

# 6

# Orientation session and learning sessions

## 6.1 Introduction

Chronic Care Collaborative team members attended a series of meetings organized by the Clinical Excellence Commission. The first of these, the orientation session, was held in early February 2004. Over 100 team members from participating facilities in urban and rural NSW travelled to Sydney where they attended workshops. The orientation session provided team members with general information and instruction in collaborative methodology. Participants also had the opportunity for networking.

The orientation session was followed by four learning sessions spaced fairly evenly throughout the Collaborative (1 April, 3 June, 5 August and 4 November). These also were held in Sydney and were attended by key members of all teams in the Collaborative. These extended the work undertaken at the orientation session and included team presentations on their own progress with discussion of problems and alternatives. The learning sessions supplemented other sources of information and training in collaborative methodology provided by the Clinical Excellence Commission including the Collaborative 'listserv'. This is an e-mail based communication tool which teams used to share information. In addition there was teleconferencing and site visits by the Clinical Excellence Commission and NSW Department of Health staff and team mentors.

At the orientation session, and also at each of the learning sessions, the Clinical Excellence Commission used ad hoc questionnaires to obtain feedback from attendees. These were completed both at the start and at the end of each session. The questionnaires were not consistent in content or format. Their purpose was to provide feedback on the session and to aid planning of future sessions and not to provide a final evaluation of the Collaborative. Nonetheless, they did appear to have potential for aiding the final evaluation, and the evaluators were asked to inspect the data from the questionnaires and to analyse and report as appropriate. Presented here are selected results from the orientation session and learning sessions. Further results can be seen in Appendix 6.

## 6.2 Methods

### 6.2.1 Data

At the conclusion of the Collaborative the completed questionnaire forms from the orientation session and the four learning sessions were forwarded by the Clinical Excellence Commission to the evaluators for analysis. They were checked and entered into computer files at the Centre for Health Services Research at Westmead. Separate analysis was undertaken for the orientation session and for the first learning session because of changes in the questions asked. The second and third learning sessions used the same questionnaire at the start of each session. The second, third and fourth learning sessions used the same questionnaire at the end of the session.

The available data were:

- Questionnaire used at start of the orientation session and an identical questionnaire used at the end of that session
- Questionnaire used at the start of learning session 1, and a second, different questionnaire used at the end of that session
- Questionnaire used at the start of learning sessions 2 and 3
- Questionnaire used at the end of learning sessions 2, 3 and 4.

Although mostly these questionnaires will have been completed by the same individuals (key team members travelling to Sydney for the meetings) individual responses cannot be linked across sessions, or even at the level of 'before and after' for the same session. This is because they were anonymous. Information was available on the number of people registered to attend each session, but not on how many actually did attend. The registered numbers were:

- orientation session - 196 participants
- learning session 1 - 195 participants
- learning session 2 - 194 participants
- learning session 3 - 185 participants
- learning session 4 - 186 participants

## Orientation session and learning sessions

Some of those registered to attend may not have been team members.

SPSS (version 12.0.1) 35 was used to compute the tables included in this report. Statistical significance was assessed using chi-square tests on counts. This test assumes independence of the measures compared, which clearly was not the case at least to some extent. Thus results of the tests should be viewed with caution.

Some items in the questionnaires given at the end of the learning sessions requested feedback of participant opinions on the value of selected components of the day's presentations and work. Results for these questions are presented in Appendix 6.

### 6.3 Results

#### 6.3.1 Orientation session

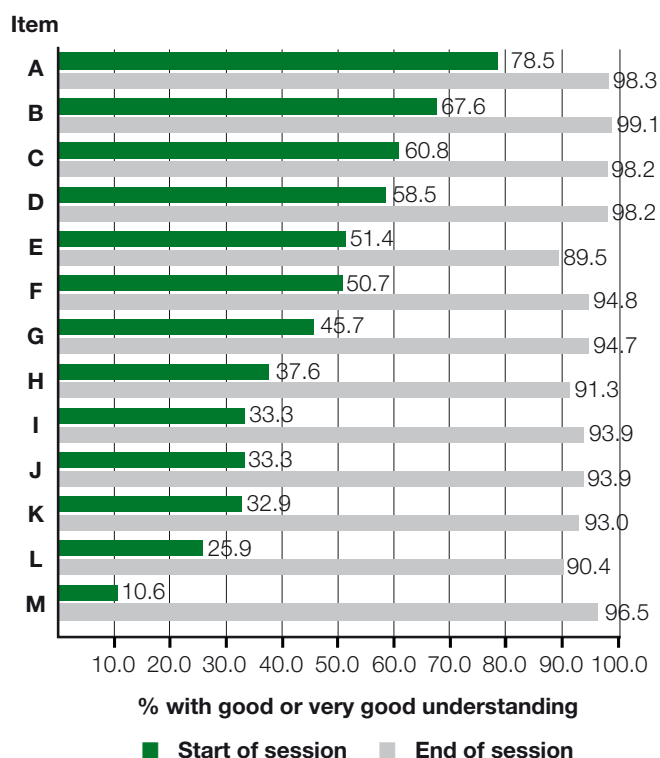
In all 144 questionnaires were completed at the start, and 115 at the end of the orientation session. This gave a response rate of 74 per cent and 59 per cent as 196

individuals were registered to attend. For some of the items grouped response categories have been used. For example the two categories 'good' and 'very good' have been grouped into a single category 'good or very good'.

The results for the questionnaires completed by team members at the start and at the end of the orientation session can be seen in Figure 6.1. Here it can be seen that for every item the percentage of team members answering favourably had increased when tested at the end of the session. For every item this increase was statistically significant at  $P < 0.01$  except for Item A which was significant at  $P < 0.03$ .

Team members attending the orientation session were not asked to comment on the effectiveness of the session itself. However, the difference between the start and end of session questions with improvements of up to 85 per cent on the level of understanding suggests that the session was highly effective. At all subsequent sessions attendees were asked about the usefulness of the session.

**Figure 6.1 Percentage of team members having good or very good understanding of orientation session items at the start and end of the session**



#### KEY

##### How would you rate your understanding of:

- A Aims of Chronic Care Collaborative
- B Why tapping the patient experience is important in the Collaborative
- C How the Collaborative fits with the Clinical Service Framework
- D Collaborative team make up to optimise results
- E Your role within your Collaborative team
- F Why process mapping is important in the Collaborative
- G Collaborative methodology
- H Who should attend a process mapping workshop
- I What is expected of your team within the Collaborative
- J The nature of support to be provided by the Collaborative management team and planning group
- K Project management and support for Collaborative
- L Measurement requirements
- M The tasks that need to be completed by your team prior to learning session 1

### 6.3.2 Learning session 1

A total of 96 questionnaires (49 per cent of those registered to attend) were completed at the start of learning session 1 and 117 questionnaires (60 per cent of those registered to attend) were completed at the end of learning session 1. Different questionnaires were used at the start and at the end of this session and they are reported separately. Some of the questions which

were included in the second (end of day) questionnaire concerned the effectiveness of the session itself.

Results for the 'start' questionnaire are given in Table 6.1 and results for the 'end' questionnaire are given in Table 6.2. The 'N' values in the Tables differ from the total number of attendees because some team members skipped items.

**Table 6.1 Questions asked at the start of the first learning session**

<b>Has your team completed the following tasks?</b>					
	<b>N</b>	<b>Yes %</b>	<b>No, but started %</b>	<b>Not started %</b>	<b>No plans to do it %</b>
<b>Process mapping</b>	94	59.6	24.5	14.9	1.1
<b>Consumer consultation</b>	95	61.1	28.4	10.5	0.0
<b>Baseline audits</b>	96	87.5	11.5	1.0	0.0

<b>How useful was the information gained through completing the following tasks?</b>					
	<b>N</b>	<b>Very useful %</b>	<b>Useful %</b>	<b>Not very useful %</b>	<b>Useless %</b>
<b>Process mapping</b>	77	51.9	44.2	3.9	0.0
<b>Consumer consultation</b>	86	51.2	43.0	5.8	0.0
<b>Baseline audits</b>	96	62.5	35.4	2.1	0.0

From Table 6.1 it can be seen that close to 85 per cent of teams had at the least started the tasks by first learning session and the majority had completed these tasks by then. A similar substantial proportion said that they had found these tasks useful or very useful, although for all three tasks this was less than the proportion of teams who had completed them. For example, although 87.5 per cent of the teams had completed baseline audits, only 62.5 per cent saw this fundamental first step as 'very useful'. This second percentage will include some respondents from teams who had not at that time completed the baseline audit. For all three activities there were a small proportion of respondents who said that they were 'not very useful'.

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**Table 6.2 Questions asked at end of the first learning session**

Please rate your understanding of the following issues:					
		Very poor	Poor	Satisfactory	Good or very good <sup>1</sup>
	N	%	%	%	%
How to effectively prepare and plan for change	113	0.0	0.9	38.9	60.2
How to influence the effectiveness of teams	112	0.0	1.8	25.9	72.3
The range of strategies to improve delivery of the project bundles	115	0.0	0.9	35.7	63.5
How to prepare a plan for a clinical practice improvement (PDSA cycle)	114	0.0	1.8	31.6	66.7
Implementing clinical practice improvement	114	0.0	0.9	32.5	66.7

Please rate your level of confidence in your team's ability to perform the following tasks:

		Very low	Low	Satisfactory	High or very high <sup>2</sup>
	N	%	%	%	%
Use information obtained through preliminary work to plan improvement strategies	113	0.0	3.5	30.1	66.4
Set achievable targets	115	0.0	2.6	32.2	65.2
Prepare and plan for change	115	0.9	2.6	36.5	60.0
Plan for clinical practice improvement (PDSA cycle)	114	0.9	1.8	31.6	65.8
Implement clinical practice improvement	114	0.0	2.6	33.3	64.1

1 'Good' and 'very good' have been pooled in this column.

2 'High' and 'very high' have been pooled in this column.

From Table 6.2 it can be seen that at the end of the first learning session team members, with almost no exceptions, rated their understanding of the issues dealt with as satisfactory or better. On average about two thirds of respondents chose the 'good or very good category' and one third chose the 'satisfactory' category.

From Table 6.2 it can also be seen that a substantial majority of respondents rated their confidence in the ability of their team to achieve the suggested objectives as satisfactory, high or very high. A small proportion of respondents lacked this confidence. For example, 99 per cent rated their own understanding of clinical practice improvement as satisfactory or better, and 97 per cent had the same level of confidence in their team's ability to undertake these improvements.

Appendix Table A6.2 contains results of feedback from attendees on the effectiveness of learning session 2. The most notable feature of these results was that 51.1 per cent rated the usefulness of the presentations given by other teams on their achievements and difficulties as 'high' and a further 42.6 per cent rated usefulness of these presentations as 'good'. In contrast the opening and closing sessions fared comparatively poorly. From Table A6.2 it can be seen that while most attendees selected the 'good use' or 'highly useful' response categories for each component of the learning session, for some components up to one fifth felt it was only of 'some use' and a few ranked some components as 'of no use'.

### 6.3.3 Learning sessions 2, 3 and 4

Identical questionnaires were used in learning sessions 2, 3 and 4 and the results for these sessions are given together in this section of the evaluation report. At the time of learning session 2, the term action period was introduced and appears in some of the questionnaires. There were three action periods. They were the periods between the learning sessions. Thus in the tables 6.3, 6.4 and 6.5 the results for the questionnaire given at the start of learning session 2 cover team work undertaken during action period 1 and the results for the start questionnaire at learning session 3 covers action period 2. There was no start questionnaire for learning session 4.

Response rates for the start questionnaire at learning sessions 1, 2 and 3 were 73.5 per cent, 49.2 per cent and 59.8 per cent respectively. Response rates for the end questionnaire at learning sessions 1, 2 and 3 were 59.2 per cent, 60.0 per cent and 44.3 per cent respectively. These percentages are calculated using the number registered to attend, no record was kept of the actual number attending.

From Table 6.3 it can be seen that very few team members felt that their ability to achieve health care improvement was poor or very poor. The maximum for expression of this lack of confidence was 12.4 per cent (N=14) at the start of learning session 2 for achieving health care improvements, and this reduced to 1 per cent at the end of the session (but some of the 14 dissidents may have left early).

**Table 6.3 Assessment of own ability to achieve Chronic Care Collaborative objectives made at the start of learning sessions 2 and 3 and again at the end of learning sessions 2,3 & 4<sup>1</sup>**

		Please rate your level of confidence in your ability to:					
		Very poor		Poor	Satisfactory	Good	Very good
		N	%	%	%	%	%
<b>1. Plan for clinical practice improvement (i.e. PDSA cycle)</b>							
Learning session 2	Start	113	1.8	3.5	29.2	54.0	11.5
	End	97	0.0	0.0	23.7	56.7	19.6
Learning session 3	Start	71	0.0	2.8	42.3	43.7	11.3
	End	79	0.0	7.6	41.8	43.0	7.6
Learning session 4	Start	-	-	-	-	-	-
	End	73	0.0	4.1	39.7	39.7	16.4
<b>2. Implement clinical practice improvements (i.e. PDSA cycle)</b>							
Learning session 2	Start	111	2.7	4.5	32.4	49.5	10.8
	End	97	0.0	1.0	25.8	56.7	16.5
Learning session 3	Start	70	0.0	1.4	42.9	44.3	11.4
	End	80	1.3	5.0	40.0	47.5	6.3
Learning session 4	Start	-	-	-	-	-	-
	End	74	0.0	1.4	35.1	51.4	12.2
<b>3. Achieve health care improvement in the Chronic Care Collaborative</b>							
Learning session 2	Start	113	1.8	10.6	35.4	45.1	7.1
	End	96	0.0	1.0	31.3	55.2	12.5
Learning session 3	Start	70	0.0	2.9	55.7	32.9	8.6
	End	80	0.0	7.5	42.5	43.8	6.3
Learning session 4	Start	-	-	-	-	-	-
	End	74	0.0	0.0	47.3	43.2	9.5

<sup>1</sup> These questions were not asked at the start of learning session 4.

## Orientation session and learning sessions

At some learning sessions the assessment by participants of their own ability to achieve Chronic Care Collaborative objectives had increased by the end of the day's work. This can be seen for 'plan, do, study, act cycle' at learning session 2 where there is a move into the higher categories across the cells of the table. For the same objective at learning session 3, however, the start and end results for this objective show no similar

change. Learning session 3 is to some extent atypical in that at the end of the day fewer respondents selected the 'very good' category (referring to their own understanding) than was the case at the beginning of the session. The small differences in the Table 6.3 may also have been influenced by later arrivals and early departures.

**Table 6.4 Assessment by team members at start of learning sessions 2 and 3 and at end of learning sessions 2, 3 and 4 of their team's ability to meet objectives**

		Please rate your level of confidence in your team's ability to:					
			Very poor	Poor	Satisfactory	Good	Very good
		N	%	%	%	%	%
<b>1. Plan for clinical practice improvement (i.e. PDSA cycle)</b>							
Learning session 2	Start	110	0.9	4.5	21.8	50.9	21.8
	End	96	0.0	1.0	15.6	56.3	27.1
Learning session 3	Start	71	0.0	4.2	29.6	52.1	14.1
	End	80	0.0	2.5	33.8	51.3	12.5
Learning session 4	Start	-	-	-	-	-	-
	End	74	0.0	1.4	25.7	55.4	17.6
<b>2. Implement clinical practice improvements (i.e. PDSA cycle)</b>							
Learning session 2	Start	110	0.9	5.5	26.4	51.8	15.5
	End	96	0.0	1.0	17.7	57.3	24.0
Learning session 3	Start	71	0.0	2.8	31.0	49.3	16.9
	End	80	0.0	2.5	40.0	48.8	8.8
Learning session 4	Start	-	-	-	-	-	-
	End	74	0.0	1.4	29.7	58.1	10.8
<b>3. Achieve health care improvement in the Chronic Care Collaborative</b>							
Learning session 2	Start	110	0.9	10.0	30.0	45.5	13.6
	End	96	0.0	1.0	21.9	55.2	21.9
Learning session 3	Start	69	0.0	5.8	39.1	42.0	13.0
	End	80	0.0	5.0	41.3	45.0	8.8
Learning session 4	Start	-	-	-	-	-	-
	End	74	0.0	1.4	31.5	53.4	13.7

When team members were asked to assess their team's ability to meet the same objectives as they had a few minutes previously rated in terms of their own ability they tended to rate their team more highly than themselves (Table 6.4). For example, at the start of learning session 2 11.5 per cent assessed their own ability to plan a PDSA cycle as very good and this increased to 19.6 per cent at the end of the session (Table 6.3), but the comparable percentages for the assessment of team ability were 21.8 per cent and 27.1 per cent (Table 6.4). A small proportion of attendees lacked confidence in their team's ability. For most objectives this was less than 5 per cent of attendees and at maximum was 10.9 per cent.

From Table A6.4 (see Appendix 6) it will be seen that even at learning session 2 (2 months into the project) 39 per cent of the team members attending the session

either did not use or made minimal use of the monthly audit results. Two months later, at learning session 3 this had reduced, but even so 20 per cent said that they did not use, or made minimal use, of the monthly audit results. There were similar results for use of the change package with 28 per cent making no use in the first action period and this reducing to 20 per cent by the conclusion of the second action period. In both cases there was a shift towards increased use.

Overall, respondents to the questionnaires had satisfactory, or better, confidence in the ability of their team to achieve Chronic Care Collaborative objectives at the start of learning sessions and there was a drift across the categories in the direction of increased confidence by the end of the session. The exception was learning session 3 where there was a move from the very good to the lesser categories.

**Table 6.5 Response given by team members attending learning Sessions 2 and 31 on the level of support received**

How satisfied are you with the level of support you received from the following:

	N	Level of satisfaction			
		None %	Some %	Good %	High %
<b>1. Executive sponsor</b>					
Learning session 2	100	11.0	24.0	43.0	22.0
Learning session 3	64	3.1	26.6	42.2	28.1
<b>2. Mentor</b>					
Learning session 2	100	14.0	30.0	36.0	20.0
Learning session 3	62	22.6	25.8	29.0	22.6
<b>3. ICE Collaborative team</b>					
Learning session 2	102	2.0	33.3	48.0	16.7
Learning session 3	64	1.6	15.6	54.7	28.1
<b>4. Other team members</b>					
Learning session 2	105	0.0	11.4	53.3	35.2
Learning session 3	65	0.0	4.6	33.8	61.5
<b>5. Other teams</b>					
Learning session 2	97	3.1	42.3	47.4	7.2
Learning session 3	60	5.0	23.3	56.7	15.0
<b>6. Your organisation</b>					
Learning session 2	107	5.6	33.6	43.9	16.8
Learning session 3	64	6.3	15.6	51.6	26.6

<sup>1</sup> These questions were not asked at learning session 4.

