

Centre for Remote Health

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CARPA Standard Treatment Manual 4th Edition Evaluation Report

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1. Introduction

In 1985, 'a mob of bush practitioners with fire in their bellies' established the Central Australian Remote Practitioners Association Working Group to establish standards of treatment across all remote clinics (Hope 2000).

The result was the Central Australian Remote Practitioners Association Standard Treatment Manual (CARPA STM) which provides evidence-based best practice to the multidisciplinary remote health workforce in the Northern Territory. It sits in all consulting and treatment rooms of government and non-government remote health services in Central Australia and the Top End. The most recent edition is the 4th edition, published in 2003.

Each of the four editions has been reviewed and rewritten, taking into consideration updated best practice, workforce needs and epidemiological trends. The 4th edition was greatly altered, with an expanded content that reflected the increased prevalence of chronic diseases. Several companion manuals were also developed. These include:

- Council of Remote Area Nurses Association (CRANA) Procedures Manual
- CARPA STM Reference Book
- Aboriginal Health Workers (AHW) Medicines Book

This evaluation aimed to assess the content and practical use of the CARPA STM and its companion manuals, building on the work done in previous evaluations in 1993 and 2001. It was funded by the Northern Territory Department of Health and Community Services (DHCS).

The results of the evaluation will be used to inform the CARPA editorial committee for the CARPA STM 5th edition.

2. Background

‘Within the shifting sand, a rock stands’. This is a quote from a registered nurse working in a remote community 300 km from Alice Springs, referring to how she perceives the CARPA STM. The ‘shifting sand’ describes the transient context of remote health, resulting from geographical and social isolation, a diverse multidisciplinary workforce, high staff turnover, working within a variety of health service models, and coping with a lack of resources, training and supervision. This is combined with work with a highly mobile Indigenous community, and coping with the constant need for temporary agency staff. This transience of remote health practice originally motivated members of the Central Australian Rural Practitioners Association (CARPA) to ‘produce a comprehensive STM [Standard Treatment Manual] that would provide a unified approach to the management of common health problems in the region’ (Williams 1993). It resulted in the CARPA STM 1st edition in 1991.

The CARPA STM can be described as the foundation that underpins evidence-based best practice for remote health clinics in Central Australia and the Top End. It has been the catalyst for all remote health services to develop quality assurance systems, which include service productivity, human resource systems, information technology, and monitoring of best practice procedures and protocols. It also enabled some remote health services to achieve national accreditation standards. The CARPA STM has established the health care standard for remote communities, becoming an institutionalised expectation within the remote workforce. It has gained an international reputation, and recognition by the Office of Aboriginal and Torres Strait Islander Health. In all medical swags, every community box, every Royal Flying Doctor Service plane, each bush ambulance and remote clinic, there is a CARPA STM providing best practice guidance to remote practitioners.

2.1 Previous evaluations

The 1st edition of the CARPA STM was funded by the Rural Health Support Education and Training Program, and published in 1991. It was evaluated in 1993 by Dr Nicholas Williams. This evaluation provided the first understanding of the STM’s wide coverage and its impact on remote practitioners, including AHWs, RANs, doctors, pharmacists, medical students and visiting health professionals. Use of and compliance with the protocols was very high. In the early 1990s, systems to support staff compliance with the CARPA STM were added to health service policy, employment contracts and job descriptions. The then Territory Health Services endorsed the CARPA STM for use in all remote clinics throughout the Northern Territory in 1998.

The CARPA STM 2nd edition was published in 1994, followed by the 3rd edition in 1997. A qualitative evaluation of the 3rd edition was conducted by Catherine Hampton and Caroline Fallon in 2001. This evaluation concluded that the CARPA STM had ‘widespread acceptance’ and ‘remains a vital tool in the provision of health care for staff working in isolated conditions’ (Hampton & Fallon 2001). By this time, all health services had CARPA STM policies, clauses in contracts, and an expectation by health practitioners that compliance with the CARPA STM would provide medico-legal protection from their employers.

The evaluation also found that ‘There has been insufficient understanding by managers of the level of training and support that is required to maintain the effectiveness of the manual’ (Hampton & Fallon 2001). Some remote practitioners lacked sufficient skills to navigate the STM effectively, understand the protocols, and then confidently implement best practice.

Both evaluations (Williams 1993, Hampton & Fallon 2001) recommended ongoing support, orientation and training for staff in the use of the STM. They also recommended strengthening the ability of AHWs to use the CARPA STM, by developing AHW subcommittees to the CARPA editorial committee and accessing expert advice regarding AHW language, literacy and numeracy. Concerns about the literacy skills of Aboriginal health workers raised doubts about

the multidisciplinary reach of the CARPA STM. However, in both evaluations, all staff stated that it was essential in remote health for all disciplines to be on the 'same page' and have one manual for treatment practices. The National Rural Health Alliance has cited several examples of barriers to being on the 'same page', referring to 'traditional hierarchical structures, the demarcation between health professionals and the resistance of middle management and clinicians' as some of the stumbling blocks on the road to best practice (National Rural Health Alliance 1997).

