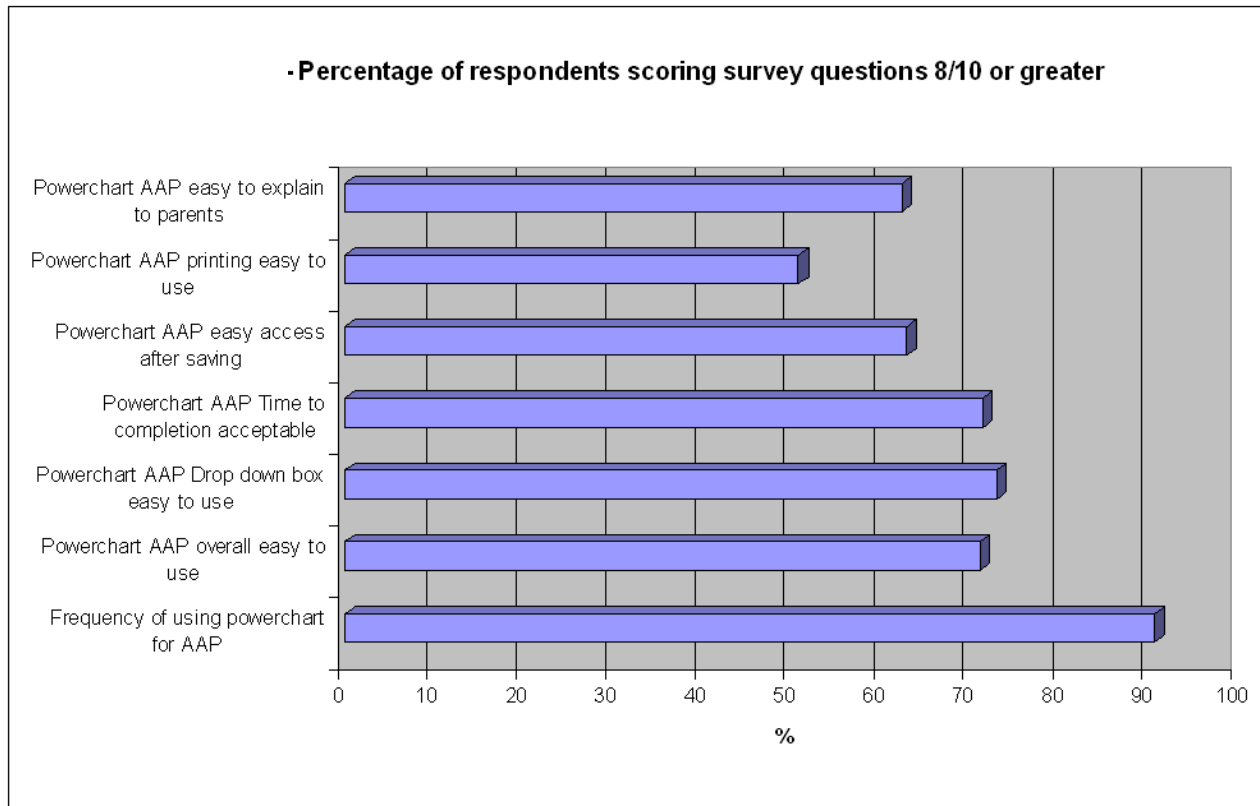
Health E-Care records were reviewed before (30/4/2007-21/10/2007) and after (21/4/2008-19/10/2008) the introduction of the eAAP. All patients with a discharge diagnosis of asthma were reviewed. 850 patients in the first and 873 in the second six months were included in the study.

The number of AAPs recorded in Powerchart increased significantly from 2% to 73% ($p < 0.001$). The number of AAPs either recorded in the eMR or mentioned in the eMR as being pre-existing or being given (ie patients discharged from ED with an AAP) increased from 20% to 79% ($p < 0.001$).