## Orientation session and learning sessions

From Appendix Table A6.4 it can be seen that there were very substantial increases in the perceived benefit obtained from use of the website (from 36 per cent at learning session 2 to 73 per cent at learning session 3) and the use of listserve (from 49 per cent at learning session 2 to 75 per cent at learning session 3). Less benefit had been experienced from teleconferencing (45 per cent at learning session 2 to 53 per cent at learning session 3) and 47 per cent of respondents reported no use or minimal use.

Team members attending learning sessions 2 and 3 were asked to rank the level of support they had received during the preceding action period. These results are given in Table 6.5 where it can be seen that mostly the level of satisfaction was ranked as good or high. For all sources of support there was an increase in satisfaction with the level received as the Collaborative progressed.

The highest level of support was from other team members with 95 per cent ranking this as good or high. No one said that they had received no support from other team members. The lowest level of support was from mentors with 56 per cent saying this was good or high at learning session 2 and this dropped to 52 per cent at learning session 3. Further, there was an increase in negative comments on mentors. At learning session 2 14 per cent of team members rated their level of satisfaction with their mentor as 'none', and this increased to 22.6 per cent at learning session 3 and a further 25.8 per cent at learning session 3 had only 'some' satisfaction with support received from their mentor.

Satisfaction with the support received from the Clinical Excellence Commission increased as the Collaborative progressed. At learning session 2 only 2 per cent of respondents ranked the support they had received from the Clinical Excellence Commission as 'none', but in addition a sizeable minority (33.3 per cent) went no higher than the 'some' category. This improved in the results for learning session 3 with a decrease to 17.2 per cent choosing the pooled 'none' and 'some' category, and an increase in the pooled 'good' and 'high' categories from 65 per cent to 83 per cent.

The questionnaires completed by team members at the conclusion of learning sessions 2, 3 and 4 included items requesting evaluation of the usefulness of the session and components of each session. These results are given in Appendix 6. As would be expected there is variability in these results. It is notable that for all three learning sessions the 'team reports and workshop' item scored highly.

### 6.4 Summary

- The orientation session was highly successful with team members reporting major improvements in their understanding of Chronic Care Collaborative methodology and what was required of them.
- At subsequent learning sessions team members mostly scored their understanding and knowledge of the care of patients with chronic illness and of Chronic Care Collaborative methodology higher when asked at the end of the session than they did when asked at the start.
- At learning sessions 3 and 4 team members were asked about the support they had received. There were substantial minorities (up to 48 per cent) who reported only 'some' or 'none' for support from their executive sponsor, mentor, organisation, other teams and the Clinical Excellence Commission. The majority, however, reported these sources of support as 'good' or 'high'.
- Questions on the usefulness of the content of the learning sessions provided feedback for the organisers. Team reports and workshops were the most favoured content.

## 6.5 Discussion

Data collected at the learning sessions had the advantage of being collected at a time when experience of the session was fresh in the minds of team members. Response rates for completion of these questionnaires ranged from 38.4 per cent to 73.5 per cent of those registered to attend. Some team members registered to attend are believed not to have done so because of unforeseen circumstances. Some attendees arrived late, and for others an early departure was necessary, and they may have missed completing a questionnaire for that reason.

The questionnaires at the start and end of the learning sessions have provided useful information for the evaluation, despite their ad hoc nature and the inconsistency in format and questions asked.

The central finding from the orientation session questionnaire was that at the conclusion team members reported substantial improvements in their understanding of Chronic Care Collaborative skills and methodology and of what was required of them as team members. Thus team members agreed that the main objectives of the day were achieved. There were similar reports of improved skills and understanding at the subsequent learning sessions, with the proviso that at learning session 3 the data suggest that what attendees learnt, or learnt that they needed to do, left them slightly less confident at the end of the session than they were at the beginning.

The learning session questionnaires also provided early information from sizeable dissident minorities, for example, on support said to have been received or not received from team mentors. In general in these questionnaires attendees said that they had benefited from attendance and that their understanding and knowledge had increased.

# 7 Monthly assessment of team progress

## 7.1 Introduction

Teams were asked to rate themselves each month on a 0 to 5 scale and to forward this rating to the Clinical Excellence Commission. Project staff at the Clinical Excellence Commission also rated teams each month using the same 0 to 5 scale.<sup>36</sup> This second rating was not independent of the first as it was made after the Clinical Excellence Commission Collaborative staff had viewed the team's own rating. These data were available for the months April to November 2004. Self-assessed progress rating is one component of the breakthrough methodology.<sup>2</sup> The scale used, as amended by the Clinical Excellence Commission, is included in Appendix 9. Teams were not given written instructions on how to complete this scale, but received instruction orally at learning session 1.

## 7.2 Methods

The data analysed for this section were provided on paper by the Clinical Excellence Commission

and formed part of the monthly data returns to the Clinical Excellence Commission from Collaborative team coordinators. We have no information on how the ratings were obtained by coordinators or whether standard procedures were requested, and followed, throughout Collaborative sites.

## 7.3 Results

The monthly means across all teams are shown in Table 7.1 and illustrated in Figure 7.1. It can be seen that there was a steady predominantly linear increase in the self-ratings across the months of the Collaborative.

There was very close agreement between the self-rating and the rating by the Clinical Excellence Commission. On 84.8 per cent (112/132), of occasions the ratings were identical. On 2.3 per cent (3/132) of occasions the Clinical Excellence Commission rated the team less than their own rating. On 12.9 per cent (17/132) of occasions the Clinical Excellence Commission rated the team higher than they had rated themselves.

**Table 7.1 Monthly ratings of progress by Collaborative teams and the Clinical Excellence Commission**

	Team's self-rating <sup>1</sup>			Rating <sup>1</sup> of team by the Clinical Excellence Commission		
	N	Mean	SE	N	Mean	SE
April	20	2.325	.0909	20	2.475	.0767
May	20	2.550	.1020	20	2.625	.0951
June	17	3.147	.0713	21	3.095	.0742
July	18	3.250	.1356	22	3.295	.1022
August	15	3.467	.1501	22	3.477	.1162
September	10	3.8	.2261	15	3.7	.1447
October	13	4.154	.1314	14	4.179	.0995
November	5	4.300	.1225	1	4.000	-
<b>All</b>	<b>110</b>	<b>2.727</b>	<b>.0679</b>	<b>127</b>	<b>2.831</b>	<b>.0597</b>

<sup>1</sup> The ratings are on a 5 point scale 1 to 5 with 1 being least and 5 being most progress

### 7.4 Summary

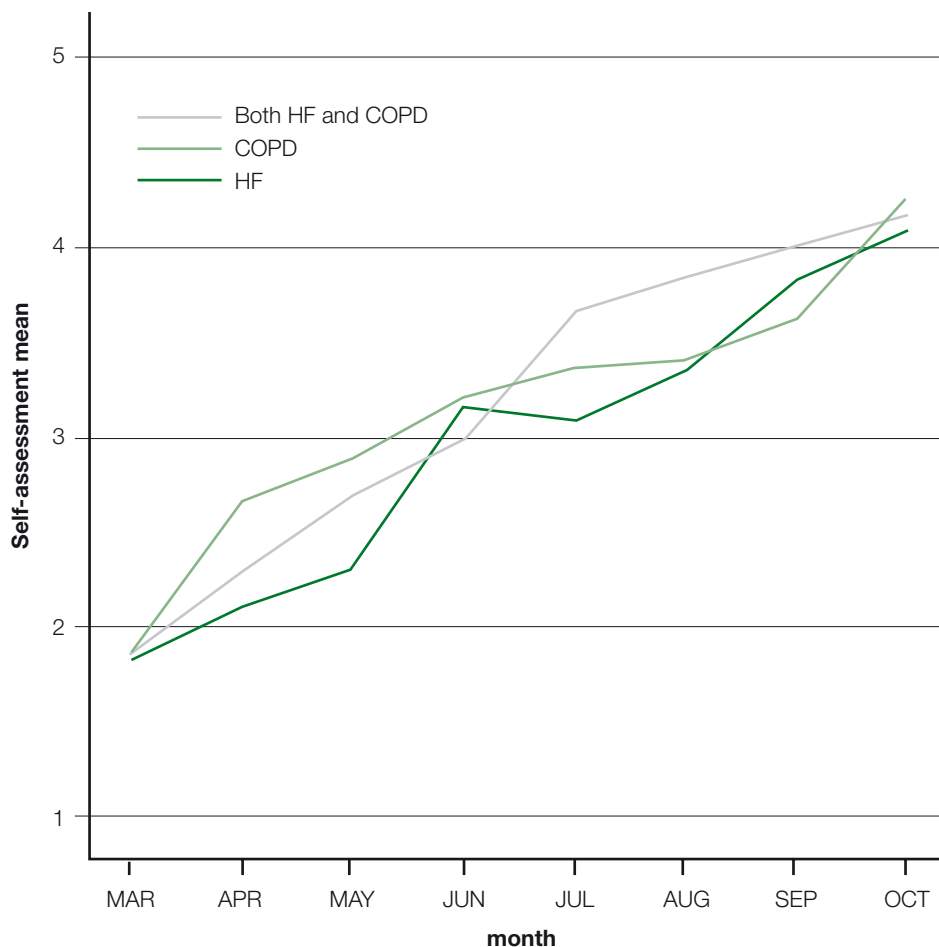
Teams made a monthly assessment of their progress using a breakthrough series 0-5 scale which listed milestones commencing at '1.0 forming team' and ending at '5.0 outstanding sustainable results'. On this scale the mean for all teams increased across the months of the Collaborative from 2.3 to 4.3. There was a similar increase in the rating of team achievement by the Clinical Excellence Commission Collaborative staff (who had prior knowledge of the team's own rating).

### 7.5 Discussion

Team self-assessment of progress increased across the eight months of the Collaborative. In April the average was 2.3 on a five point scale and this had increased to 4.3 by November 2004. There was close

agreement between this self-assessment and an assessment subsequently made by the Clinical Excellence Commission, however, the second assessment was made after inspection of each team's own assessment. These data form a necessary component of the Chronic Care Collaborative methodology, but are not useful as an evaluation of progress, except possibly for the individual teams when they assess their own progress. Further it was clear that some teams misunderstood the instructions for completing this scale. These instructions were given orally at learning session 1. Some errors could be identified, but there may have been others. For example, the idea of the scale is that one proceeds down the items one by one and in order as each level is achieved. Some teams treated the scales as a check list and scored items out of sequence. In one extreme case the first and the last item on the scale were checked.

**Figure 7.1 Monthly self-assessed rating of Chronic Care Collaborative team progress on a breakthrough series 5-point scale**



The plot for the assessment made by Clinical Excellence Commission Collaborative staff is almost identical.

# 8

# Inpatients statistics before and after the Collaborative

## 8.1 Introduction

NSW Department of Health maintains a corporate data warehouse (Health Information Exchange) where data from hospitals and facilities across NSW are collected, checked and made available for auditing centrally and locally by the Area Health Services from which they originate.

The Health Information Exchange maintains an extensive range of health service data sets and these include the Admitted Patient Data Collection. This dataset is built from returns sent from hospitals and facilities across the NSW. These data include every hospital admission for NSW identified as planned or unplanned (emergency), or a readmission. Also included are demographics, identity of hospital/facility, details of diagnoses, treatment and procedures and length of stay.

Information in this section has been extracted from the Admitted Patient Data Collection for all 2.7 million hospital admissions between 1 January 2003 and 31 December 2004 in NSW. The NSW Chronic Care Collaborative was undertaken during the period (1 April to 30 November, 2004). The data are organised by episode. A patient with multiple admissions could have experienced these in one or more hospitals. As hospitals in NSW each use their own patient numbering systems it is not possible to identify a patient re-admitted to a different hospital than for the initial admission. Thus the results are given by episode and not by patient.

A further difficulty is that a patient could have more than one episode during a single admission if there was a change in specialty responsible for that patient during that admission. This, however, would not effect the count of hospitalisations for heart failure and for chronic obstructive pulmonary disease.

The Admitted Patient data for hospitals and facilities involved in the Collaborative have been compared to data from hospitals/ facilities which were not involved. The classification into levels of involvement is based on data obtained from the Clinical Excellence Commission.

This has been used to compare hospitals which were fully involved with those which had no involvement. Hospitals/ facilities classified as 'partially involved' and 'involved only in a general practitioner pathway' have been omitted. These comparisons are tentative, pending further information on the reliability and validity of this classification.

## 8.2 Methods

### 8.2.1 Data

Data were obtained for the period 1 January 2003 to 31 December 2004. This provided details for N=2,706,590 admissions.

The items obtained were:

- patient medical record number (MRN)
- date of birth
- sex
- marital status
- age
- country of birth
- Non-English speaking background
- postcode of residence
- Area Health Service of hospital providing care
- hospital
- length of stay
- date of admission
- date of discharge
- urgency of admission
- health insurance status
- refer to on separation
- ICD 10-AM
- diagnosis and procedure codes
- Diagnostic Related Groups codes (DRGs)
- presenting problem
- previous specialized treatment

- Collaborative status (hospital or facility involved or not involved)
- re-admission with 28 days
- emergency department presentation.

### 8.2.2 Procedure

The data were screened and a variable was created identifying chronic heart failure and chronic obstructive pulmonary disease admissions. Chronic heart failure was defined as an admission with a DRG of F62\* which included F62A and F62B or principal diagnosis of I50\*. Chronic obstructive pulmonary disease was defined as an admission with DRG of E65\* which included E65A and E65B.

Area Health Service and hospital/ facilities were involved in the Chronic Care Collaborative at four different levels including:

- no involvement at all
- no direct involvement but being on a referral pathway from a general practice where interventions had been trialled
- partial involvement full involvement.

A variable was created representing the level of involvement but for comparisons only the fully involved and not involved categories have been used.

### Statistical analysis

The period 1 January 2003 to 31 March 2004 was taken as baseline, 'before Collaborative', and the period 1 April 2004 to 31 December 2004 was defined as post start of intervention. A small amount of data were also available for the period 1 January to 31 March 2005. These were inspected but not analysed. Analysis of variance was used and when appropriate log linear modelling. These analyses were conducted on counts for heart failure and chronic obstructive pulmonary disease admissions and also on these counts expressed as percentages of all admissions for NSW. Analyses for length of stay, readmission within 28 days and unplanned admission were undertaken. All tabular and statistical analyses were undertaken using SPSS version 12.1.35

## 8.3 Results

During the study period (1 January 2003 to 31 December 2004), there were 21,852 episodes

for heart failure and 33,835 episodes for chronic obstructive pulmonary disease. Out of the 21,852 heart failure episodes:

- 44.2 per cent (N=9,654) took place in hospitals/ facilities that were not involved in the Chronic Care Collaborative
- 16.8 per cent (N=3,667) in partially involved
- 32.5 per cent (N=7,101) in fully involved hospitals/ facilities:
- 6.5 per cent (N=1,430) were in hospitals/ facilities not directly involved in the Collaborative but being on referral pathway from a general practice where interventions had been trialled.
- Out of the 33,835 chronic obstructive pulmonary disease episodes:
- 45.9 per cent (N=15,535) took place in hospitals/ facilities that were not involved in the Chronic Care Collaborative
- 16.4 per cent (N=5,548) in partially involved
- 31.9 per cent (N=10,794) in fully involved hospitals/ facilities
- 5.8 per cent (N=1,958) were in hospitals/ facilities not directly involved in the Collaborative but which were on a referral pathway from a general practice where interventions had been trialled.

Episodes in hospitals/ facilities that were partially involved or involved were excluded only insofar as being on a general practitioner pathway, because of uncertainty as to the definition of this category. This left 16,755 heart failure and 26,329 chronic obstructive pulmonary disease episodes in the analysis. These accounted for 0.63 per cent (16,755/ 2,654,855) for heart failure and 0.99 per cent (26,329/ 2,654,855) of total episodes in NSW public hospitals.

Demographic characteristics of patients with heart failure and chronic obstructive pulmonary disease episodes are shown in Table 8.1. Types and urgency of admissions for heart failure and chronic obstructive pulmonary disease, and episodes of readmission within 28 days, are shown in Table 8.2. Numbers and percentages of heart failure and chronic obstructive pulmonary disease episodes in hospitals/ facilities, urbanity (urban versus rural) of these hospitals in 17 Areas Health Services and the extent to which they were involved in the Chronic Care Collaborative are presented in Table 8.3.