In 2002, Dr Rodney G Mitchell evaluated the DR ABC: Emergencies and Management of Injuries STM Guidelines. He found that registered nurses read and used the DR ABC, Aboriginal health workers found them 'too difficult to understand', and medical officers reported little use of the guidelines (Mitchell 2002). He concluded that 'the overall impact of the guidelines is dependent on their successful broader integration with other aspects of clinical care, including peer review, continuing medical education and QA' (Mitchell 2002).

2.2 Best practice and quality assurance

Evidence-based best practice is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. It means integrating individual clinical expertise with the best available external clinical evidence based on systematic research. Individual clinical expertise refers to 'the proficiency and judgment that individual clinicians acquire through clinical experience' (Muir Gray 2001).

Quality assurance is the process of applying performance standards to the health service. The National Rural Health Alliance (1997) describes the three critical drivers of best practice that can assist rural health services in improving health care delivery as:

- benchmarking
- customer/client focus, and
- staff empowerment

Evidence of these drivers is found in the Quality Assurance Program developed by the Central Australian Aboriginal Congress (CAAC) in 1994. This program includes a file audit (benchmarking), patient consultation (client focus), staffing discussions, reporting and feedback processes (staff empowerment). 'A major benefit is that it is a built-in internal system rather than a process applied sporadically' (Mawby 2002). CAAC have built their clinical practice from the CARPA STM, creating a system that values and measures Indigenous health practice, with an expectation of continuous training.

An external quality assurance framework, the Audit and Best Practice for Chronic Disease (ABCD) Project, provides an action-research, annual cycle of assessment, feedback and workshops to develop a best practice support system within health services. This project commenced in the Top End in 2002 and Central Australia in 2006. It has produced statistical evidence of the improvement in health care through a combination of benchmarking, client focus and staff empowerment. This project also relied on the CARPA STM.

2.3 Evaluation of the 4th edition

The CARPA STM is the 'rock' but also the 'old oak', with branches sprouting in all directions. Since 2000, many systems have grown from the CARPA STM base. These include:

- Quality Assurance and Best Practice Program in the DHCS Remote Health Services Chronic Disease Program
- Growth Awareness and Action Project
- Tri-state Sexually Transmitted Infection Project

- Audit and Best Practice for Chronic Disease (ABCD) Project

Each of these systems or branches has used the CARPA STM protocols to address population health needs, and then developed a range of packages, folders, growth and management charts, posters, recall and monitoring systems, all designed to guide or monitor remote health practitioners in using evidence-based health care effectively.

Alongside the CARPA STM are several companion manuals. These include the:

- Council of Remote Area Nurses Association (CRANA) Procedures Manual
- CARPA STM Reference Book
- Aboriginal Health Workers Medicines Book
- Women's Business Manual (Congress Alukura and Nganampa Health Service)

Each manual is specifically cross-referenced to the CARPA STM, expanding the support and education opportunities for remote health practitioners, while adding volumes to the clinic reference shelf.

An essential element of this evaluation is to examine how the multidisciplinary remote health workforce has adapted to this compendium of manuals. Other issues include how Aboriginal health workers have adapted to the changes in the 4th edition and companion manuals, the role of the CARPA STM for medical practitioners, and how a 'cookbook style' works in conjunction with individual clinical expertise and the patient's choice. This evaluation mirrors the 1993 Williams evaluation with both a quantitative file audit and a qualitative inquiry. It has provided the opportunity to revisit target groups in 2007, explore how each discipline has adapted to the changing health trends, information technology and clinical equipment and ask 'What do you need from the CARPA STM 5th edition?'

3. Methods

The evaluation of the CARPA STM 4th edition and companion manuals aimed to:

1. assess the content and practical use of the protocols in the CARPA STM, with the aim of informing their update for the 5th edition
2. assess compliance to the CARPA STM protocols using the tracer conditions of chronic disease, sexually transmitted infection in adult males, urinary tract infections in children, and anaemia in children
3. assess the role of the companion manuals ie the CARPA STM Reference Book, CRANA Procedures Manual and the AHW Medicines Book, and whether cross-referencing is useful
4. assess the CARPA STM's distribution, orientation and protocol update processes

The evaluation utilised a cross sectional design, using both quantitative and qualitative methods to determine the usefulness and appropriateness of the CARPA STM and companion manuals for all users including doctors, AHWs, RANs and health managers. By simultaneously measuring target group use, compliance with the CARPA STM protocols and user responses, it was possible to gain a quantitative snapshot of the frequency of protocol use, analysis of remote clinical practice plus an understanding of why health practitioners either use or do not use the CARPA STM, and how they have adapted to companion manuals. The stakeholder health manager interview sheet (see Appendix 2) covered questions relating to specific organisational requirements from the CARPA STM and the support systems for its use.

3.1 Evaluation team

The evaluation team consisted of an Aboriginal Health Worker/researcher, Ricky Mentha, and two Senior Research Fellows, Maxine Chaseling (Public Health) and Christine Davey (Remote Health). The reference group consisted of Professor John Wakerman, Sabina Knight and Fran Vaughan.