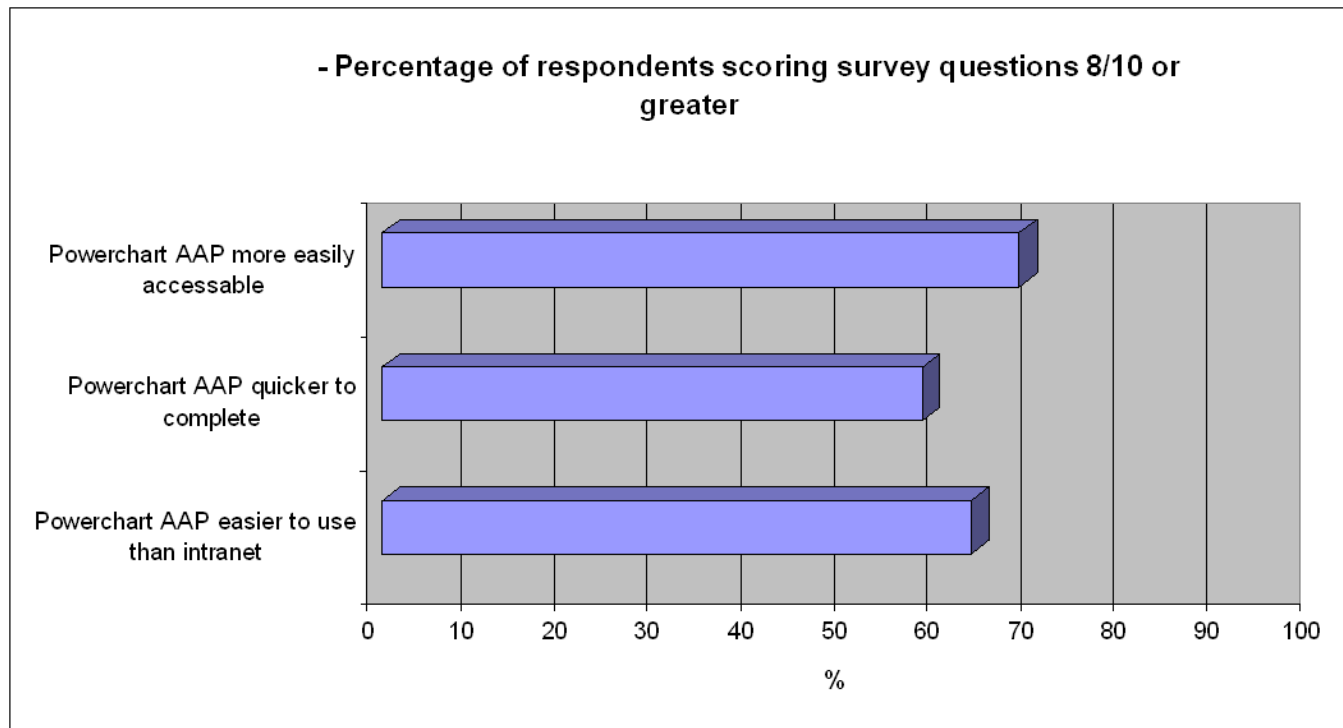
Outcomes & evaluation

A convenience sample of 64 ED, General Medicine and Respiratory doctors completed the feedback survey.



Outcomes & evaluation

Respondents were also asked to rate the eAAP against the old intranet version, the majority rating it superior.



Sustaining change

The use of the eAAP in the ED is now standard of care and this is also being adopted hospital wide as more staff become familiar with its usefulness. All patients who are discharged from ED should already have an AAP or will receive an eAAP before they leave.

All medical staff have specific eAAP training at ED orientation, and senior staff encourage juniors to complete the eAAPs whilst caring for patients.

The use of the eAAP will continue to be evaluated by reports from CASU and informal feedback from users.



Lessons learned

Multidisciplinary team, including IT

Take time to design the Powerform

Need enthusiastic implementation team



Future scope

The current eAAP can be used in any institution that currently uses Powerchart, and CASU are able to make this available to any hospital or Area Health Service that requests it.

The eAAP also includes an educational tool as part of the Powerform so that staff receive instruction on what to include as they fill in the form.

The team is also working together to improve the eAAP after analysing feedback. This will include the addition of the doctor's name printed on the eAAP, placement of a print icon on Powerchart to enable easier printing and the potential for double sided printing of the eAAP.



For further information please contact:

Dr Fenton O'Leary – fentono@chw.edu.au

Tracey Marshall – traceym2@chw.edu.au