## Inpatients statistics before and after the Collaborative

**Table 8.1 Demographic characteristics of heart failure and Chronic obstructive pulmonary disease patients admitted to hospital during 2003 and 2004 in NSW**

Characteristic	Heart failure		Chronic obstructive pulmonary disease	
	2003 (N=11,060)	2004 (N=10,792)	2003 (N=17,261)	2004 (N=16,574)
<b>Gender</b>				
Male	49.6	50.0	56.0	55.9
Female	50.4	50.0	44.0	44.1
<b>Age</b>				
< 50	2.4	2.3	3.1	3.3
50 – 59	4.5	4.8	9.9	9.9
60 – 69	12.5	12.8	23.4	23.8
70 – 79	30.7	29.8	38.8	36.8
80 – 89	38.8	38.7	22.5	23.7
> 90	11.2	11.7	2.5	2.4
<b>Marital Status</b>				
Single	7.5	7.5	9.6	8.9
Married	43.6	44.7	47.2	48.8
Divorced/separated	5.9	6.3	10.6	11.3
Widowed	39.4	37.3	29.3	26.9
Missing	3.6	4.2	3.3	4.0
<b>Aboriginality</b>				
Aboriginal or Torres Strait Islander origin	1.5	1.5	2.8	3.2
Neither Aboriginal nor Torres Strait Islander	98.2	97.9	96.9	96.2
Missing	0.3	0.5	0.3	0.5
<b>Australian born</b>				
Yes	69.1	68.6	76.9	75.9
No	30.9	31.4	23.1	24.1

**Table 8.2 Admission type and urgency of heart failure and Chronic obstructive pulmonary disease patients admitted to NSW public hospitals during 2003 and 2004**

Characteristic	Heart failure		Chronic obstructive pulmonary disease	
	2003 (N=11,060)	2004 (N=10,792)	2003 (N=17,261)	2004 (N=16,574)
<b>Admission type</b>				
Planned	3.3	2.9	3.0	2.7
Unplanned	78.1	78.6	80.0	80.7
Unplanned readmission	18.6	18.4	17.0	16.6
<b>Urgency</b>				
Emergency	92.3	93.9	93.6	94.5
Planned	3.3	2.9	3.0	2.7
Other	4.3	3.1	3.5	2.7
<b>Readmission within 28 days</b>				
Yes, readmitted to the same facility	14.1	13.5	13.1	12.2
Yes, readmitted to another facility	5.9	6.3	5.0	5.5
Not a readmission	80.0	80.2	81.9	82.3

## Inpatients statistics before and after the Collaborative

**Table 8.3 Distribution of hospital heart failure and Chronic obstructive pulmonary disease admissions by level of involvement and Area Health Service in NSW during 2003 and 2004**

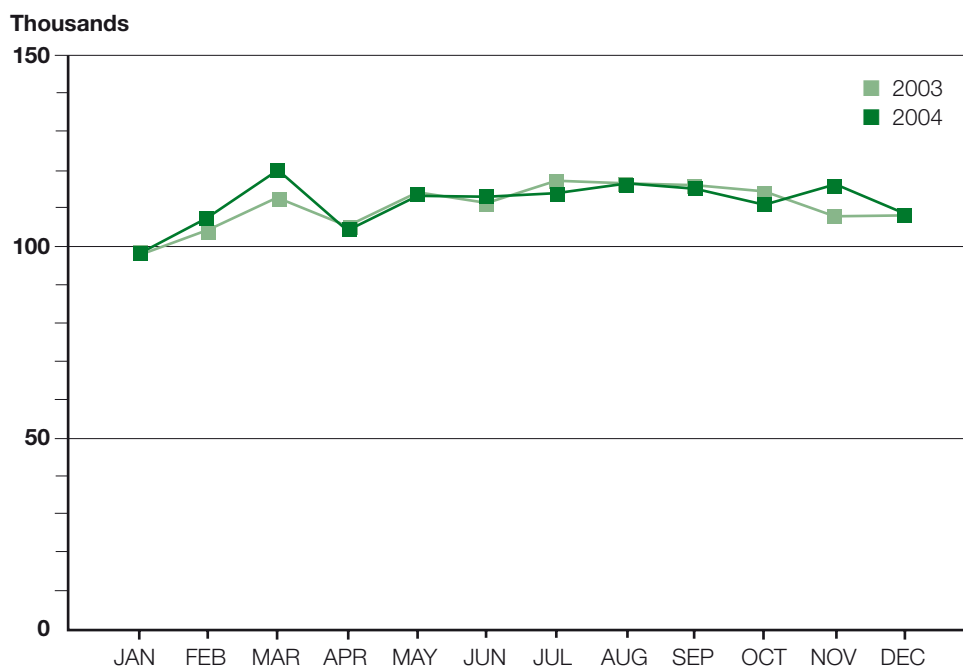
Characteristic	Heart failure		Chronic obstructive pulmonary disease	
	2003 (N=11,060)	2004 (N=10,792)	2003 (N=17,261)	2004 (N=16,574)
<b>Chronic Care Collaborative involvement of hospitals/ facilities</b>				
Fully involved <sup>1</sup>	32.9	32.1	31.2	32.7
Partially involved <sup>1</sup>	16.9	16.7	16.2	16.6
GP practice in a referral pathway <sup>1</sup>	6.4	6.7	5.8	5.8
Not involved <sup>1</sup>	43.8	44.5	46.8	45.0
<b>Area Health Service</b>				
Central Sydney	7.6	7.2	6.0	6.4
Northern Sydney	7.0	7.1	5.3	5.0
Western Sydney	8.3	8.0	8.9	9.4
Wentworth	2.7	2.9	2.8	2.6
Southern Western Sydney	10.7	10.3	10.8	10.4
Central Coast	4.9	5.7	7.1	8.0
Hunter	8.2	8.6	7.0	6.9
Illawarra	6.2	7.1	7.8	7.7
South Eastern Sydney	10.7	10.1	9.3	8.8
Northern Rivers	6.0	5.7	5.5	5.2
Mid North Coast	4.6	4.7	4.9	4.6
New England	4.2	4.4	3.9	3.5
Macquarie	2.6	2.4	3.6	3.9
Mid Western	3.8	3.3	3.9	4.5
Far West	1.0	0.9	1.4	1.2
Greater Murray	7.2	7.3	8.0	8.3
Southern	4.2	4.1	3.7	3.8
<b>Urban/ Rural</b>				
Urban	66.3	67.1	65.0	65.2
Rural	33.7	32.9	35.0	34.8

<sup>1</sup> Status in 2004 during the Collaborative.

From Figure 8.1 it can be seen that admissions for all reasons each month in 2004 were similar to those for 2003. This suggests that the data for the most recent months, November and December 2004, are likely to be

complete, however, this is uncertain and some hospitals may not have finalised their returns when these analyses were made in April 2004.

**Figure 8.1 All admissions to NSW public hospitals during 2003 and 2004**



Admissions for heart failure expressed as a percentage of all admissions in NSW by month for the years 2003 and 2004 are shown in Figure 8.2. Here it can be seen that there is a seasonal effect, with more admissions for the winter months. For October, November and December 2004 there was a decrease in the proportion of patients with heart failure when compared to the same months in 2003.

The heart failure advantage for 2004 in October, November and December were significant at 0.017 or less for each month. For chronic obstructive pulmonary disease there was a significant advantage for 2004 in November ( $P < 0.003$ ) and December ( $P < 0.001$ ), but for May and October there were significant advantages for 2003 ( $P < 0.027$  and  $P < 0.001$  respectively).

Admissions in NSW for chronic obstructive pulmonary disease expressed as a percentage of all admissions by month for the years 2003 and 2004 are shown in Figure 8.3 where it can be seen that there was a similar seasonal effect and a similar reduction in 2004 as was the case for heart failure but only in November and December.

Inpatients statistics before and after the Collaborative

Figure 8.2 Admissions to NSW public hospitals in 2003 and 2004 for patients with a primary diagnosis of heart failure expressed as a percentage of all admissions

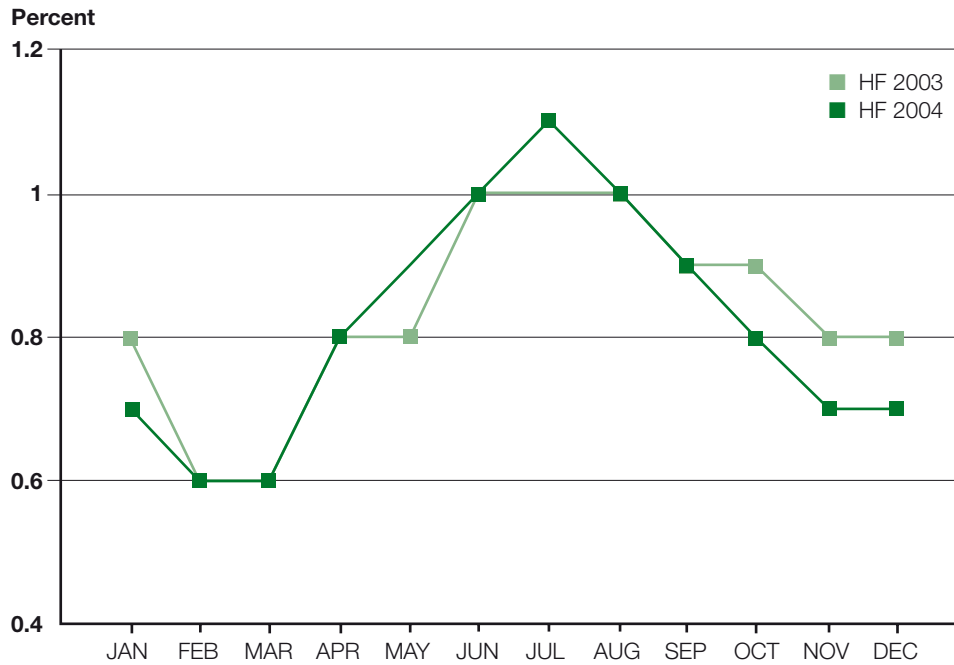
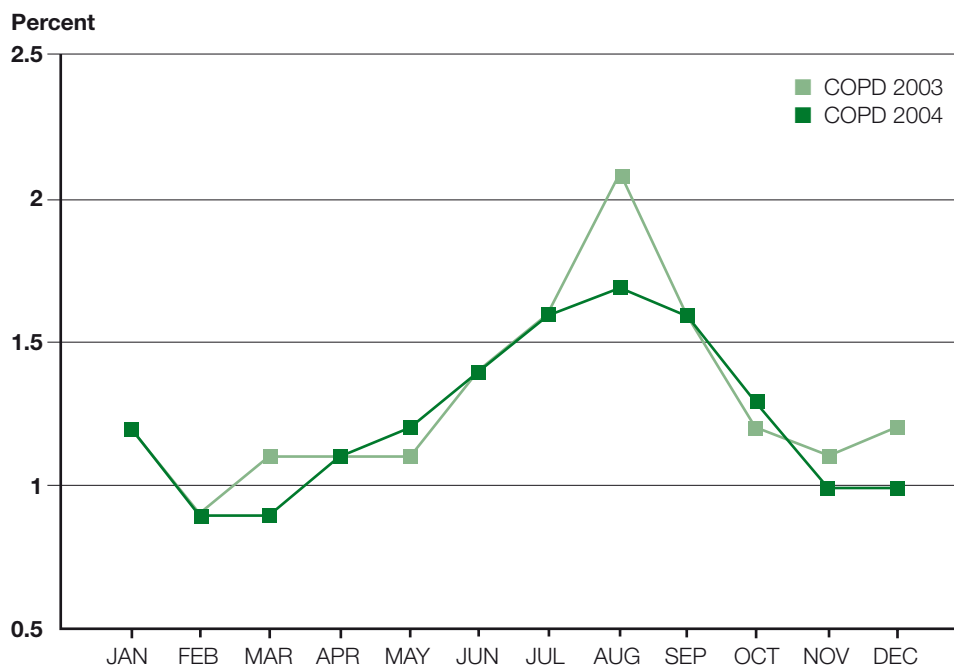


Figure 8.3 Admissions to NSW public hospitals in 2003 and 2004 for patients with a primary diagnosis of chronic obstructive pulmonary disease expressed as a percentage of all admissions



The evaluators looked at data for both heart failure and chronic obstructive pulmonary disease for the months April to December 2004 and compared facilities which were said to have been fully involved to those which were said not to have been involved. The result for heart failure is shown in Figure 8.4 and for chronic obstructive pulmonary disease in Figure 8.5.

From Figure 8.4 it can be seen that the proportion of heart failure admissions was less for the fully involved than for the not involved for all months except August and October 2004. Analyses of the November and December data, removing the initial April difference, found no significant difference between the fully involved and the not fully involved.

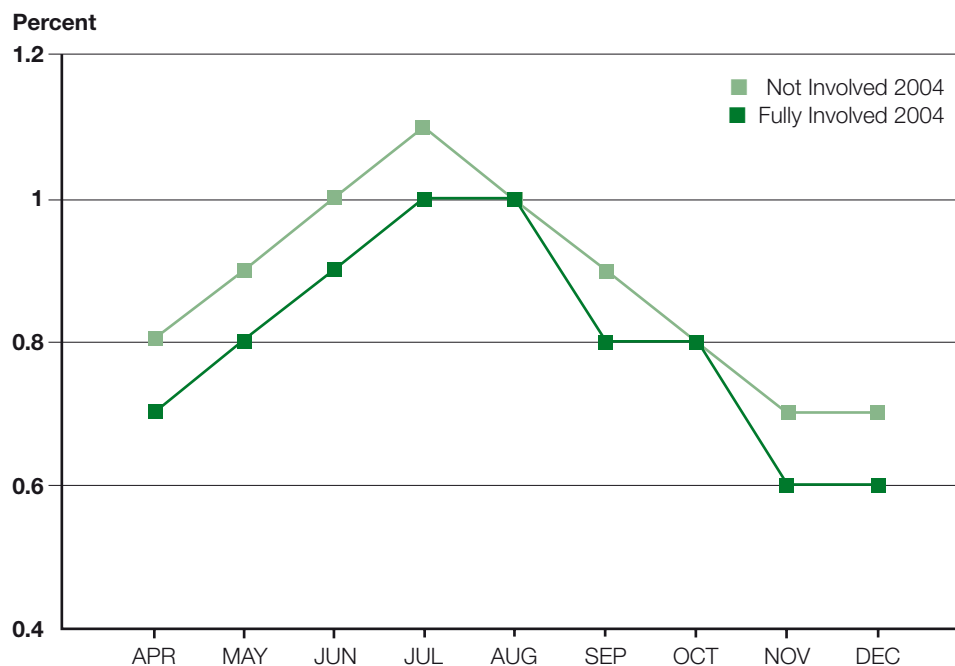
For chronic obstructive pulmonary disease (Figure 8.5) there was a more consistent and increasing advantage for the fully involved group and in simple comparisons

between the involved and the not involved by month there was a significant advantage for the involved for every month after June 2004 (ranging from  $P < 0.0001$  to  $P < 0.004$ ).

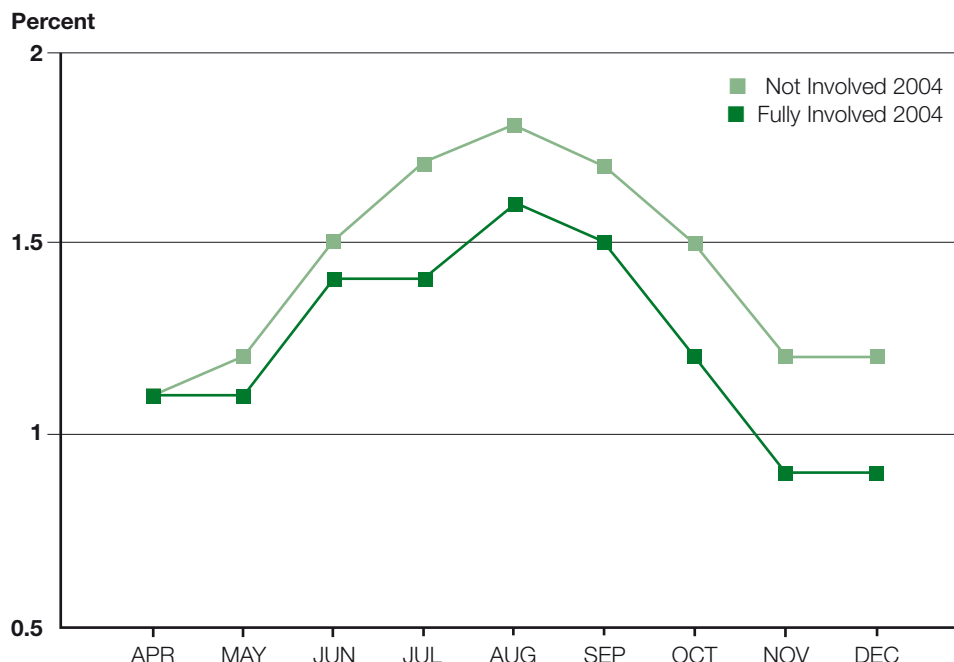
The seasonal effect, with more admissions for heart failure and chronic obstructive pulmonary disease in the winter months, was very evident in these data.

Similar analyses were made using length of stay, emergency admissions and readmissions. In part these produced findings similar to those reported in the analyses above, but in some cases the not involved hospitals performed better than those which were involved. These results are on hold pending more 2005 data and also the introduction of potential confounders and development of a further indicator of degree of involvement.

**Figure 8.4 Admissions to NSW public hospitals for heart failure expressed as a percentage of all admissions (April – December 2004) by level of involvement in the Chronic Care Collaborative**



**Figure 8.5 Admissions to NSW public hospitals for chronic obstructive pulmonary disease expressed as a percentage of all admissions (April – December 2004) by level of involvement in the Chronic Care Collaborative**



### 8.4 Summary

- Heart failure admissions expressed as a percentage of all NSW admissions were significantly less for October, November and December in 2004 than for the same months in 2003 ( $P < 0.017$  or less at each month).
- Chronic obstructive pulmonary disease admissions expressed as a percentage of all NSW admissions were significantly less in November ( $P < 0.003$ ) and December 2004 ( $P < 0.001$ ) than for the same months in 2003, but in May and October there were significant differences in the opposite direction.
- For heart failure admissions expressed as a percentage of all NSW admissions in November and December 2004 there were fewer admissions for the fully involved hospitals/ facilities than for those not involved, but this was also the case in April before any effect could be expected from the Chronic Care Collaborative. There was no significant difference in November and December after the April difference was allowed for.
- For chronic obstructive pulmonary disease admissions expressed as a percentage of all NSW admissions for July, August, September, October, November and December 2004 there were significantly fewer admissions for the fully involved hospitals/ facilities than for those not involved (ranging from  $P < 0.0001$  to  $P < 0.004$ ).
- Similar analyses for length of stay, emergency (unplanned) admissions and readmissions within 28 days produced conflicting results and for some comparisons the not involved did better than the involved. These data need more extensive analyses.

### 8.5 Discussion

Hospital data from the NSW Inpatient Statistics Collection was used to compare admissions, length of stay, emergency admissions, readmissions within 28 days for patients with heart failure and chronic obstructive pulmonary disease before (data for 2003) and after (data for 2004) the Chronic Care Collaborative.

The first learning session of the NSW Chronic Care Collaborative commenced in April 2004 and concluded in November 2004. Admissions for heart failure and for chronic obstructive pulmonary disease expressed as percentages of all admissions were less in November and December 2004 than for 2003.

The comparison made between hospitals and facilities involved and those not involved found no difference for heart failure Collaborative teams after differences already evident in April 2004 had been taken into account. When the same comparison was made for chronic obstructive pulmonary disease there were highly significant advantages for the fully involved hospitals. This advantage was consistently present for the months July to December 2004. Analyses for length of stay, hospital admissions and readmissions produced inconsistent results.

These findings must be viewed as tentative until data are available for a more extended period post the Collaborative. Additional analyses should test the influence of potential confounders, for example size and type of hospital and rurality. Analyses are needed to establish the validity of the degree of involvement indicator and to develop additional methods of measuring the strength of the interventions at individual facilities.

# 9

# Qualitative – focus groups and interviews

## 9.1 Introduction

The contract between the Clinical Excellence Commission and the evaluators specified that at least six focus group meetings should be conducted and that these should include both urban and rural sites. It was also specified that a set of topics should be generated to facilitate focus group discussions. These were subsequently approved by the NSW Chronic Care Collaborative steering committee. It was understood, however, that the focus group meetings would develop from topics which the attendees wanted to raise and discuss, and that the facilitator (a member of the evaluation team) would lead the discussion towards guideline topics only if they were not raised by team members. This was to avoid the risk of attendees giving emphasis to topics perceived by them to be important because of the facilitator's role or style in introducing them, and to limit, as far as possible, reactivity between the facilitator and the data actually collected. It was hoped that the topics would 'grow' out of the group discussion and would be focused by the group itself. When the data were analysed similar steps were taken to reduce selection bias due to reactivity with the analyst's point of view or priorities.