3.2 Research ethics

The evaluation received ethical approval from the Central Australian Human Research Ethics Committee and the Human Research Ethics Committee of the NT Department of Health and Community Services and Menzies School of Health Research.

3.3 Evaluation sites

The evaluation was carried out in Central Australia and the Top End of the Northern Territory, covering an area of 1.3 million kms for a population of 90,000 serviced by 81 remote health clinics. The project took place in Central Australia during February and March 2007, proceeding through the Top End at the culmination of the wet season during April and May 2007. Twenty-seven remote health clinics participated; these represented the five health regions of the Northern Territory (Darwin, Darwin Rural, Alice Springs, Katherine and Barkly) (see Table 1).

Central Australia	Top End
13 clinics, of which: <ul style="list-style-type: none">• 7 are community controlled• 6 are government	14 clinics, of which: <ul style="list-style-type: none">• 8 are community controlled• 6 are government

Table 1. Clinics sites and health service models

3.4 Evaluation participants and sample size

A total of 122 remote health practitioners participated in the evaluation. The selection criteria included:

5. remote health practitioners experienced in the use of the CARPA STM 4th edition
6. health educators who train health practitioners in the use of the CARPA STM 4th edition
7. health service managers supervising staff using the CARPA STM 4th edition

Participants were interviewed or participated in focus groups held at the clinic sites. They represented six health disciplines (see Table 2).

Aboriginal health workers	Remote area nurses	Medical practitioners	Managers	Educators	Pharmacists
45	42	15	14	4	1

Table 2. Health disciplines of participants

3.5 Data collection components

Data collection consisted of five components: case file audits, clinic observations, remote practitioner interviews, focus groups, and management SWOT analysis.

3.5.1 Case file audits

Case file audits were conducted in 20 of the 27 participating clinics. All participating health services were highly supportive and contacted the clinic managers to introduce the evaluation and the team. Clinic visits and staff interviews, focus groups and case file audits were scheduled to avoid peak clinic times.

The tracer conditions audited were:

1. anaemia in children (under 12 years)
2. urinary tract infection in children (under 12 years)
3. gonorrhoea and chlamydia in adult men
4. hypertension
5. hyperlipidaemia
6. renal disease
7. type 2 diabetes mellitus
8. coronary heart disease

The first three tracer conditions listed above had been used by Williams in 1993 and were consequently used as a 'yardstick' to measure changes in compliance with the CARPA STM protocols between 1993 and 2007.

A significant change since the Williams' evaluation, when acute and communicable diseases dominated the need for the CARPA STM, has been that remote practitioners are now managing a dramatic increase in the prevalence of chronic diseases. The CARPA STM 4th edition included a chronic disease section for the first time, and provided the chronic disease protocols that enabled case file auditing.

File lists for tracer conditions were sourced from a combination of agencies. Western Pathology results provided lists for urinary tract infections in children and sexually transmitted infections for men in the Top End. The Growth Awareness and Action Project provided lists of children with anaemia. The Chronic Disease Recall List enabled hyperlipidaemia, hypertension, renal disease, diabetes and coronary heart disease to be audited. Data on sexually transmitted infection in Central Australian men were provided by the Tri-State Sexually Transmitted Infection Project.

Using codes, the tracer-specific audit forms were completed using a 'yes' or 'no' response to compliance with the protocol. Data were then compiled from all audit forms onto spreadsheets, creating clinic totals, regional totals and Territory totals before de-identifying and presenting the data in graphs for analysis.

3.5.2 Clinic observations

Direct observations were conducted in each clinic to locate the CARPA STM and companion manuals. The following conditions were noted:

- wear and tear
- condition of the covers and pages
- which edition staff were using
- whether any stickers were attached or if there was writing on the STM
- if 'protocol posters' were displayed eg Chronic Disease Management Plan
- if clinic staff were actively using the Additional Protocol Folder (provided by NT DHCS Remote Health Services)

3.5.3 Remote practitioner interviews

Each participant was given an information sheet (see Appendix 3) about the aims and objectives of the evaluation and was then asked to complete a participant consent form.

A semi-structured interview guide was used, with questions covering the clinical role of the STM and companion manuals, policy, section use, use of protocols, 'user-friendly measure' and opinions about training and the use of an electronic version of the STM (see Appendix 4).

3.5.4 Focus groups

The five focus groups consisted of 15 Aboriginal health workers, 13 registered nurses and six medical practitioners. The groups took place in five different clinics, three government and two community controlled, and were located in Central Australia and the Top End. The smallest group consisted of three participants and the largest group consisted of 18 participants. The groups focused on the role, use, strengths and weakness of the CARPA STM, protocols requiring updating, the use of companion manuals, and training given and required for the CARPA STM and companion manuals to be used effectively. Information was recorded on a focus group summary form (see Appendix 5).

3.5.5 Management SWOT analysis (strengths, weaknesses, opportunities, threats)

A SWOT analysis was conducted with 11 managers and four educators to develop a broad awareness, aimed at closing communication gaps and increasing understanding about use of the CARPA STM in a health service. The strengths and weaknesses provided an analysis of internal issues, while the opportunities and threats provided an opportunity to analyse external issues relating to the CARPA STM.

3.6 Data entry and analysis

Prior to undertaking fieldwork, the evaluation team developed a preliminary list of codes to identify core issues (see Appendix 7). These codes were used and adapted during the fieldwork. The four aims of the evaluation were used to thematically analyse the qualitative data collected, stimulating discussion within the research team with a view to formulating recommendations.

4. Results

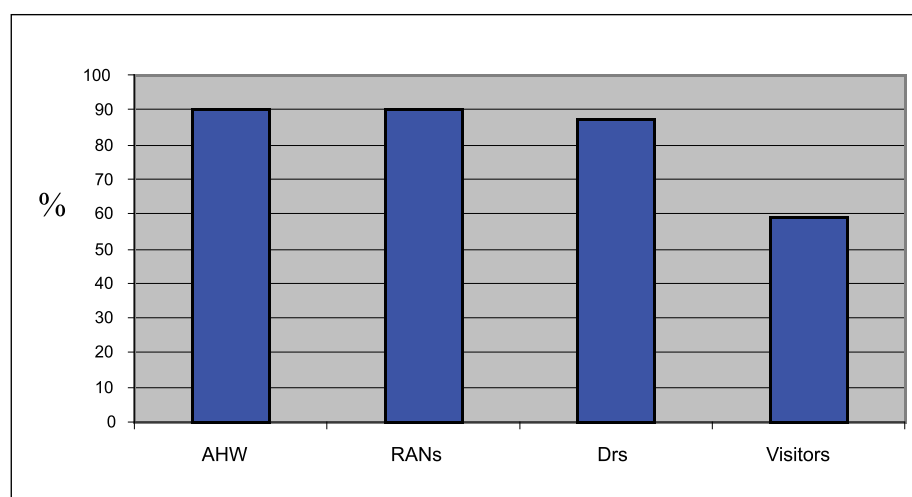
The evaluation objectives – content and practical use; compliance to CARPA STM protocols; the role of the companion manuals; and the CARPA STM distribution, orientation and protocol update processes – have been used to structure the qualitative and quantitative results.

4.1 Objective one: content and practical use of the CARPA STM

This objective involved assessing the content and practical use of the protocols in the CARPA STM 4th edition with the aim of informing their update for the 5th edition.

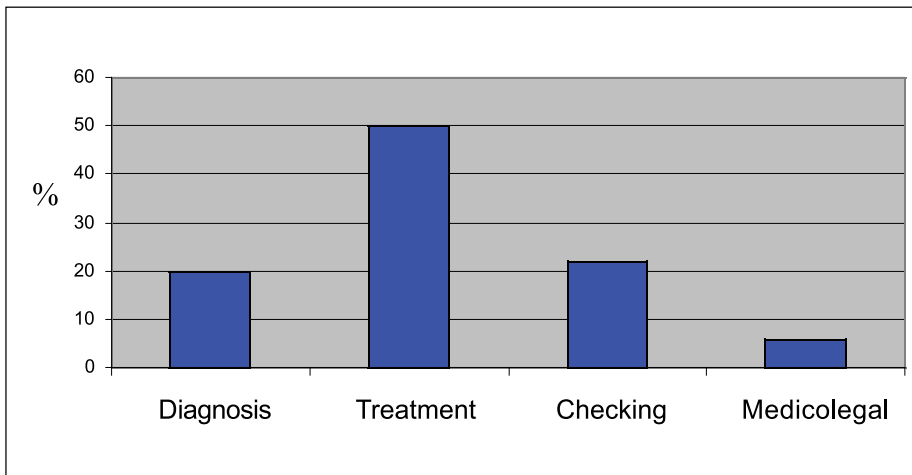
4.1.1 Use of the CARPA STM

Forty-five Aboriginal health workers, 41 remote area nurses and 14 medical practitioners provided information about their use of the CARPA STM. Of these, 90% of Aboriginal health workers and remote area nurses stated that they used the STM many times a day, with 85% of medical practitioners stating that they used the STM on a regular basis. In addition, most visiting health professionals stated that they used the STM while working in remote health.



Graph 1. Proportion of practitioners who regularly use the CARPA STM

Participants were also asked why they referred to the CARPA STM. The Territory-wide response was ‘treatment’, followed by ‘checking’ on a treatment or diagnosis, then seeking information to make a ‘diagnosis’. A small number of remote practitioners used the STM for medico-legal reasons, while only 6% of Top End practitioners used the manual for educational purposes.