In addition to focus group meetings the evaluators were asked to conduct semi-structured interviews with team members, both urban and rural, and to include representatives of the different professions and roles involved in the Collaborative. Twenty interviews were requested and 26 were undertaken. For these a schedule of questions and probes were developed to aid the interviewer, and to cover topics on which information was requested in the evaluation brief. The intention was that even if a reply deviated from the question, or expanded to other, even unrelated topics, the interviewee would be allowed to continue uninterrupted. If the reply missed the point of the question, then it was asked a further time. If a reply extended to answer a question included later in the schedule, it was not asked a second time. The interview data provided a rich source of material requiring depth analysis beyond what was required, or feasible in the limited time available, for the present evaluation.

Team members taking part in focus group meetings and interviews did so with an assurance that anonymity would be preserved. This anonymity included identity of the participant and of the team or Area Health Service in which the participant was based. Clearly in the taped material and in the transcripts, every participant is frequently named and de-identification of the raw data would be impossible in any practical sense. At each meeting participants were given an assurance that they could speak freely and that the tapes and transcripts would be seen only by an audio typist and by the researchers analyzing the data. They were further assured that any categorization of the data from these sessions would be limited to general categories, such as rural versus urban, to maintain anonymity. A similar assurance was given by team coordinators when arranging the session. At that time agreement on tape recording was obtained. These precautions were essential to prevent bias from participant perception of who might hear, or read, what they had to say.

The evaluators were asked to include in the interviews individuals not involved in the Collaborative. This, however, proved to be impractical, as it was established that such individuals had very little to say, and that the comparatively small number of sessions being held would be most effective if concentrated on participants from as many sites and roles as possible. Instead, the spread of intervention ideas more widely at hospitals and facilities involved in the Collaborative, compared to those not involved, was investigated at the level of team member perception. When the evaluation was planned the intention was that focus group meetings would involve 8 to 10 or more participants and that the interviews would be with single individuals, face to face, and at the participant's hospital/ facility. The evaluation began on that basis, but it was soon evident that project coordinators could seldom gather more than 5 or 6 participants for a focus group (the minimum was 5, the maximum was 11 of whom only 4 were involved in the Collaborative). A decision was then made to extend interviews to include more than one person at a single interview (the maximum was 5). These running changes blurred the distinction between the schedules and methods for the focus groups and interviews. Some

small focus groups needed questions and probes, as for the interviews. Some group interviews did not.

## 9.2 Methods

### 9.2.1 Data

The data were 31 audio tapes and 31 transcriptions of these plus notes taken during each focus group meeting or interview. Two additional interviews were recorded solely by handwritten notes taken during the interviews. We undertook 7 focus group meetings and 26 interviews.

### 9.2.2 Procedure

There was no sampling of Collaborative teams and all but one late-entry Area Health Service were visited. As the evaluators were required to undertake the visits largely during the holiday period of December 2004 and January 2005 the selection of those interviewed, or joining a focus group, at each site were influenced by availability. Team members taking part were selected in consultation with team coordinators to represent all professional roles and also differing levels and areas of involvement. Advice was also sought from the Collaborative Director at the Clinical Excellence Commission. Local arrangements for accommodation and attendance of participants were made by team coordinators. All focus group meetings and all interviews were conducted by the same researcher. A single interviewer/ facilitator was used for consistency and because given the comparatively small number of sessions and the timeframe there was no possibility of training interviewers and comparing technique. Survey procedures such as this would, in any case, have been inappropriate. A second member of the research team attended each session and took notes duplicating to some extent the material on the recording tape. These notes included non-verbal information, for example, the nodding of heads in agreement with something said by a colleague. They also helped identify speakers when the tapes were transcribed.

The tapes were transcribed by an agency audio typist as soon as possible after the group meeting or interview. This was usually within three days. Each tape was then heard in full and compared against the transcript by one or both of the researchers who had been present at the meeting, and also by another member of the research

team who had not been present. During this process, voices on the tape were identified and first names of speakers were added throughout the transcript to facilitate analysis. Off-microphone comments and noises, particularly items encouraging a speaker to continue (mmm?) and hesitations (umm, errh), not transcribed by the audio typist were also added. Interview notes were also consulted at this stage to clarify ambiguities, particularly as to who was speaking on occasions when the tape contained over-speaking by several voices.

### 9.2.3 Apparatus

A Marantz portable cassette recorder PMD 222 with a battery powered boundary microphone, audio-technica AT851a was used. The tape recorder was mains powered with opportunity for both power from a customs rechargeable cell and standard dry cells. The microphone was powered by a single dry cell and was sensitive to sound coming from all directions.

This equipment was chosen for quality recording but also because in the event of a mishap tapes can usually be salvaged with little loss of recorded material, whereas with a digital recording there is greater risk that a loss, however rare, will be total.

### 9.2.4 Analysis

For the focus group data analysis was undertaken by the interviewer/ focus group leader (the facilitator) using depth interview analysis procedures.<sup>37</sup> This was aided by discussion with other researchers who heard the tapes and read the transcripts and by the use of the Nvivo software to search databases in which all transcripts were grouped to find and build categories.<sup>38</sup> This was undertaken separately for all focus group material as one Nvivo project, and again for all interview transcripts grouped as a single Nvivo project. Tapes and transcripts were studied at the same time so that speaking style, forcefulness, intonation, indicators of emotion, could be taken into account. For this report analysis of the interview data was only taken as far as locating information relevant to the heading used in the November survey of team members (Section 5 of this report). Nvivo search procedures were used to do this.

### 9.3 Results

Interviews were open-ended and the longest with two interviewees lasted for 1.5 hours with a transcript of 39 pages. On average, however, interviews averaged approximately one hour and focus group meetings were of similar length.

Team members interviewed included physicians, general practitioners, nurses, directors of nursing, nurse unit managers, cardiologists, consumers, nurse educators, dieticians, physiotherapists, pharmacists, social workers, managers of services, planners, administrative and executive staff, Aboriginal liaison officers, care coordinators, emergency department staff, division of general practice staff. In all 50 team members took part in the focus group meetings, 38 team members took part in individual or small group interviews.

#### 9.3.1 Focus group results

Nvivo was used to segment the computerised transcripts and to organise the segmented data into categories (Nvivo 'nodes').<sup>38</sup> This procedure was undertaken simultaneously to the transcripts for all focus group meetings viewed as one text file. This procedure and inspection of results found the following categories:

- patients – care
- patients and family members – awareness
- unplanned admissions
- education
- collaborative methodology
- motivation
- monthly audits
- involvement
- sustainability
- spread
- resources/staff
- support
- learning sessions
- My Health Record
- successful interventions
- unsuccessful interventions
- problems
- indigenous issues

The categories were grouped as follows:

1. patient care, indigenous issues, patients/family issues and education (clients and carers)
2. collaborative methodology, education (team members), motivation and the learning sessions
3. involvement and support (general practitioners, medical staff, executive sponsors, management and colleagues)
4. sustainability, spread and resources
5. monthly audits
6. successful and unsuccessful interventions
7. problems. These are also included in 1-6 above.

The sections which follow summarise the material (statements made by team members during focus group sessions) under each of the headings 1 to 7 above. Each section concludes with a statement of key points. The key points can be expanded by reference back to the section headings and to the categories on which these are based and to the material from which the categories were derived – the interaction between members at the focus group meetings as recorded on the tapes and summarised in each section.

#### ***Patient care, indigenous issues, patients/ family issues and education (clients and carers)***

*Before the Chronic Care Collaborative:* Team members outlined how patients with heart failure and chronic obstructive pulmonary disease were cared for at their facility prior to the Collaborative and then went on to describe major changes since then. These changes were seen as improvements, and with few exceptions they were attributed to the Collaborative. The exceptions were changes instituted as part of the NSW Chronic Care Program 2000-2003. One cardiac rehabilitation coordinator said that before the Collaborative patients with heart failure were only referred to rehabilitation on discharge if they had experienced a major event such as a myocardial infarction. Another said that a patient might come in once a month with acute pulmonary oedema, once stabilised and well, they would be sent home with maybe a general practitioner referral, but there would be no care until their next presentation. A director of nursing at a rural city hospital said that the lucky few got cardiac rehabilitation, but there was no pulmonary rehabilitation. Similar descriptions were repeated again and again at focus group meetings.

*After the Chronic Care Collaborative:* Many team members described improvements in patient care which they attributed to the Collaborative. A general practitioner said that patients were now leaving hospital in his Division *'really quite well supported, with lots of things in place, and with more investigations done than previously, and actually having a handle on their disease a little better'*. A heart failure liaison nurse said that her work was a lot more efficient since the Collaborative and that she was able to see more patients and that access to general practitioners and cardiologists was a lot better.

Patients were not interviewed, but instances were given of patients who had said, in essence, that their quality of life had improved because of their better understanding of their illness and more informed self-management. These changes were typically attributed to giving patients an action plan and helping them develop a better understanding of their disease. There were similar examples irrespective of disease focus. An example was given of a chronic obstructive pulmonary disease patient who presented via emergency about every 6 weeks for an admission lasting from 5 to 7 days, after commencing pulmonary rehabilitation her next admission was for 3 days, and she commented that she *'got better much quicker'* now. A social worker in a discussion of improvements in patient quality of life said that at her hospital patients were leaving better educated, having ownership over their illness and linked into more supportive measures.

There were many references to Collaborative interventions – the use of spirometry, the titrating of ACE inhibitors and beta blockers, the spread of the patient held *My Health Record*, improved communications and documentation – and at most hospitals or facilities the inference was that this had improved patient care, even if this was not directly stated.

The focus group meetings provided little evidence of improved contact with carers, or of more support for carers but there were notable exceptions. For example, a cardiologist reported that in his experience at his hospital readmission rates had dropped *'just by talking to families and patients'*. Good progress with carers was reported by a team which had strong representation from the community nursing service. Some teams appeared to lack understanding of the possibility of training and support of community or domiciliary

nursing staff both as an early warning system of a potential crisis, or as a method of accessing carers, whereas others (interview data) were doing just that with success after overcoming hurdles in accessing training programs.

At only one focus group meeting was there a spontaneous mention of chronic illness and indigenous patients. The team taking part in that focus group included two Aboriginal liaison officers who said that they had joined the team to get help. They spoke movingly of problems in their work which they had not been able to solve, which were said to devolve around failure to uptake the services offered, *'we are trying to get them to access the service ... to get them to self-manage themselves, and, you know, have plans in place for them, and it just doesn't seem to help'*. The lack of spontaneous mention of Aboriginal patients at focus group meetings could have been because participants knew that services for Aboriginal patients were supported from other NSW Department of Health activities. Direct questioning established that one team had developed close relationships with local Aboriginal health education officers and Aboriginal health officers and undertook home visits in the communities and had started a clinic *'they are really happy, they are lining up at the door to see us, it's a hoot of a day ... we will start with lots education'*. There are major historical, geographic (distance), family structure and likely poverty differences between the areas from which these two examples were found.

**Key findings: Care of patients with heart failure or chronic obstructive pulmonary disease had improved substantially and team members attributed this outcome to the changes introduced by the NSW Chronic Care Collaborative. In addition to medical interventions team members spoke of increases in patient understanding of their disease. Patients were leaving hospital better educated, having ownership over their disease and linked into more supportive measures than in the past. Some projects had successful contact with carers, but this objective was progressed with uneven results.**

### **Collaborative methodology, education (team members), motivation and the learning sessions**

A majority of team members attending focus group meetings, and it seems reasonable to suppose that they included some of the most active members. The majority said that the orientation session held in February 2004 was their first exposure to the idea of a breakthrough series collaborative bringing together a large number of teams from different hospitals or facilities seeking to gain improvements in a focused topic area by comparatively short-term learning and interventions (in the present case 6 months). A certain amount of pessimism was expressed, and there were reports of strong opposition from some medical colleagues (see section 3 below). One cardiologist said that he experienced difficulty *'getting through the jargon'* at the start, but that once this was accomplished he realised that he did have prior relevant understanding. Others made similar comments, and a few insisted that there was nothing new in what was been taught at the orientation session. One executive sponsor said that none of her team colleagues had prior knowledge and that it was only by going to the orientation session that *'we actually got a bit of a picture of what we were getting ourselves involved in'*.

The motivation for taking part varied. A predominant under-current in all of the focus group data (and in the interviews as well) is that the health service workers taking part – at all levels, and all occupations – had a belief in the importance of the care of patients with chronic illness and the need for change and improvement. To this obviously must be added many factors not mentioned, including occupational role and local circumstances. A contrary view was never expressed, and the occasional comment *'I joined the team because I was told to'* is not inconsistent with the task orientated motivation most frequently expressed. There was no mention of an interest in breakthrough series methodology as a motivator for involvement in the Chronic Care Collaborative. Several teams saw their involvement as a follow-on from a previous NSW Department of Health initiative, the 2000-2003 NSW Chronic Care Program. One sponsor said that the Area Health Service had joined the Collaborative because they would have lost funding if they had not done so.

One Area Director of a service, with strong support from others in the focus group, felt that the Collaborative had undermined successful work which they were undertaking as part of Phase 1 of NSW Chronic Care Program. This group said that they had worked on their next steps as requested, and had attended the orientation session expecting to get the go ahead, only to be told to do something different, something they had to do. They did not feel that this was true breakthrough series methodology *'we were asked to develop our own self-management plan ... (we would) develop one and they would say, here you are this is the best one, use this'* and *'at every learning session a new set of requirements would come up so there was no opportunity to just run the model in the way we had anticipated'*. This team had invested resources in the model which they said was 'sidelined'. They felt that the 'imposed' model did not take into account differences in Area Health Service circumstances or resources.

In general rural teams felt that their local conditions, resources, facilities were not adequately taken into account in planning the Collaborative. References were made to the 'rural/ metro divide'. One project coordinator said *'they couldn't understand why we as a Collaborative team couldn't physically get together every week ... until they came to visit'*. This collaborative was following on from work undertaken for the NSW 2000-2003 Chronic Care Program in 3 base and 6 district hospitals separated by up to 3 and 4 hours of driving. They conceded in retrospect that they might well have limited their collaborative geographically, but saw potential problems for perceived even-handedness for clients in a rural community. Problems of size in another sense were felt at one major urban hospital. Here, following the orientation session, this team took on board both diseases and attempted all interventions with growing frustration as the Collaborative progressed despite successes, which were overshadowed by other poor, or nil, results.

Other teams limited their activities considerably. One cardiologist said *'we set our own goals, we set our own directions, but there was constant guidance from members of the Clinical Excellence Commission and that helped us'*. There were remarks expressing gratitude to staff at the Clinical Excellence Commission, *'they got to know my voice'*.

The focus group discussions produced suggestions on how the learning sessions might have been improved. A physician said that they were too intense *'it was too much for our brains to be taking'*. A cardiologist who attended all sessions - sometimes when he was on call - felt that much of what was included could have been dealt with in a much shorter time, or could have been sent out by email (this was from a group interview). In general, the opportunity to network with other teams was seen as the most important aspect of the learning sessions. It was suggested that smaller meetings at centres across NSW would be preferable and less costly.

Team leader: *'I must say that the learning sessions to me didn't seem like learning sessions, like we didn't really learn a whole lot, well in saying that we expected not to be spoon fed, but to have an opportunity to learn say maybe new approaches to dealing with particular things, rather than just hearing feedback from across the Area Health Service'*.

Medical Director (cardiology program who attended all learning sessions): *'that was a big point for clinicians to get there (to learning sessions) it's an all-in sacrifice. You have to cancel procedure lists so that waiting times go up and so you are actually make yourself less efficient ... the comments from other clinicians here are, gosh, we wouldn't take that on'*.

**Key findings: Most team members had little or no previous experience with a breakthrough series collaborative when they joined their local team. Despite much criticism of detail, the orientation session and the four learning sessions, and the networking possible at these, together with material and support from the Clinical Excellence Commission successfully trained team members in breakthrough methodology. Overwhelmingly the motivation for effort in contributing to teamwork was a belief that 'something needs to be done' to improve care of patients with chronic illness and to reduce acute admissions. Lack of resources and over load of duties were seen as major problems. It was said that insufficient attention was given to chronic care programs already up and running in some Area Health Services, and the Collaborative was said to have had a detrimental effect on these.**

### ***Involvement and support (general practitioners, medical staff, executive sponsors, management and colleagues)***

From the focus group data it is clear that some teams had general practitioner and hospital medical members who were active participants, and in some cases a major participant or driver of activities. These teams stood out as well-integrated groups where problems and difficulties were a matter of shared concern. For others these professions were nominal participants and took no active part in the Collaborative. Some team members reported that that they were unable to get even a nominal commitment, or worse, that they had experienced opposition. There were many references to the 'lack of medical buy-in'. One manager said that *'one of the hardest things was getting the doctors (in this case general practitioners) on board ... they haven't really done anything ... it is very disappointing'*. Or another, *'I sent out invitations (to general practitioners), but I got no response'*. Usually these difficulties were said to have been surmounted by proceeding without any help or involvement from medical staff *'it came through the nurses ... absolutely ... there was no interest at all from the medical staff ... we have just forged ahead without them'* (Director of Nursing). There is evidence, however in these data, that team morale may have been influenced by the very frequent lack of involvement from hospital medical staff. One urban general practitioner said, *'we had a large group of hospital physicians who would not come to the group ... how sad for the patients that they can't see beyond this ... that sort of started to annoy me as I went on, I am going, how dare they not come, but there was no point in thinking that either, but I just, I thought that was a sadness that one group could actually disenfranchise and not engage'*. It is not surprising that teams with participating hospital medical members were more likely to report sustainability and spread, as will be seen later. One Collaborative team operated across three Divisions of General Practice but were funded to have only one general practitioner representative on their team. They said they were told that if they wanted more they would have to pay from Area Health Service resources. They believed that this had a detrimental effect on their implementation of the Collaborative. It was suggested that the Collaborative would have been better organised through Divisions of General Practice rather than through the Area Health Service and hospitals.

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Few executive sponsors were present at the focus groups meetings. It was said that when they were available to teams they were a valued asset *'having an executive sponsor on the Collaborative has been really important in terms of supporting change from the top...it has been really good'*. Another project coordinator mentioned the importance of having management in the team because that way they were able to push things from top down as well as bottom up. Very enthusiastic and supportive executive sponsors and Chief Executive Officers (outside the team) were mentioned. At the other extreme the Collaborative was abandoned at one rural site because, it was said, of difficulty with the local Chief Executive Officer, which it was suggested amounted to sabotage. There were a lot of in betweens we had *'so much trouble getting the Chief Executive Officer's support'* – but they did get it. Or at a major urban hospital: *'some of our objectives were understandably quite difficult and needed clinical champions around the table and one of the problems was that we had some clinical champions by proxy, and the proxy actually did not turn up'*.

Collaborative team 'mentors' were seldom mentioned in the focus group data. Mentors were individuals of standing provided centrally by the Clinical Excellence Commission to guide and support local teams. Each team had a mentor. One team coordinator commented, *'our mentor has been such a support, and has been able to give us insight ... also ... working for us in meetings, teleconferences'*. Another group said that they had never seen or heard from their mentor.

**Key findings: There were many references to 'lack of medical buy-in' and some teams had no, or no effective medical member, but there were notable exceptions. Others experienced opposition from medical staff. This was the dominant disappointment mentioned by teams. Executive sponsors and representatives of management were seen as essential for a successful collaborative. Some teams lacked these but in others they took an active, sometimes a leading role. Team members attending focus group meetings showed much evidence of personal understanding, support and collaboration. There was successful involvement of general practitioners who were not in the team, but this varied greatly from Area Health Service to Area Health Service with nil involvement, or opposition, in some. Some teams had very active general practitioner, for others their membership was nominal.**

### **Sustainability, spread and resources**

Sustainability was mentioned spontaneously at all focus group sessions. This is not surprising as it has been emphasised throughout the Collaborative, and had been the subject of recent discussion by all teams. In general, in team thinking sustainability was closely linked with resource issues despite the methodological requirement that Collaborative changes would be sustainable because they involved adjustment and reorganisation of existing resources and not increased spending. There were very obvious difficulties for teams at some sites, usually smaller sites. A program involving an allied health speciality was clearly not sustainable if half way through the project the one person on the staff with that speciality had been instructed to cease working with patients with chronic disease because of the demand for the service in acute care. These are service problems beyond the scope of the Chronic Care Collaborative except to say that such outcomes were discouraging, and would be best foreseen when planning content for collaborative intervention. Thus a cardiologist commented *'I think at the moment it is not sustainable. Systems-wise it is sustainable yes, but individuals still play an important role ... we have got half the bricks laid, half the bricks are not laid ... we don't have the staff. You can't have a project running without staff, it's not sustainable'*. The same cardiologist, however, insisted that even if he were no longer involved, Collaborative changes in the care of patients with heart disease would be sustained in so far as the cardiology department was concerned *'say one of us were to leave, there's an easy approach to another (cardiologist) there will be someone replacing'*. The director of nursing at a rural city hospital said, *'the team felt strongly that we will not sustain this improvement over the longer term without a heart failure registered nurse in place ... which is really disheartening'*. Dietician, *'Well now it is a sadder story ... the program isn't running any more due to lack of allied health staff'*. Rehabilitation coordinator, our sustainability audit looks good but *'it still is fairly reliant on one small group of people'*. Area primary and community health manager, *'we talked to one group of clinicians about sustainability and that met with some resistance ... so it fell back to a system that was personality and passionately driven...'* and that is not sustainable... *'there appears to be ignorance about sustainability due to, turf'*.

If there is bias in the data on sustainability it would appear to be in the direction of optimistic assessments by committed team members, particularly team coordinators. Team coordinators tended to underestimate the importance of their own role when sustainability was discussed. Even so many references were made to systems changes related to specific interventions which would continue unless deliberately changed or permitted to slide into neglect at some future time. This must mean that they were sustainable in that present team members could not be expected to achieve more.

The focus group data contains many references to the spread of Collaborative achievements and this is evidence for sustainability without resource implications to some extent. One primary health nurse said, *'there's been education across the board throughout the hospital and the community in regard to heart failure'*. A coronary care unit clinical nurse said, *'more and more nursing staff on the floor are aware of what needs to be done and what the patient needs to know'*. A rural community nurse talking about a local general practitioner not in the team said, *'he said this year had been interesting, his words were, he knows more about heart failure now than he has ever done in his entire practice'*.

At some hospitals Collaborative interventions were spread beyond the focus of heart failure and chronic obstructive pulmonary disease. A clinical nurse educator in emergency said that they had decided that the smoking intervention could not be restricted to patients with heart failure and was being extended to *'every patient that comes in'*. Elsewhere it was said, *'anyone who hits the emergency department or in the wards with a smoking habit gets the quit pack and gets the opportunity to give up smoking ... that's one good thing about this collaborative'*. A general practitioner said that the focus had been raised, and that people were looking at how they might do things better, not just specifically related to the Collaborative, it's sort of been an impetus to look at how we do things.

An emergency department nurse unit manager talked about *'a small group like us struggling to do our best with minimal resources'*. She thought that spread would come from altruistic (she did not use this word) individuals in the team and not from the *'top level of health'*. She said, *'the spread will come out of us being*

*prepared to take time to go to groups, and to talk about it in our own time, after work, at night, which is what we do'*.

Some team members in positions with authority took action to gain resources. A director of nursing said, *'I ring our finance manager and ask him who has got money in their cost centre. I am determined to get funding for a permanent chronic care nurse'*. She had, so far, achieved a short-term position for the duration of the Collaborative. She later said, *'the only way to get these resources realistically is to take them from acute care beds'* and her aim was to put in place programs which would reduce bed days. Resources were seldom mentioned other than staffing resources, particularly in rural settings. One rural community nurse reported a highly successful pulmonary rehabilitation intervention, *'that's been wonderful'* but for cardiac rehabilitation *'it's like I know nothing, because I've done nothing ... I am doing two jobs (since a departure 3 months previously) ... and the cardiac rehabilitation has gone totally to pot'*. A respiratory clinical nurse consultant elsewhere described the opposite, pulmonary rehabilitation floundered and cardiac succeeded. She said, *'it's one at the expense of the other'*. Another rural nurse said that she had three jobs (community nurse for the under 65s, diabetes education with diabetes community nursing and cardiac rehabilitation) and that when she got an email telling her that she was to take on chronic care and go to Sydney for the orientation session she, *'thought that it had been sent to the wrong person'*.

**Key findings: Sustainability was a major concern of all teams taking part in focus group meetings and all felt that this had been achieved to some extent. It was frequently said that resource increase for chronic care would be needed for Collaborative successes to be sustained in the longer term. Very few individuals (the exception usually was an executive sponsor) accepted, or were aware of, the breakthrough series objective of achieving sustainable improvement within existing resources. Re-deployment of resources from acute care was seen as a realistic alternative if, for example, patient length of stay could be reduced. There was evidence of spread of the Collaborative within hospitals and facilities both to other practitioners and to other chronic illnesses.**

### Monthly audits

The monthly or bimonthly audits undertaken by Collaborative teams to review their progress were a major discussion topic at every focus group meeting. Self-audits are an essential component of breakthrough series methodology. Even so, although this function of the audits was mentioned, and valued, by some discussants at the focus group meetings, there was also a good deal of misunderstanding about the purpose and value of the audits. Some team members felt that this confusion originated from the Collaborative leadership at the Clinical Excellence Commission in that it was suggested to teams that the Chronic Care Collaborative would be evaluated by analysis of the audit data from all teams at the conclusion of the Collaborative. It was said that this was implied by the monthly returns to Sydney, by presentations at the learning sessions, and indeed by the inclusion of the audit data in the quantified side of the present evaluation. One senior area planner said, *'this is absolutely crazy ... in doing the audits they're trying to have a bit both ways, and creating false measures of success and failure'*. From a statistical point of view, there is no reason why data from participating teams in a breakthrough series collaborative could not be pooled and analysed. However this would require planning, preparation, and data control from the start and there was no evidence in the focus group data that this took place. Further, it is likely that any such steps would impair the auditing at a local level and reduce its usefulness for breakthrough series type feedback.

There were positive comments on the feedback value of the audits. A physician said, *'they made a big difference to the way we approached things because when we would get good results we would feel happy about it. When we got a bad result we knew that we had to work there so, it was a good guide'*. A member of one urban team (from emergency) after criticism of the usefulness of the audits by another discussant said, *'remember the impact though, when you guys presented some of those audit results at grand rounds and the doctors were absolutely shocked ... (saying) 'but I am sure we do that', and the evidence showed, no you are not doing that'*. The less positive comments could be grouped in three categories, including time and resources needed, appropriateness of the items audited and validity of the data collected. All three were challenged by individuals in focus group discussions, usually with strong support from other discussants.

*Time and resources needed:* A chronic care coordinator said, *'I found the audits very time consuming'* and another discussant interrupted saying, *'quite stressful weren't they'*. In another group they were said to be *'just a nightmare'*. A director of nursing said, *'we found them extremely difficult to do'*. After a similar discussion in another group a cardiologist suggested, *'space them out a bit'*. At a district hospital in a small town the workload problem was solved by the team member concerned. She did them at the hospital after work and the general practitioner (there was one) called by to help her (interview data). On a larger scale, one service had two teams each doing both diseases, with auditing of ten patients in each of three settings, and these were across scattered sites. The executive sponsor for this team said that they did the baseline audit thinking that it would be a 'one off' with a repeat at the end of the project. When they learnt that they needed to do the next audit one month later, they used part of their Chronic Care Collaborative funds to hire someone to do it.

*Appropriateness:* An area chronic care program manager said, *'the data collection tools often weren't appropriate ... lot's of questions ... for clinicians to complete ... extremely time consuming ... it was quite erroneous at times'*. A similar point was made by a senior planner, *'some of the diagnostic tests were either appropriate or not appropriate and it wasn't clear (which)'*. He continued, *'I don't think they had the foggiest idea of what the possibility of doing some of those things in an emergency department was'*. Others who queried the appropriateness of audit items, suggested that the content of the audit form sent from the Chronic Care Collaborative lead at the Clinical Excellence Commission was proscriptive, that it forced direction to the local interventions, that the interventions were not established by taking into account local knowledge, needs, resources, previous and current programs but by what was requested on the form.

*Validity of the audit data:* From the focus group data it can be clearly seen that different teams placed quite different interpretations on the audit data. At one focus group it was said, *'nobody gets an echo in emergency ... if people got the referral to get the echo done ... I count that as the complete diagnostic bundle'*. This team (in a city where the echocardiographic services is available on 3 days each month, with a waiting list of 8 to 10 weeks) thus had potential for achieving 100 per

cent for the diagnostic bundle in emergency. Elsewhere a project coordinator said, it quickly became apparent that we would never get 100 per cent for the chronic obstructive pulmonary disease diagnostic bundle, *'there is no one who is in emergency or in a general practice clinic going to do a 6 minute walk test ... that was difficult'*. General practitioner member of an urban hospital team, *'... and you would come to another audit and still no one had achieved 100 per cent ... and you would see that no one was ever going to'*. This team had interpreted the audit form as asking if an item had actually been done, not if it was intended or planned.

The selection of patients to be included in the audit was discussed by focus groups. Practice varied widely. Project coordinator, *'you had to make sure that they (the patient selected) had a general practitioner who would actually reply to the audit, so that cut down on a few numbers as well'*. Pulmonary rehabilitation coordinator, *'we did notice that when some people did the baseline audit for inpatient heart failure and chronic obstructive pulmonary disease and then different people did subsequent audits, they were completely different'*. She gave an explanation, we interpreted things differently, like had they had spirometry on this admission, or had they had it ever. Finally, a general practitioner said, *'we thought we were winning on immunisation and all of a sudden we come up with a huge loss – and it is actually 2 patients (not immunised) out of 10'*. She said that instances such as this affected group morale as the year went on. Others in the group agreed, *'we had lots of PDSA cycles going simultaneously (they undertook both diseases in all three settings) and everyone was working really hard, and yet you would come to another big audit and no one had achieved 100 per cent.'*

**Key findings: Regular audits of progress by Collaborative teams are an essential component of breakthrough series methodology, but there was widespread misunderstanding about the purpose and value of the audits. Difficulties in undertaking the audits, and providing resources to do this, were the most frequent complaint made at focus group meetings 'they were a nightmare', was one comment. Partly this was said to be due to the detail - design of the audit requirements and forms which was undertaken centrally - and partly to a lack of understanding of what was feasible, for example, in a busy emergency department or at a rural facility with limited staff. The main problem,**

**however, was the merging of the breakthrough series methodological necessity with an attempt to obtain data for a statewide overall evaluation. It was said that pressure was applied on teams to amend an up-and-running program (for example, to move to a different hospital with more patients) to provide additional data perceived as necessary by the Clinical Excellence Commission team. Despite criticisms most team members said that they valued the feedback on progress from the audits.**

### *Successful and unsuccessful interventions*

Towards the end of focus group meetings the facilitator asked several direct questions usually on topics which seemed at the time not to have been directly discussed by group members. Members were asked about the quality of life of patients and carers and about the quality of life of health service workers. Invariably the groups felt that improvement in the quality of life of patients could be attributed to the team's efforts. There was less certainty about carers. This was also the case for quality of life of health service workers. Focus groups were also asked to name an intervention they had undertaken which was successful and one which was not successful.

The most frequently mentioned successful interventions for chronic obstructive pulmonary disease was the introduction of spirometry in the community and emergency. Some teams reported problems. Such as the lack of effective training in use (rather than demonstrations) or getting the machines into use. At one Area Health Service the machines had been on a central site for many months but were unpacked. This was because approval was needed from a number of committees. The equipment committee and the safety committee had both approved, and at the time of a group interview some weeks after the conclusion of the project, the matter was with the cleaning committee.

The use of and titration of ACE inhibitors and beta blockers was said to be the most successful intervention for heart failure. Some teams reported great success with rehabilitation provision and this was more the case for heart failure than for chronic obstructive pulmonary disease. For others, these interventions were included amongst the least successful.

Progress with *My Health Record* was mixed. Some successes were mentioned, but it was never named at

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a focus group meeting as the most successful intervention, whereas it was named as unsuccessful. One problem was general practitioner acceptance. Sometimes there was a formal rejection at Division of General Practice level (interview data) sometimes it was at the individual level, 'he (the general practitioner) threw it in the bin' (the patient retrieved it). There were positives but they were outweighed by the negatives such as, too 'busy', some patients can't read or write, general practitioners reject, gets out of date and you have to check, given out 400 but haven't seen one return with a patient yet.

Examples of interventions cited at least once as the **most successful** were:

- Chronic care clinical nurse consultant: 'pneumovax, ... we are doing opportunistic vaccination while people are in hospital ... 80 per cent, 85 per cent (of them) with chronic obstructive pulmonary disease'.
- Senior clinical team leader: 'We focused on nicotine replacement ... we have done extremely well on that ... and we are causing significant budget problems for the hospital in terms of nicotine replacement'
- Emergency department nurse unit manager: 'and that's sustainable'.
- Community nurse: 'before they'd just write ACE now they are writing titrated doses of ACEs'.
- Area coordinator ongoing care: 'smoking cessation and using the fax quit line ... we had the resources ... we were able to do it'.
- Rural community nurse: 'spirometry was a pretty good one for us, yes, yes, definitely (sustainable)'.
- Chronic complex care clinical nurse consultant for heart failure services: 'The 6 minute walk test (other voices in agreement) these are really chronic people with quite severe heart disease ... if they have 6 minute walk test improved they just feel a million dollars'.

Examples of interventions cited at least once as the **least successful** were:

- Senior clinical team leader: (after hours point of contact) 'We couldn't really do a lot about it ... project coordinator interrupting...: it was external to the organisation'.

- Nursing unit manager generalist community health: 'These new assessments (a Collaborative initiative) take nearly an hour, an hour and a half, to do ... it's something else on top of their (community nurses) normal jobs of palliative care and domiciliary care. They are not happy ... they want to do it, they recognise the benefit by all means, yeah, but it's the workload'.
- Community nurse: 'My Health Record was not as, what it should have'.
- Community nurse: 'prescription of self-medication'.
- Cardiovascular disease coordinator: 'Oh, flexible diuretics ... so what we had to do was move away from that self-prescriptive sort of approach and say get anybody who we can to fill the damn thing out so the patients know it's all legitimate ... or we come up with alternatives like if ... your ankles are swelling up ... don't leave it 2 days, 3 days, 4 days. 5 days ... you are weighing yourself, you know your weight is going up ... ring the general practitioner'.

**Key findings: Interventions most frequently said to be the 'most successful' were smoking intervention, spirometry, use and titration of ACE inhibitors and beta blockers, immunisation and the 6 minute walk test. Some of these were also mentioned as the 'least successful' and there were specific local reasons for this. Some teams also reported success for after-hours point of contact. The interventions undertaken but most frequently named as the least successful were after hours point of contact, assessments undertaken in the community, use of My Health Record, prescription of self-medication and flexible diuretics.**

### Problems

A wide range of problems have been included in the sections above. These included lack of input from hospital medical staff, the difficulty of engaging general practitioner support, ineffective executive sponsorship and difficulty in combining work in the Collaborative team with other duties. They will not be further discussed here.

An additional area of concern was a perception of differences in whether the Collaborative team was based in a rural or urban setting. A pervasive difference between rural and urban groups was the belief in the former that they were less resourced and further that their circumstances and work environment were not

understood. From the qualitative data overall, it is clear that there were successful teams in both rural and urban settings, and that highly motivated individuals were in both cases, important players in this success. In both settings there were reports that systems had been set up, and there was evidence of sustainability and spread. Rural input at the planning phase of a collaborative is likely to be varied in source and applicability – is it from rich farming, dry grazing, desert, coastal farming, or coastal suburbia? Sensitivities will differ. What seems to be without patronising inferences to one group may well be viewed that way by another. At a rural focus group meeting an activity undertaken at one of the learning sessions in Sydney was discussed. This included a description of a farmer with cardiovascular disease. In a focus group meeting many weeks later the area cardiovascular disease coordinator commented, *'as a rural person and as a farmer and as a farmer's wife you could almost take offence (voices join in saying, yes) and that's how I felt with it ... it just reinforced for me the rural/metro lack of understanding'*. There is evidence in the focus group data that one factor influencing success will be a sense of ownership, and a perception of accepted worth, and that this is related to motivation and effort, to overcoming obstacles, and to belief in the objectives of the project, and belief in the feasibility of success. According to one team, they lost all local support after they had assembled more than 50 colleagues to a meeting where rural feasibility issues were overlooked by presenters who had travelled from Sydney.