Graph 2. Main reasons for referring to the CARPA STM

4.1.2 Role of the CARPA STM

Statements by remote health practitioners about the role of the CARPA STM included:

- ‘a support and guide tool, especially if there are no doctors for staff to consult’
- ‘the CARPA STM governs a standard of practice’
- ‘provides evidence-based best practice in a simple, easy to read format’
- ‘it was my best friend when I first arrived in remote. If it wasn’t in the CARPA STM, it just didn’t get done’

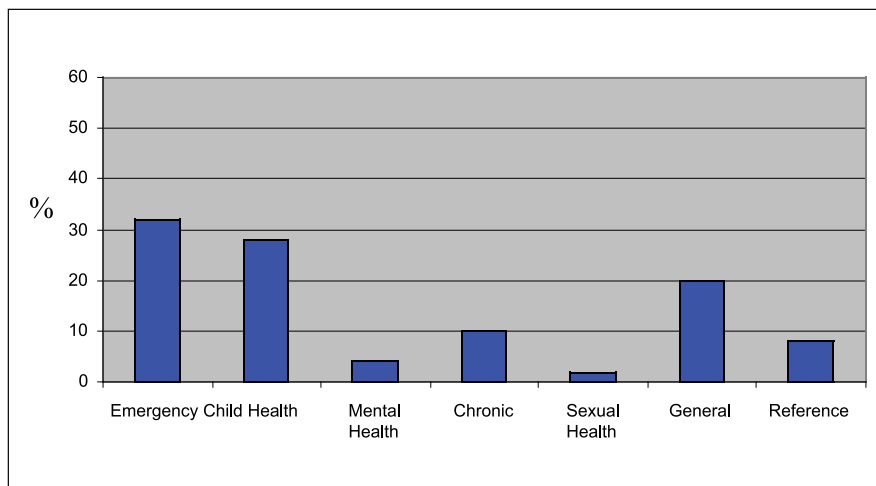
Health service managers and educators referred to the CARPA STM in similar terms:

- ‘strategic guidance map for best practice’
- ‘brings out the grey into black and white’
- ‘gets everyone on to the same page’

It seems reasonable, therefore, to state that the CARPA STM creates a collaborative expectation of standard practice through all disciplines.

4.1.3 What sections are most used

In response to the question, ‘When using the CARPA STM, what are the main sections that you use? (list 1 to 7)’, 32% of practitioners’ first response was for emergency and assessment. This was closely followed by child health (28%), then general (20%), chronic disease (10%), reference (8%), sexual health (2%) and mental health (2%).



Graph 3. When using the CARPA STM what are the main sections that you use (list 1 to 7)?

The chronic disease and mental health sections were added in the 4th edition and were individually explored. Participants were asked, ‘Have you used the chronic disease and mental health sections and what are the reasons that you use the sections?’ In the responses, 18% of participants stated that they used the chronic disease section on a regular basis. Reasons included: ‘I check what tests to conduct on chronic disease patients’ and ‘We check the flow charts as the patient progresses from one stage to another’. In Central Australia, 50% of visited clinics had a chronic disease management plan inserted to chronic disease patient files, while 60% of clinics had the chronic disease recall poster on the wall.

The mental health section was the least used, with 90% of registered nurses stating that they call the Mental Health Team to recommend treatment, due to the priority of staff safety. 80% of Aboriginal health workers stated that they call the Mental Health Team but also consult the CARPA STM for advice eg ‘I check up on suicide, because my nephew was talking about it’, ‘I live in this community and I found that the alcohol withdrawal chart is good and also good to read up on depression’.

4.1.4 Content and presentation

The majority of remote practitioners identified the CARPA STM content and presentation as a strength, due to the ‘clear, concise, well set out’ format providing all disciplines with a ‘simple cookbook style’. The size and portability of the manual was a distinct strength, suitable for use in all remote clinical settings. The purple cover binding was a weakness because with constant use the cover rapidly cracked and quickly fell apart. The index was found to be a weakness as staff had difficulty finding specific diagnoses, which may have been indexed using different terminology.

When comparing the 4th edition with the 3rd edition, nurses and Aboriginal health workers stated that the 4th edition was ‘too wordy’, ‘too busy’, ‘much bigger and congested, that I couldn’t find things’, referring to the increased number of words on each page and the additional sections within the manual.

The evaluation explored the content differences between the 3rd and 4th editions, and found that the 3rd edition in 1997 consisted of four sections called How to diagnose, Treatment guidelines, How to do, Top-End protocols. The 4th edition in 2003 was changed into seven disease-specific sections. The 3rd edition only cross-referenced to the Women’s Business Manual, while the 4th edition cross-referenced to the Women’s Business Manual, CRANA Procedures Manual and CARPA STM Reference Book.