**Key findings: Many problems and difficulties were mentioned by team members and many of these were surmounted. These have been included under headings 1 to 6 above. A problem not previously presented is the difficulty of tailoring a statewide initiative to differing local needs, resources, support systems or community pressures. Team members in rural areas, in themselves diverse, felt that more account – and greater sensitivity - could have been given to their circumstances, particularly with what they thought was the proscriptive nature of the audit tool. A notable feature of the present evaluation is that despite these perceptions of differences, and perceptions of being overlooked, when the quantified data was searched for differences between rural and urban teams in achievements, none were found.**

### 9.3.2. Semi-structured interview results

These data were analysed by referring to the topics covered in the survey completed by team members at the fourth learning session held in Sydney at the conclusion of the NSW Chronic Care Collaborative. This questionnaire was designed by the evaluators to provide information requested in the Chronic Care Collaborative evaluation brief. In depth analysis of the interview data is beyond the scope of the present evaluation.

The following headings summarise the information obtained by the November 2004 Survey questionnaire and are used for section headings in these results:

1. usefulness of the learning sessions held in Sydney by the Clinical Excellence Commission
2. perceived effectiveness of the Collaborative
3. perceived team functioning and organisational support
4. perceived spread and sustainability.

#### ***Usefulness of the learning sessions held in Sydney by the Clinical Excellence Commission***

In the survey a substantial majority of team members (86 per cent) said that the learning sessions were fairly or very useful. The fairly useful category, however, was 41.6 per cent and if this is added to the unsure and to the not at all useful categories the total percentage with at least some reservations is 51.6 per cent. The interviews provided the opportunity to explore the nature of these reservations. Inevitably talks and presentations to a large audience will have a varied reception. Some were described as *'very useful'*, *'brilliant'* others as *'grim'* or a *'waste of time'*. Team members appreciated presentations by other teams. Some said that they learnt from these. Some said that it let them see their own difficulties in the wider context, *'we were not as bad as we thought'*. Others, did not accept that presentations were an accurate account of what was happening.

The opportunity to meet and discuss issues with other teams was frequently mentioned as the *'best'* side of the learning sessions. It was said that the opportunities for doing this were inadequate. It was suggested that instead of one large learning session in Sydney smaller groups could be established meeting within driving distance of each other (this suggestion was also made at focus group meetings). One opinion was that the material covered in the learning sessions

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had been expanded to fill the day, and could have been dealt with effectively by other means less costly in the work time lost by participants. Others viewed it as a heavy day during which they had periods of inattention or boredom. Some team members attending the learning sessions were already very well grounded in breakthrough series methods and had substantial chronic care backgrounds. Others said that for them the learning session was a new experience and that they had much to learn.

Team coordinator: *'the networking at the learning sessions is hugely beneficial. The actual content ... did vary somewhat ... (but some) were very beneficial and in each learning session we have been to, the most beneficial has been the team presentations ... that has always been a really important part. The (other) presentations have varied in terms of their usefulness'.*

Team member: *'I find it difficult as the Executive Sponsor, you know they were two or three months apart and it was a bit like, I have to go back and read my notes to actually remember what we did at the last session ... I found that quite difficult. I don't think that the Executive Sponsor sessions were particularly useful. There was one very good speaker from the UK who was fantastic, but a couple of the sessions were pretty grim'.*

### **Perceived effectiveness of the Collaborative**

Every team member interviewed agreed that their understanding of the principles of chronic care management had improved because of their involvement in the Collaborative. This included some who had prior – sometimes extensive – experience of working with, or providing services for patients with chronic diseases. One chronic care coordinator in a rural hospital said that she had been isolated after being appointed to her position two years prior to the Collaborative, and had met opposition, but that the Collaborative had given colleagues a better understanding of the process of chronic disease management and that they had suddenly realized what she was trying to do.

There was general agreement that the Collaborative had improved patient care. Some interviewees appeared to be surprised by this question because they felt that the answer was so obviously positive. This was consistent with the survey finding that 85 per cent of team members thought that the Collaborative had improved patient care and that only 1.4 per cent disagreed (13.6 per cent were unsure). There was frequent mention of

lack of input from hospital medical staff and of difficulty of engaging general practitioners. There were several mentions of occasions when general practitioner attitude with a patient may have reflected negatively on the work of the Chronic Care Collaborative team to the extent that patient care might not have benefited. Effect from a registered medical officer and a nursing unit manager (both smokers), who believed that asking patients the smoking intervention questions was, *'an invasion of privacy'*, despite the clinical service framework target for chronic obstructive pulmonary disease, prevented some patients from possible improvement from this aspect of their care. Teams were ingenious in overcoming such difficulties (but not in the previous example until the registered medical officer moved on). Thus in one Area Health Service difficulties with general practitioner collaboration were met by advising individual patients to visit their general practitioner, and coaching them on what to request.

There were many descriptions of widely successful Collaborative interventions. Spirometry and prescription of ACE inhibitors were examples, but even so some team members had reservations on these mostly successful interventions. For spirometry it was lack of access to the equipment or to training on how to use it. For ACE inhibitors it was doubt that the clinical service framework standard was being consistently applied when it was left to busy, and changing, junior staff and not regularly checked. Most references to *'improved practical skills'* related to spirometry, but some staff said that this had not yet happened and that the new machines were available but that no one had yet been trained to use them. In one Area Health Service the machines were present, but were not yet available for use, although the Collaborative had concluded.

By implication interviewees demonstrated the practical skill of working together as a team was a major gain from the project. There were many references to this and also directly or by implication to improved communication between the services represented in the teams. Work on Action Plans and the development of project material – sometimes with teams in other Area Health Services – were mentioned as successful areas for collaboration. It was said that team work was frequent and sometimes the credit for this was given to the group overall, and sometimes to an individual member, usually the project coordinator. Individuals involved included general practitioners, medical staff, executive staff,

members of the Clinical Excellence Commission staff, a wide range of colleagues (such as the Area community nursing manager) and included one, but only one, Chronic Care Collaborative mentor.

In the survey 24 per cent of respondents were unsure or disagreed with the statement that their department/facility had benefited from the Collaborative. In the interviews lack of benefit was usually mentioned in the context of total non-collaboration, such as by a whole Division of General Practice in an urban area, or by a complete department in a hospital. Where there was involvement, as was mostly the case, interviewees saw this as providing a benefit to their department or facility. This extended to sustainability but with the very frequently stated proviso that benefits achieved at department/ facility level were to be sustained then increased resources, or redeployed resources would be essential. Lack of sustained benefit for a department or facility was invariably linked with opinions on the need for and/or availability of resources.

Operational Manager (base hospital): *'I have watched the pulmonary rehab program and the cardiac rehab program that we have here. I have watched the intervention work brilliantly ... it doesn't just improve their admission rates or their length of stay but improves the whole life of the client... they feel better in themselves, their life, their mood lifts. They are more likely to exercise; they are more likely to eat well; they are more likely to be compliant with their medication, and I have watched it happening with the clinicians I have got on board at the moment, and I take my hat off to them. It has been remarkable.'*

Area Quality Manager: *'The thing we struggled with, and I am sure you've probably heard it from other rural sites, is to generate good PDSA cycles in a timely fashion. In a collaborative you need numbers, you need data to be able to do that, and we struggle ... (to generate sufficient numbers to evaluate their work) ... and we would go with our three or five cases and we'd say, well, you know ... and everything became virtually a study of n equals 1...'*

### **Perceived team functioning and organisational support**

The organisation of the Chronic Care Collaborative teams varied greatly, depending on membership and tended to be personality driven. There was considerable difference between official team lists and a listing of

the attending, active team members as described by interviewees. From the interviews (and the focus group meetings) there appeared to be some misunderstanding as to who was needed as a team member and who needed to be involved at the level of providing support. In some Areas Health Services the actual functioning team was said to be 4 or 5 members all with nursing backgrounds. Notable exceptions were described, but they were sparse. Just over 75 per cent of respondents in the survey said that they were pleased with the effectiveness of organisation within their teams. In the interviews there appeared to be 100 per cent satisfaction with the effectiveness of organization within teams. (At focus group meetings on only one occasion was there a suggestion of an undercurrent of disagreement between team members with possible effect on organization and achievement).

The fact that more interviewees were satisfied with the effectiveness of their team's organisation than survey respondents probably reflects sample differences. The survey was completed by up to 10 members from a team whereas the interview was with an individual or a small group of usually 2 to 4 team members. Also the interviewee may have been thinking of a restricted group of 4 or 5 active team members which may well have included themselves. The same would apply to the question on involvement of team members in decision making. In the survey 78.3 per cent agreed that all team members contributed. From the interviews it seemed clear that this referred to all attending, active team members, whereas attendees at the learning sessions who completed the survey might have been drawn from a wider population.

Interviewees said that communications between services caring for patients with chronic illness had improved as a consequence of the Chronic Care Collaborative (survey 92.1 per cent of respondents concurred). Difficulties sometimes concerned personalities and sometimes different perceptions of job roles. Overcoming these difficulties was more likely to be the result of personal or team effort than executive support. For example, members of one urban team described much successful work involving establishing new channels of communication with a home or domiciliary nursing service particularly with regard to early detection and prevention of crisis admissions. According to members of other teams, similar efforts were frustrated either at management level or by individuals who did not see

this as within their job specification. Some teams did not attempt intervention in this context because of their perception of the poor likelihood of success, the reason given was either the likelihood of no support from management of home nursing services, or the lack of skill of home nursing staff.

Interviewees described situations in which support from senior clinicians was good but this was mostly not the case, again matching the survey where 21.2 per cent of respondents disagreed or strongly disagreed with the statement that the improvement that they had initiated received support from senior clinicians (and another 35.8 per cent were unsure). Mostly the role attributed to senior clinicians was nil involvement and not opposition. The same was sometimes, but less frequently, the case for executive sponsors and some interviewees said that their team received no support from that direction, one comment was *'never attended'*. Some attributed this to pressure of work and said that support was always given whenever they needed and requested it. In the survey 81.9 per cent of respondents agreed that having an executive sponsor in a Chronic Care Collaborative team was crucial for success. Interviewees agreed with this.

In the survey a substantial majority (77.8 per cent) ranked the support provided by the Clinical Excellence Commission as excellent in intention but a sizeable minority (22.2 per cent) were unsure or disagreed. When they were asked about the support in practice, not just as intended, those agreeing or strongly agreeing that it was excellent dropped to 67.6 per cent and those uncertain or disagreeing increased to 32.4 per cent. These percentages could include people attending the learning sessions who other than on this occasion had little direct involvement with the Clinical Excellence Commission. The availability of the Clinical Excellence Commission staff for advice and support was strongly endorsed in some interviewees. The listserv facility was uniformly praised, although not all interviews made direct contact with it but relied on another team member, usually the team coordinator, to do this on their behalf.

Area director of population health and planning: *'... and I think the other one was, there was a sense of a team, wasn't it? (voice agreeing) I think there was a, you know, there was a sense that we were doing it together (voice: 'definitely'). I mean, we had some doubts about it along the way (general laughter), had to regroup a*

*couple of times, but there was a sense that we were doing it together and that we were learning something.'*

Emergency department nurse: *'...it introduced me to the concept of working together ... from different fields, but coming in and working together ... it's been very good ... our team leader has been very instrumental in keeping us together, you know, keeping us focused.'* Later, *'the general practitioner who was first involved with our collaborative and very interested and went to the first learning session in Sydney, came back and was told by the other general practitioners, oh, you are not going to let them tell you what to do, so he pulled out ... but I don't know, that was second hand ...'* Still later, *'Well, we had lots of problems with community health, and everything we asked them to do they couldn't do, even though we offered to go down and audit notes ourselves, well, that wasn't possible, and it was like, it was, there was this wall, barrier.'*

### **Perceived sustainability and spread of change**

During the period preceding the interviews, and close to the timing of the survey of team members, much of the Collaborative effort had been directed at sustainability and to a lesser extent, spread of Chronic Care Collaborative initiatives. It was to be expected interviewees would expect questioning on these topics. In the survey 63 per cent agreed or strongly agreed that the Chronic Care Collaborative changes would be sustained, and the strongly agreed category was selected by only 11.6 per cent of respondents. In the survey 89.3 per cent of respondents said that more resources would be needed if the improvements the Chronic Care Collaborative had achieved were to be sustained. The discrepancy between these two percentages (89.3 per cent versus 63 per cent) suggests that some team members did not expect the resources they felt were needed would be available.

From the opposite perspective many thought that resources would be available. In the interviews it was possible to look at these issues at a level of greater deal farspread and sustainability for chronic care. Firstly, most of those interviewed felt that specific interventions their team had made were sustainable, that they were built in the system, were not personality driven and would persist even if the whole team moved away. A cardiologist said that all cardiologists in his department knew what the Chronic Care Collaborative had attained, that they supported the Chronic Care Collaborative

initiatives and that anyone of them could take over his role in the team if needed. Examples were given by interviewees of systems changes introduced as part of the Collaborative which were protocol driven, and which it was said, would be sustained. One example was smoking referrals in emergency and this had been spread to all presentations and at the time of the interview was being introduced across the wards for planned admissions. Another was an impressive intervention adjusting the work specifications of domiciliary nurses to take on board new Chronic Care Collaborative suggested tasks. This involved collaboration of managers and staff and in-service training. This was thought to be sustainable not merely because it had management support, and support from the nurses concerned, but because documentation changes had been developed and built into the system.

General practitioner: *'it just felt from my point of view that a lot of the things we tried to do were so dependant on individuals to continue with them, that I wonder how sustainable they were. I would like to have seen more changes within the system. (We) increased the knowledge of everybody concerned (residents, the individual pharmacist) as to how important it was that people have medication titration, for example, or that they have patient held medical summaries, but whether ... (that) is sustainable, I suggest it may not be'.*

Director of Area Quality Unit: *'... we need strong leadership to set it up, and to question and to build that, and if the leader is good then I hope they build that capacity within their team and organisation, so that there is sustainability built in. We certainly have examples of that'.*

Team coordinator (with 400 chronic obstructive pulmonary disease admissions per annum): *'The biggest issue with sustainability at the hospital level is really the constant need for re-education ... your junior medical staff have 5 terms in a year, your registrars have 4, so they're rotating ... every time you face a rotation you face a re-train of staff ... there's pool nurses, there's agency nurses .. as long as you can keep that education cycle going then the things you have chosen to do will have sustainability'.*

Area community care manager: *' ... but for sustainability, I am really concerned about the workload ... they have done the work (nurse unit managers in the team), now it needs to be handed to somebody that can run with it'.*

Team member: *'the only areas that seem to be sustainable and to keep happening have been those areas that have a secondary care consultative service, whether it is palliative care, or continence advisor, or a wound care clinical nurse consultant, so why don't we have a heart failure clinical nurse consultant in the community?'*

Cardiologist: *'There's been some surprising barriers (to sustainability and to spread), hasn't there? I think everyone has given lip service to, in principle, agreeing to the dose titration schedules ... but I don't know how often they try to encourage that on their ward rounds and say have you done this and have you done that? ... in principle there has been good agreement that dose titration schedules should be spread out to put in the discharge summary and be specified on ward rounds, but practically I think it has wanted'.*

Nursing unit manager for area cardiac rehabilitation programs: *'it (the Collaborative) is too reliant on particular individuals ... I don't believe enough of the senior management of this institution have been won over yet. I can think of one particular senior management whose personal opinion will, will seriously effect whether the aims of the Collaborative become systemic change or not ... unless you have the key people and senior management of an organization, championing some change, asking for the change to happen, providing the resources for it to happen, following it through, ensuring it's happening, ensuring that people who need to collect the information are collecting it because they believe that they need to collect it. Unless you have them on board it won't be a systemic change'.*

# 10 NSW Chronic Care Collaborative evaluation – overview

This overview brings together the most important findings from the preceding chapters of this report and draws conclusions about the effectiveness of the NSW Chronic Care Collaborative as evidenced in the quantitative data analyses, and in the qualitative data – the opinions and judgements of the health service workers who joined together to form the Collaborative teams.

The quantitative data used in the evaluation came from disparate sources. Mostly it was collected as a component of the breakthrough series methodology which was adopted by the Chronic Care Unit at the NSW Department of Health and the Clinical Excellence Commission who were the drivers of the NSW Chronic Care Collaborative. Thus although collection and inspection of these data will have fulfilled process functions for the teams and for the project leadership, they presented difficulties when incorporated into an over-all evaluation of the Collaborative. Nonetheless, the evaluators believe that at the level of analysis made, the findings are robust and that the quantitative data has provided valid evaluation of the Chronic Care Collaborative objectives.

Also included was quantitative data from the NSW Department of Health Inpatients data collection. These data are sent to the Department from Area Health Services and include all admissions to NSW public hospitals, with demographic, diagnostic and procedure codes, and other information. There is a time lag in these data reaching the Department and at the time of the evaluation data were available for the duration of the Chronic Care Collaborative and for one month after conclusion of the Chronic Care Collaborative. To these data was added a variable representing degree of involvement (provided by the Clinical Excellence Commission) in the Collaborative for each hospital or facility in NSW. Analysis established that the proportion of NSW hospital admissions in 2004 which were for chronic obstructive pulmonary disease was significantly less for the fully involved hospitals compared to those which were not involved for every month after June

2004, including December. Although there were similar differences for heart failure teams these were also present before the Chronic Care Collaborative began, and when this was allowed for there was no significant differences. We concluded that these analyses were tentative and needed both more data and confirmation of the validity of the degree of involvement indicator, and development of an additional indicator based on the audit data.

The quantitative analyses possible, during or soon after, the completion of a service intervention, can only measure short-term outcomes, and not the spread and sustainability of improvements made. For this reason the evaluation included data obtained from focus group meetings with team members and semi-structured interviews. Even though these also will deal with short-term outcomes, they will also include the expectations of those involved. The expectation by team members that an improvement will be sustained may in the longer term prove to be incorrect, but if team members believe that an improvement they have achieved will not be sustained, they will probably also have reasons for believing this. The identification of these reasons and the definition of problems and difficulties, are important components of an evaluation aimed at adding benefit to improvements already made, and for future planning of similar interventions. Thus, qualitative data are important contributors to the evaluation of a breakthrough series collaborative, not only for facilitating the interpretation of quantitative results, but in their own right.

## Conclusion

The Chronic Care Collaborative was not a research project. It followed the breakthrough series methodology of achieving, in a relatively short time, focused improvements in health care through the training and actions of a large number of teams based in hospitals and community facilities across a service. It assumed at the start that this methodology was sound and that studies overseas, and in Australia, had demonstrated this unequivocally. If attempts had been made to impose the rigour of a sound experimental design, measurement and data collection, then the proven breakthrough series outcome of rapid improvement in quality of health service delivery would almost certainly have been lost. Even so, the quantified data amassed from the monthly team audits, the learning session questionnaires and the survey strongly support the contention that the Chronic Care Collaborative has improved the skills of team members to successfully introduce clinical practice improvements and that the care of patients with heart failure and chronic obstructive pulmonary disease has improved as a consequence of this. The validity of this conclusion rests on the data returned by team members to the Chronic Care Collaborative, and these conclusions were consistent with what team members said at focus group meetings and in interviews. The main objective of these meetings and interviews was not confirmation of what could be seen in the audits, questionnaires and the survey, but greater detail on the successes and difficulties experienced by teams learning and working together to achieve clinical practice improvement objectives, in this case implementation of the NSW Clinical Service Frameworks for heart failure and chronic obstructive pulmonary disease. Thus the qualitative data goes beyond the quantitative data in that it gives many pointers relevant to the planning and implementation of future health service initiatives aimed at improvements. It suggests priorities for action, in the opinion of those working closely with patients with chronic illness, and these go beyond the two diseases selected for attention on this occasion.

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# Appendix 1

## Audit forms used by the Clinical Excellence Commission for the monthly audits

See following pages

### Chronic Care Collaborative Bi-monthly Report

**TEAM:** 
**REPORTING PERIOD:** 
**DATE SUBMITTED:**

Collaborative teams should report on performance against the Collaborative aims in the tables below at least once per two months (May, July, September and November).

#### chronic obstructive pulmonary disease Table 1: % of people audited who have had complete diagnostic bundle\*

Setting	Team Target	Base-line	Apr**	May	Jun**	Jul	Aug**	Sept	Oct**	Nov
Community										

#### chronic obstructive pulmonary disease Table 2: % of people audited who have had complete management bundle\*

Setting	Team Target	Base-line	Apr**	May	Jun**	Jul	Aug**	Sept	Oct**	Nov
Community										
Emergency Department										
At Discharge										

#### chronic obstructive pulmonary disease Table 3 (optional): % of patients audited with who advance care directives discussed

Setting	Team Target	Base-line	Apr**	May	Jun**	Jul	Aug**	Sept	Oct**	Nov
Community										
Emergency Department										

\* Someone who has had a complete diagnostic or management bundle is defined as someone who has either had all the interventions listed in the bundle, or have a contraindication for those interventions that were not had

\*\* Report optional

## Chronic Care Collaborative Monthly Report – Chronic Obstructive Pulmonary Disease

<b>TEAM:</b> Shoalhaven Chronic Care Collaborative Team	<b>REPORTING PERIOD:</b> November 2004	<b>DATE SUBMITTED:</b> 2 December 2004
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The following table enables you to track progress in regard to each of the specific diagnostic and management bundle items.

**Chronic obstructive pulmonary disease Table 4: % of people audited who have had specific diagnostic or management bundle item or for whom it was contraindicated:**

Diagnostic or management bundle item	Community Setting			Emergency Dept			At Discharge		
	Team target	Base-line	Current month	Team target	Base-line	Current month	Team target	Base-line	Current month
Clinical assessment including: a) focused clinical history <sup>1</sup> b) physical examination <sup>2</sup>									
Spirometry <sup>3</sup>									
Baseline investigations to guide clinical management <sup>4</sup>									
Smoking cessation intervention									
Bronchodilators (beta agonists and/or anti-cholinergics)									
Consideration of inhaled steroid therapy									
Self-management support <sup>5</sup> (including action plan <sup>6</sup> ) that has been delivered in the context of appropriate education									
Referral to or completion of an individually tailored multidisciplinary rehabilitation program <sup>7</sup> (individual or group)									

- 1 Focused clinical history would include assessment of dyspnoea, exercise capacity, chronic cough and sputum production, exacerbations of chronic bronchitis, quantitated total cigarette intake, assessment of nicotine dependence, and exclusion of asthma
- 2 Physical examination would include full respiratory examination, and assessment of presence of chronic obstructive pulmonary disease, and simple assessment of exercise tolerance where possible
- 3 Spirometry – to confirm diagnosis and assess severity of airway obstruction - should be performed before and after 200-400 mcg salbutamol or equivalent bronchodilator
- 4 Baseline investigations to guide clinical management may include chest X-ray to exclude focal lung lesions, resting
- 5 Self-management support – Focuses on empowering and preparing patients to manage their health and health care through: (a) Emphasizing the patient's central role in managing their health; (b) Use of effective self-management support strategies that include assessment, goal setting, action planning, (c) problem solving and follow-up, (d) Organising internal and community resources to provide ongoing self-management support to patients
- 6 Action plan – [a written plan] which covers self-management of important aspects of the disease, recognition of symptoms and signs that signal the need for professional attention and information on how to obtain this attention
- 7 Pulmonary Rehabilitation (Respiratory Clinical Services Framework) – Program designed to improve quality of life, reduce dyspnoea, anxiety and depression, and improve exercise capacity (as measured by six minutes walk distance)

## Appendix 1

**Chronic obstructive pulmonary disease Table 4: % of people audited who have had specific diagnostic or management bundle item or for whom it was contraindicated (continued):**

Diagnostic or management bundle item	Community Setting			Emergency Dept			At Discharge		
	Team target	Base-line	Current month	Team target	Base-line	Current month	Team target	Base-line	Current month
Review for suitability to receive home oxygen therapy									
Recommended schedule of review by GP (and other health care providers if required)									
Influenza immunisation current									
Pneumococcal immunisation current									
After-hours points of contact									
Advance care directives discussed <sup>8</sup>									

<sup>8</sup> This items relates to an optional aim of the Chronic Care Collaborative

**Progress Update:**

**Improvement Intervention:**

**Issues/barriers and solutions to be pursued to address those issues or barriers:**

**Other Comments:**

## Chronic Care Collaborative Bi-monthly Report – Heart Failure

**TEAM:**  **REPORTING PERIOD:**  **DATE SUBMITTED:**

Collaborative teams should report on performance against the Collaborative Aims in the tables below at least once per two months (May, July, September and November).

**Table 1: Heart failure: Per cent of people audited who have had complete diagnostic bundle\***

Setting	Team Target	Base-line	Apr**	May	Jun**	Jul	Aug**	Sept	Oct**	Nov
Community										

**Table 2: Heart failure: Per cent of people audited who have had complete management bundle\***

Setting	Team Target	Base-Line	Apr**	May	Jun**	Jul	Aug**	Sept	Oct**	Nov
Community										
Emergency Department										
At Discharge										

**Table 3 (optional): Heart failure: Per cent of people audited with who advance care directives discussed**

Setting	Team Target	Base-line	Apr**	May	Jun**	Jul	Aug**	Sept	Oct**	Nov
Community										
Emergency Department										

\* Someone who has had a complete diagnostic or management bundle is defined as someone who has either had all the interventions listed in the bundle, or have a contraindication for those interventions that were not had.

\*\* Report optional

## Chronic Care Collaborative Monthly Report – Heart Failure

**TEAM:** 
**REPORTING PERIOD:** 
**DATE SUBMITTED:**

The following table enables you to track progress in regard to each of the specific diagnostic and management bundle items.

**Table 4: Heart failure: Per cent% of people audited who have had specific diagnostic or management bundle item (for example echocardiography) or for whom it was contraindicated:**

Diagnostic or management bundle items	Community setting			Emergency Dept			At Discharge		
	Team Target	Base-line	Current month	Team Target	Base-line	Current month	Team Target	Base-line	Current month
Clinical assessment including: c) focused clinical history <sup>9</sup> d) physical examination <sup>10</sup>									
Echocardiography									
Baseline investigations to guide clinical management <sup>11</sup>									
ACE inhibitor for patients with systolic Heart Failure									
Approved beta-blocker for patients with systolic heart failure									
Dose titration schedule for ACE inhibitors and beta-blockers where prescribed									
Smoking cessation intervention									
Self-management support <sup>12</sup> (including action plan <sup>13</sup> ) that has been delivered in the context of appropriate education									

9 Focused clinical history would include assessment of (a) symptoms of heart failure (i.e. dyspnoea, orthopnea, paroxysmal nocturnal dyspnoea, fatigue, oedema, palpitations/syncope) and severity of symptoms using New York Heart Association class; and (b) history of past CVD and risk factors, alcohol use and medications

10 Physical examination would include pulse rate and rhythm, blood pressure, jugular venous pressure, peripheral oedema and ascites, cardiomegaly, murmurs, lg cepitation, hepatomegaly

11 Baseline investigations to guide clinical management may include biochemistry profile including electrolytes, full blood count, chest X-ray, ECG and thyroid function – refer Algorhythm, Appendix B, Heart Failure Clinical Services Framework, volume 2 (NSW Department of Health, 2003)

12 Self-management support – Focuses on empowering and preparing patients to manage their health and health care through: (a) Emphasizing the patient’s central role in managing their health; (b) Use of effective self-management support strategies that include assessment, goal setting, action planning, (c) problem solving and follow-up, (d) Organising internal and community resources to provide ongoing self-management support to patients

13 Action plan – [a written plan] which covers self-management of important aspects of the disease, recognition of symptoms and signs that signal the need for professional attention and information on how to obtain this attention

**Table 4: Heart failure: Per cent% of people audited who have had specific diagnostic or management bundle item (for example echocardiography) or for whom it was contraindicated (continued):**

Diagnostic or management bundle items	Community setting			Emergency Dept			At Discharge		
	Team Target	Base-line	Current month	Team Target	Base-line	Current month	Team Target	Base-line	Current month
Referral to or completion of an individually tailored multidisciplinary rehabilitation program <sup>14</sup> (individual or group)									
Recommended schedule of review by GP (and other health care providers if required)									
Influenza immunisation current									
Pneumococcal immunisation current									
After-hours points of contact									
Advance care directives discussed <sup>15</sup>									

14 Cardiac Rehabilitation – Interventions used to help cardiac patients maximise physical, psychological and social functioning to live productively and with confidence, and to assist and encourage behaviours likely to minimise the risk of further cardiac events and conditions. Service should include physical activity, health education and counselling programs tailored to meet the individual and cultural needs of the patient and their facility. Cardiac rehabilitation is commonly provided in an inpatient and group outpatient setting and increasingly includes home-based and outreach programs

15 This items relates to an optional aim of the Chronic Care Collaborative

**Progress Update:**

**Improvement Intervention:**

**Issues/barriers and solutions to be pursued to address those issues or barriers:**

**Other Comments:**

# Appendix 2

## Survey questionnaire

### NSW Chronic Care Collaborative Evaluation Survey, November 2004

This survey aims to collect information from you about your experience as a team member during the course of the Chronic Care Collaborative between March and November 2004. Please answer each of the following questions. The questions are mostly in multiple-choice format and are necessarily limited to topics suitable to be dealt with in that way. Feel free to make any open-ended comments you wish on the final page. There will be further opportunity for in depth comments when the evaluators visit Collaborative sites during the coming months.

#### Collaborative Team Focus

- Chronic Heart Failure    Chronic Obstructive Pulmonary Disease    Both

#### Where

- Rural    Metropolitan

#### Your profession

- Allied Health    Management    Medical    Nursing    Consumer/carer

- Other \_\_\_\_\_

#### Setting

- Community Health    General Practice    Hospital    Other \_\_\_\_\_

#### When did you join your team?

- February - April    May - July    August - October

#### Your team role

- Clinical Leader    Exec Sponsor    Project Coordinator    Team Member

#### How useful have you found the learning sessions:

- Not useful at all    Just a little useful    Unsure    Fairly useful    Very useful

Approximately how many years have you been engaged in your current profession \_\_\_\_\_ years?

Approximately how many years have you held your current position \_\_\_\_\_ years?

How many Chronic Care Collaborative learning sessions have you attended \_\_\_\_\_ sessions?

Please answer each of the questions which follows. Do not miss any.

Please indicate how strongly you agree or disagree with the following statements by circling one number for each statement:

	Strongly Agree	Agree	Unsure	Disagree	Strongly Disagree
1) I am confident that the Collaborative has been effective in improving patient care	1	2	3	4	5
2) My understanding of the principles of chronic care management has improved since I joined the Collaborative	1	2	3	4	5
3) My knowledge of diagnosis and management of patients with heart failure or chronic obstructive pulmonary disease has improved through participation in the Collaborative	1	2	3	4	5
4) Our team members have already put into practice most of what we have learnt about chronic disease from the Collaborative	1	2	3	4	5
5) In my opinion, our Department/Facility has gained significantly from the team's involvement in the Collaborative	1	2	3	4	5
6) I believe that the changes in patient care which our team has fostered will be sustained	1	2	3	4	5
7) Much effort and much time, above the normal call of duty, is needed if a Collaborative team is to succeed	1	2	3	4	5
8) From my experience, more resources will be needed if Collaborative improvements are to be sustained	1	2	3	4	5
9) Our team was well supported by our Executive Sponsor	1	2	3	4	5
10) In my opinion, having an Executive Sponsor in a team is crucial for success	1	2	3	4	5
11) The improvements we initiated received support from senior clinicians who weren't in the team	1	2	3	4	5
12) In our team everyone contributed when decisions were being made	1	2	3	4	5
13) Our team has already discussed what we will do to spread learning from the Collaborative in the future	1	2	3	4	5
14) I expect our team will meet to plan what we can do to aid wider use of learning from the Collaborative in our Department/Facility	1	2	3	4	5
15) I am very pleased with the effectiveness of organisation within our team	1	2	3	4	5
16) I would rank the organisational support our team has received from Clinical Excellence Commission as excellent as far as intention goes	1	2	3	4	5
17) In practice the organisational support our team has received from Clinical Excellence Commission has been excellent	1	2	3	4	5
18) I think it is unlikely that our work for this collaborative will help spread CPI methodology into the wider local Health Area context	1	2	3	4	5

## Appendix 2

	<b>Strongly Agree</b>	<b>Agree</b>	<b>Unsure</b>	<b>Disagree</b>	<b>Strongly Disagree</b>
19) I have confidence in my ability to help plan future Clinical Practice improvements	1	2	3	4	5
20) I have improved my ability to engage with patients and carers, and to benefit from what they have to say	1	2	3	4	5
21) One of the most important things those of us in the team have learnt is the importance of establishing efficient communications at all levels	1	2	3	4	5
22) We developed a rapport during the Collaborative, which made it easy to communicate within and outside the team. I won't lose this.	1	2	3	4	5
23) The Collaborative has given us practical skills in the management of patients with chronic disease.	1	2	3	4	5
24) Please write any comments you would like to make here. Tell us about any successes you would like us to take into account in the evaluation, as well as problems or failures.					

**THANK YOU FOR COMPLETING THIS QUESTIONNAIRE**

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# Appendix 3

## Variable dictionary for the Inpatients Statistics data

### **Variables for the Inpatients Statistics from the NSW Department of Health Information Exchange system**

The following data are at episode level.

1. Patient medical record number
2. Date of birth
3. Sex of the patient
4. Marital status of the patient
5. Age of the patient
6. Country of birth
7. Indigenous status
8. Post code of residence - patient
9. Area Health Service - of hospital providing care
10. Hospital
11. Length of stay
12. Date of admission
13. Date of discharge
14. Urgency of admission (emergency department presentation)
15. Health insurance status
16. Refer to on separation
17. International Classification of Disease 10-AM, diagnosis code (principal plus up to 19 secondary diagnoses for each episode)
18. International Classification of Disease 10-AM, Procedure code (principal plus up to 19 secondary procedures)
19. Diagnostic Related Groups (diagnosis related groups v4.2)
20. Planned and unplanned admission
21. Planned and unplanned readmission
22. Readmission within 28 days

# Appendix 4

## Survey of team members – additional tables

**Table A4.1 Differences associated with team focus**

		Heart failure n=31 %	Chronic obstructive pulmonary disease n=45 %	Both n=64 %
The improvements we initiated received support from senior clinicians who weren't in the team	<b>Agree</b>	67.7	37.2	34.9
	<b>Disagree/unsure</b>	32.3	62.8	65.1
$\chi^2=10.0, df=2, p=0.007$				
I would rank the organisational support our team has received from Clinical Excellence Commission as excellent as far as intention goes	<b>Agree</b>	93.5	77.8	70.3
	<b>Disagree/unsure</b>	6.5	22.2	29.7
$\chi^2=6.5, df=2, p=0.038$				
In practice the organisational support our team has received from Clinical Excellence Commission has been excellent	<b>Agree</b>	87.1	64.4	60.3
	<b>Disagree/unsure</b>	12.9	35.6	39.7
$\chi^2=7.1, df=2, p=0.029$				

**Table A4.2 Differences associated with profession**

		Management n=40 %	Medical n=9 %	Nursing n=61 %	Allied Health n=20 %
How useful have you found the learning sessions?	<b>Fairly/very useful</b>	100.0	66.7	88.1	70.0
	<b>Not useful/unsure</b>	0.0	33.3	11.9	30.0
$\chi^2=14.7, df=3, p=0.002$					
I have improved my ability to engage with patients and carers, and to benefit from what they have to say	<b>Agree</b>	60.0	76.9	55.6	85.2
	<b>Disagree/unsure</b>	40.0	23.1	44.4	14.8
$\chi^2=7.9, df=3, p=0.049$					

**Table A4.3 Differences associated with length of professional experience**

		<b>Years (Mean)</b>
The improvements we initiated received support from senior clinicians who weren't in the team	<b>Agree</b>	17.1
	<b>Disagree/unsure</b>	21.9
		t=-2.8, df=134, p=0.005

**Table A4.4 Differences associated with Collaborative team role**

		<b>Clinical leader n=11 %</b>	<b>Exec. sponsor n=9 %</b>	<b>Team coord. n=26 %</b>	<b>Team member n=93 %</b>
One of the most important things those of us in the team have learnt is the importance of establishing efficient communications at all levels	<b>Agree</b>	63.6	100.0	96.0	93.5
	<b>Disagree/unsure</b>	36.4	0.0	4.0	6.5
		$\chi^2=13.6$ , df=3, p=0.004			
Our team has already discussed what we will do to spread learning from the Collaborative in the future	<b>Agree</b>	72.7	100.0	84.6	60.2
	<b>Disagree/unsure</b>	27.3	0.0	15.4	39.8
		$\chi^2=10.3$ , df=3, p=0.016			