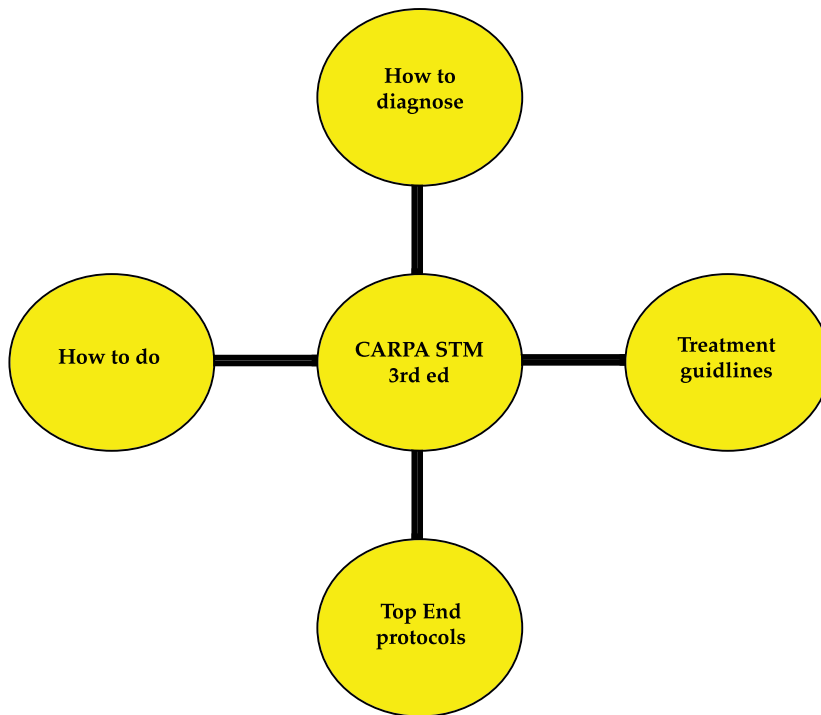


Figure 1. Content of CARPA STM 3rd edition 1997

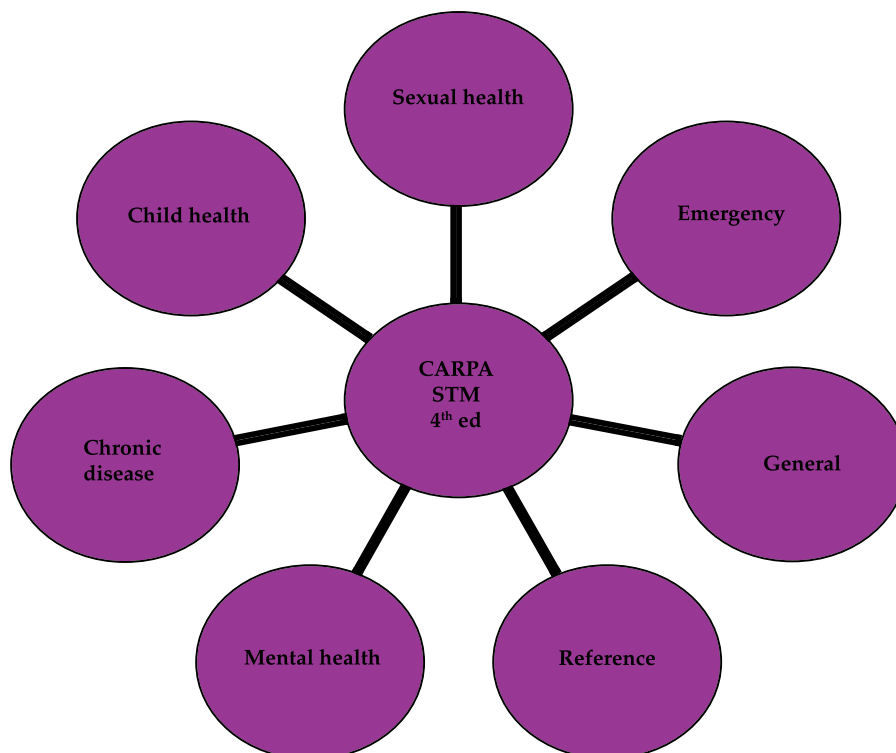


Figure 2. Content of CARPA STM 4th edition 2003

4.1.5 Target group needs

The CARPA STM and companion manuals need to address the ongoing clinical management needs for common and clinically significant conditions in remote areas. For the manual to be credible, it needs to offer one set of 'best practice guidelines for everyone,' that are 'clear, concise and easy to read'. At interview, many practitioners said that the biggest threat to the CARPA STM was that it would become 'too big' or 'too complex', which would make it difficult for staff to become familiar with. This is balanced with practitioners wanting a reference for all conditions they encounter. One experienced remote medical practitioner stated 'in remote health clinics, staff are from emergency backgrounds rather than primary health care, [and] training is the key to a usable CARPA'.

Common themes in all interview groups were orientation, ongoing education and training to the CARPA STM and companion manuals. Practitioners who had used the 3rd edition and not been trained in the 4th edition reported struggling with the transition, and a small number of staff in two Central Australian clinics reported referring to the 3rd edition.

Overwhelmingly, remote practitioners held the CARPA STM and companion manuals in high regard and were keen to contribute to their ongoing revision. They were keen for the manual to remain owned by the remote health community. A senior medical practitioner was 'very impressed how the CARPA group has achieved agreement between all parties to produce standard procedures'.

4.1.6 User satisfaction

To engage with all disciplines and a wide range of literacy skills, 95% of participants felt that the CARPA STM should be visually clear and simple, using as many visual diagrams and flow charts as possible. A small number of participants (5%), all registered nurses, stated that the CARPA STM was 'too basic and not professional enough in terminology'. A Top End registered nurse with 30 years experience stated that 'I've heard nurses say that the CARPA STM is too basic and below their professional expertise. I think that is professional snobbery and they have narrowed their focus, forgetting about the big picture of remote health, the empowerment of our AHWs'.

4.1.7 Policy and medico-legal cover

All government and community controlled health services in the Northern Territory have policies directing their staff to use the CARPA STM. When asked, 80% of registered nurses and Aboriginal health workers were aware of this health service policy, as they had signed job contracts that stated they would use the CARPA STM, and 88% of medical practitioners stated they knew of their organisation's policy about the use of the CARPA STM. 'Official policy is that you will follow CARPA STM. If the CARPA STM is not used, then you are not covered by DHCS. There is an expectation by all staff that everyone will use the CARPA STM and WBM'. 'Training our AHWs, we tell them to do the SODAF for documentation purposes and to follow the CARPA STM for treating all conditions. It covers them legally. It keeps them covered if any diagnosis or any issue was questioned'. 'Medical practitioners do have a right to go outside but the expectation of the health service is that all staff must use it'.

4.2 Objective two: compliance with the protocols

This objective involved assessing compliance with the CARPA STM protocols using the tracer conditions of chronic disease, sexually transmitted infection in adult males, urinary tract infections in children, and anaemia in children

To measure health professionals' compliance, clinic case file audits were conducted in collaboration with existing health service monitoring systems in Central Australia and the Top End. The tracer conditions used for auditing were:

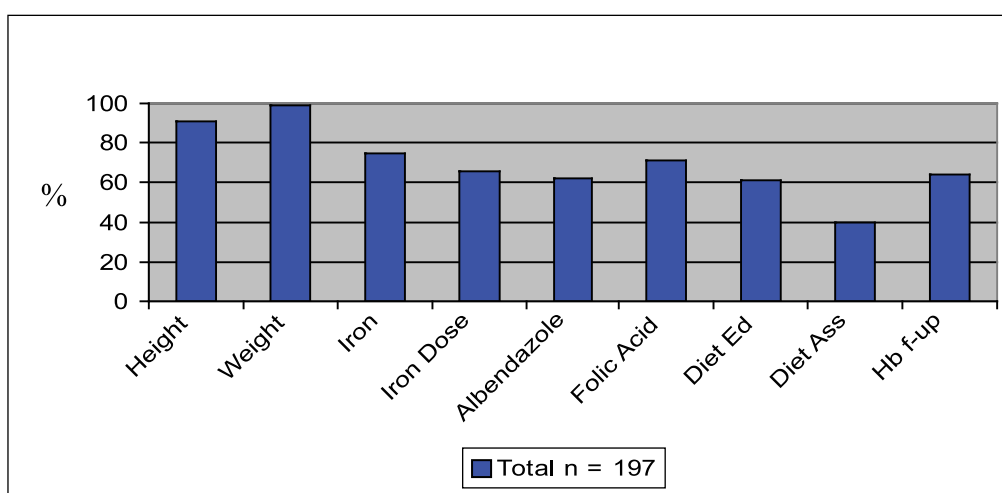
1. anaemia in children (under 12 years)
2. urinary tract infection in children (under 12 years)
3. gonorrhoea and chlamydia in adult men
4. hypertension
5. hyperlipidaemia
6. renal disease
7. type 2 diabetes
8. coronary heart disease

As part of the evaluation of the CARPA STM 1st edition in 1993, Williams carried out audits which included anaemia in children, urinary tract infection in children and sexually transmitted infection in men. These conditions were audited during this evaluation of the 4th edition to compare current compliance with the CARPA STM protocols relative to 14 years ago.

4.2.1 Anaemia in children under 12 years

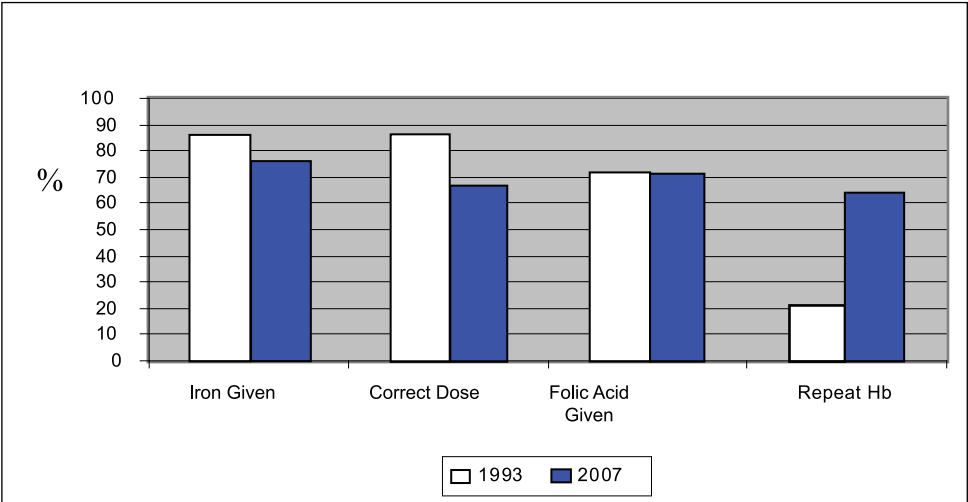
Case file audits of anaemia in children were conducted throughout Central Australia and the Top End, using the Growth Awareness and Action Project clinic list to detect case files of anaemic children (Haemoglobin (Hb) lower than 11g/dL). The results showed the degree of compliance to the protocol items (see Graph 4).