**Table A4.5 Differences associated with month in which participant joined team**

		<b>Feb-Apr n=109 %</b>	<b>May-Jul n=20 %</b>	<b>Aug-Oct n=9 %</b>
How useful have you found the learning sessions?	<b>Fairly/very useful</b>	88.9	68.4	75.0
	<b>Not useful/unsure</b>	11.1	31.6	25.0
		$\chi^2=6.1$ , df=2, p=0.048		
In my opinion, our Department/ Facility has gained significantly from the team's involvement in the Collaborative	<b>Agree</b>	77.1	85.0	33.3
	<b>Disagree/unsure</b>	22.9	15.0	66.7
		$\chi^2=9.7$ , df=2, p=0.008		
I am very pleased with the effectiveness of organisation within our team	<b>Agree</b>	79.8	68.4	44.4
	<b>Disagree/unsure</b>	20.2	31.6	55.6
		$\chi^2=6.4$ , df=2, p=0.041		
The improvements we initiated received support from senior clinicians who weren't in the team	<b>Agree</b>	47.2	26.3	12.5
	<b>Disagree/unsure</b>	62.4	73.7	87.5
		$\chi^2=6.0$ , df=2, p=0.05		

**Table A4.5 Differences associated with month in which participant joined team (continued)**

		<b>Feb-Apr</b>	<b>May-Jul</b>	<b>Aug-Oct</b>
		<b>n=109</b>	<b>n=20</b>	<b>n=9</b>
		<b>%</b>	<b>%</b>	<b>%</b>
Our team was well supported by our Executive Sponsor	<b>Agree</b>	63.0	94.7	44.4
	<b>Disagree/unsure</b>	37.0	5.3	55.6
		$\chi^2=9.3, df=2, p=0.009$		
I would rank the organisational support our team has received from Clinical Excellence Commission as excellent as far as intention goes	<b>Agree</b>	85.3	50.0	55.6
	<b>Disagree/unsure</b>	14.7	50.0	44.4
		$\chi^2=15.3, df=2, p<0.001$		
Our team has already discussed what we will do to spread learning from the Collaborative in the future	<b>Agree</b>	73.1	45.0	66.7
	<b>Disagree/unsure</b>	26.9	55.0	33.3
		$\chi^2=6.2, df=2, p=0.044$		
I expect our team will meet to plan what we can do to aid wider use of learning from the Collaborative in our Department/Facility	<b>Agree</b>	88.1	85.0	50.0
	<b>Disagree/unsure</b>	11.9	15.0	50.0
		$\chi^2=8.7, df=2, p=0.013$		

**Table A4.6 Differences associated with number of learning sessions attended**

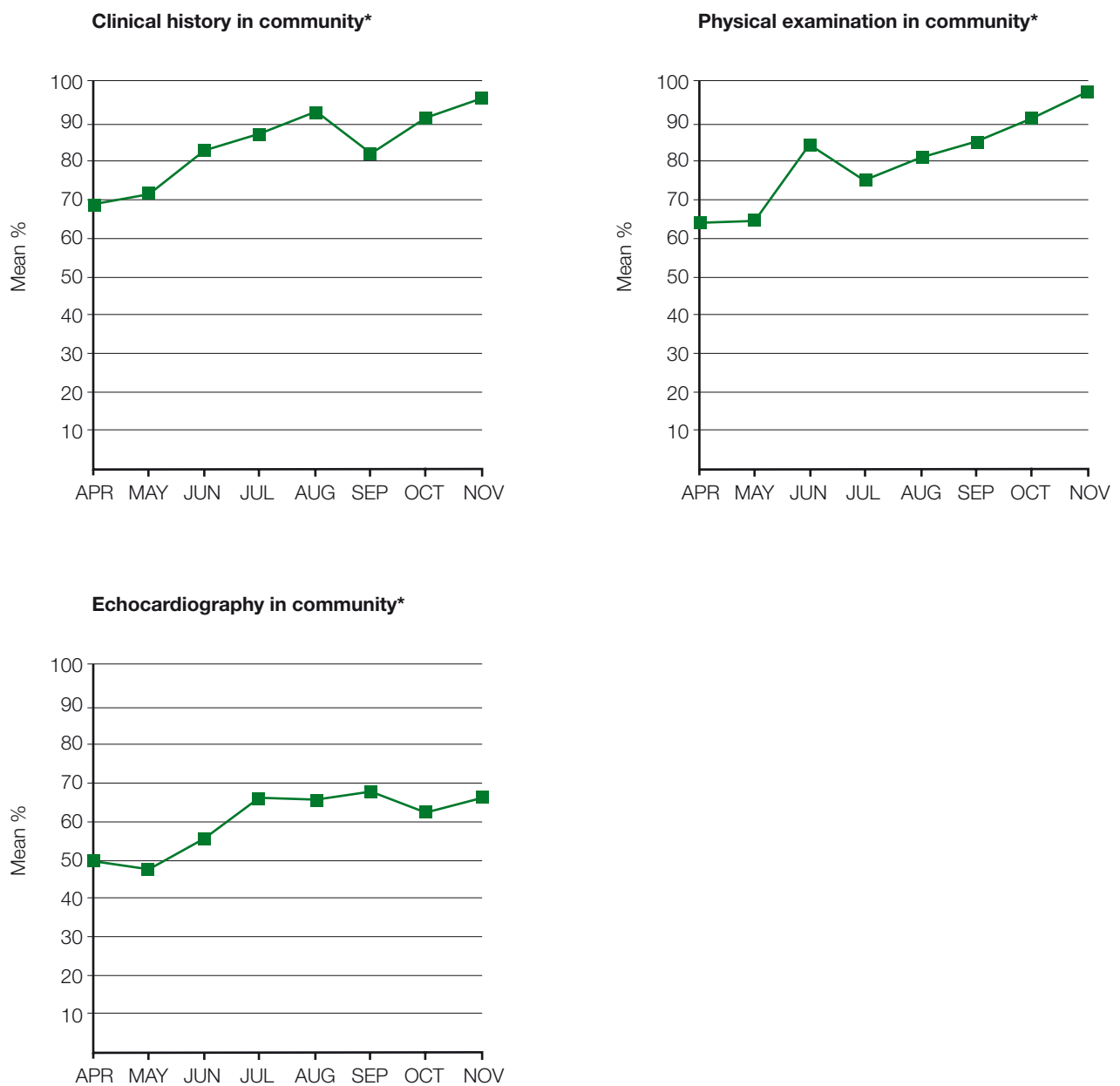
		<b>Number of sessions (Mean)</b>
How useful have you found the learning sessions?	<b>Fairly/very useful</b>	3.5
	<b>Not useful/unsure</b>	2.7
		$t=4.0, df=135, p<0.001$
I would rank the organisational support our team has received from Clinical Excellence Commission as excellent as far as intention goes	<b>Agree</b>	3.4
	<b>Disagree/unsure</b>	2.8
		$t=3.3, df=138, p=0.001$
I have confidence in my ability to help plan future Clinical Practice improvements	<b>Agree</b>	3.4
	<b>Disagree/unsure</b>	2.9
		$t=2.0, df=137, p=0.049$

# Appendix 5

## Additional monthly audit results

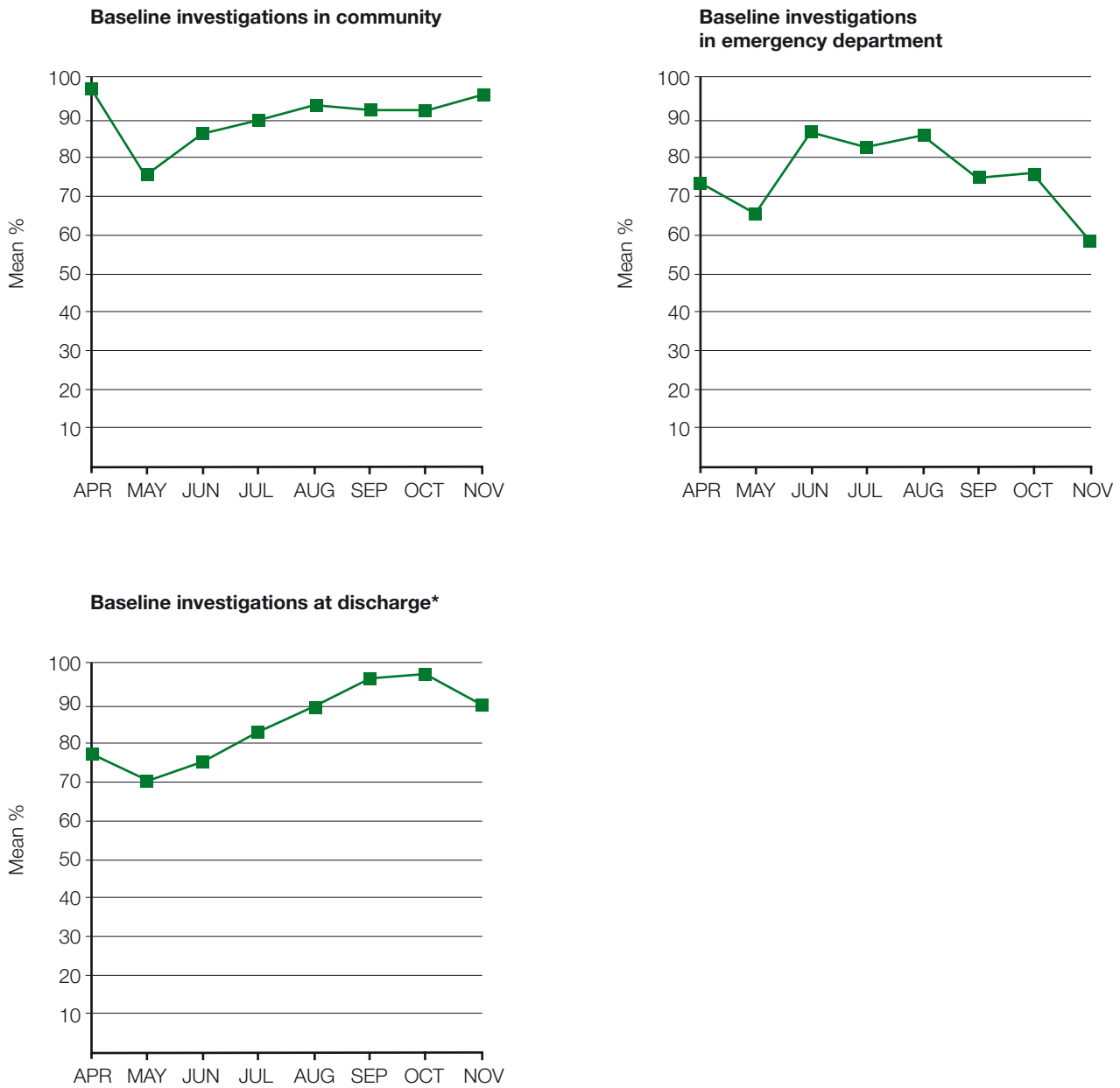
### 5A. Heart failure additional figures

Figure A5.1 Heart failure diagnostic bundle



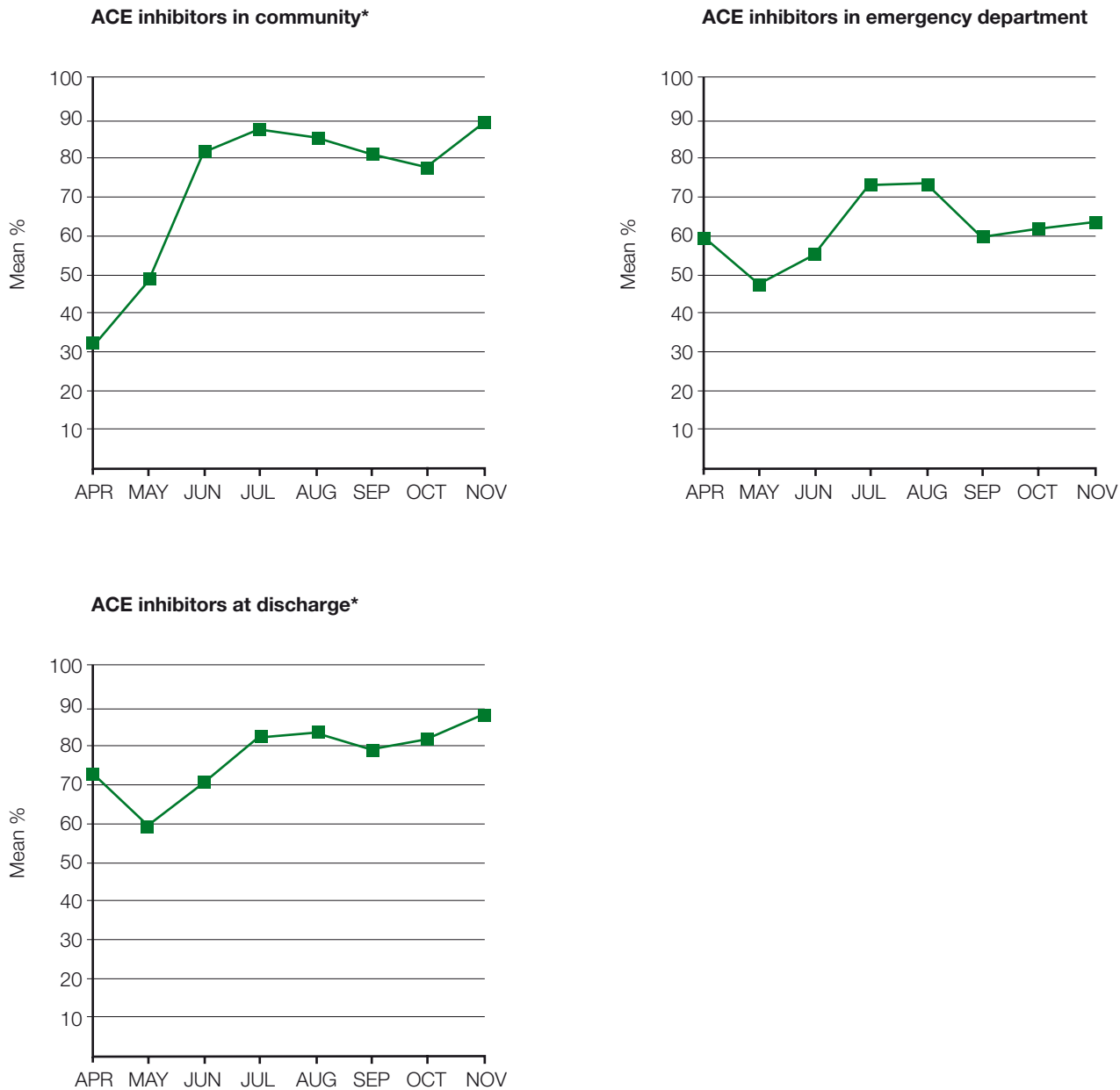
\* Significance  $P < 0.05$  change per month.

**Figure A5.2 Heart failure baseline investigations completed in the community, emergency department and at discharge**



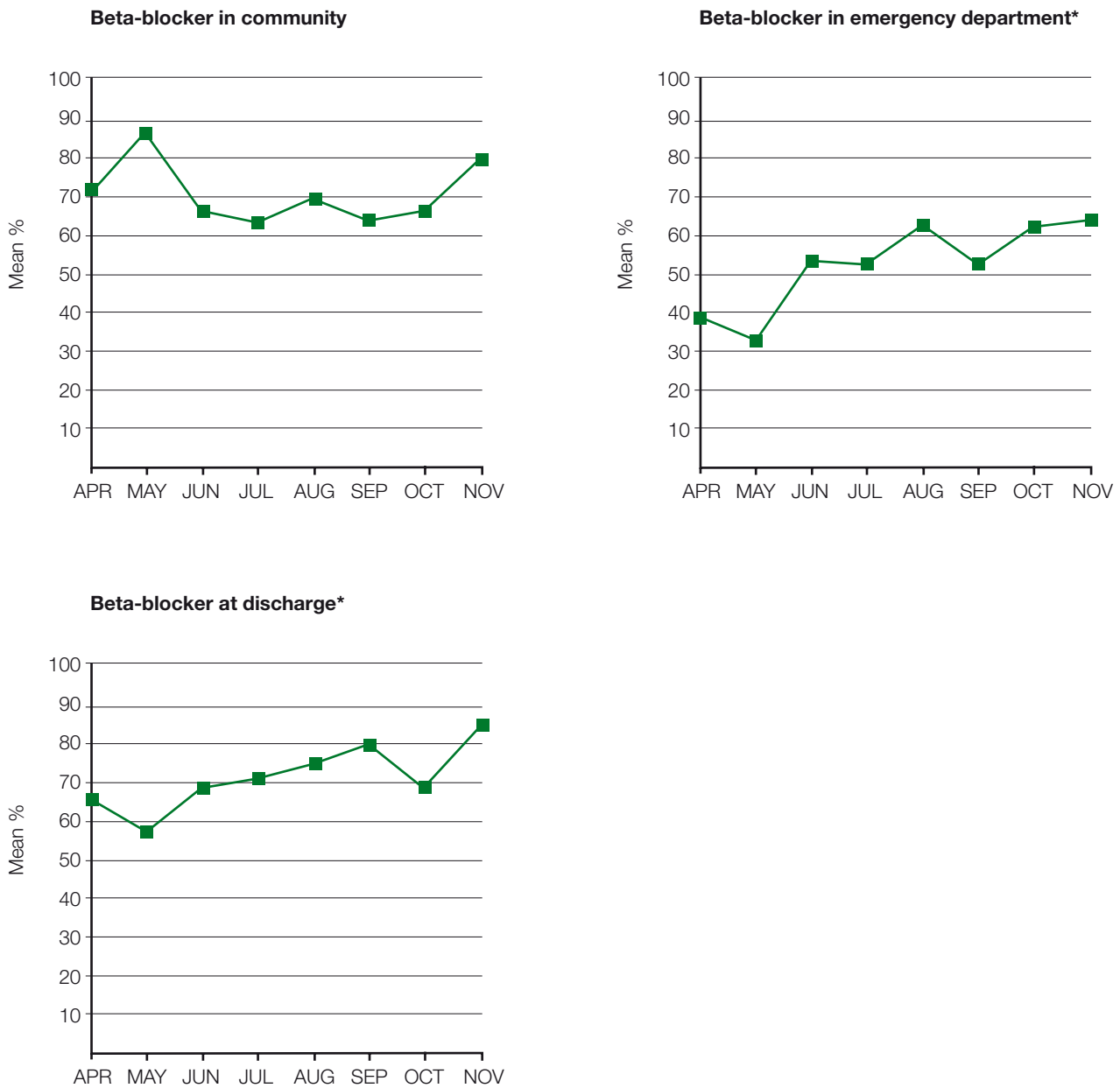
\* Significance P<0.05 change per month.

Figure A5.3 Heart Failure ACE inhibitors provided in the community, emergency department and at discharge



\* Significance P<0.05 change per month.

Figure A5.4 Heart failure beta-blocker approved in the community, emergency department and at discharge



\* Significance P<0.05 change per month.