There was a high compliance rate for growth monitoring audit items – height and weight – and a similar regional compliance rate for iron treatment (73% in Central Australia and 75% in the Top End), with the complete dosage rate over the two regions resulting in an equal compliance rate of 66%. There is a compliance rate of 62% in the Top End for albendazole treatment for worm infection. Folic acid was to be administered to 48 children who had a Hb lower than 9g/dL, of whom 76% were treated. Diet education and diet assessment are relatively new items in the anaemia in children protocol, with Central Australia achieving a 26% higher compliance rate than the Top End. The Hb follow-up check conducted four weeks after treatment also identified a higher compliance rate of 79% in Central Australia compared with 64% in the Top End.



Graph 4. Anaemia in children: compliance to STM Protocol 2007: NT wide

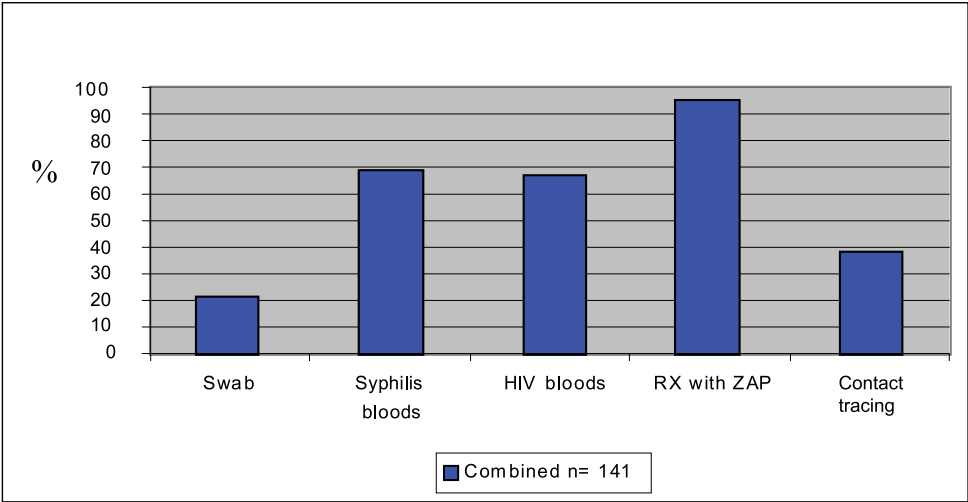
Since the evaluation of the 1st edition, the protocol has expanded to include growth monitoring, family participation in diet education, and the region specific treatment of albendazole in the Top End. Comparisons of compliance show a higher rate of iron treatment in 1993, 86%, compared with 74% in 2007, and a correct dosage compliance of 86% in 1993 compared with 66% in 2007 (Graph 5).



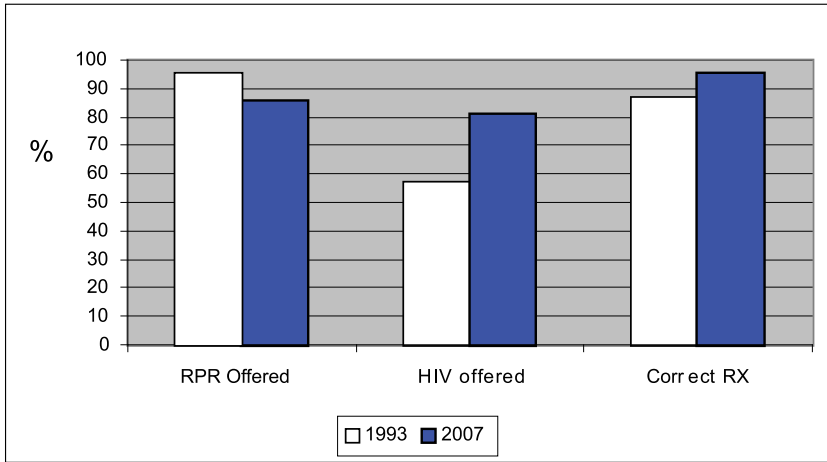
Graph 5. Anaemia in children: comparison 1993 to 2007

4.2.2 Sexually transmitted infections (gonorrhoea and chlamydia) in men

Compliance with the STI protocol for men is displayed in Graph 6. The low urethral swab rate is due to change in testing procedures, with urine PCR testing universally available. In 1993, urethral swabs were used to diagnose gonorrhoea and chlamydia, but were not audited. There were regional differences between Central Australia and the Top End. These included higher compliance in the Top End for syphilis testing (12% higher) and for HIV testing (10% higher). Treatment compliance was similar, but contact tracing was more prevalent in the Top End by 18%.



Graph 6. Sexually transmitted infection in men: compliance to CARPA STM protocol 2007: NT wide



Graph 7. Comparison of STI protocol compliance between 1993 and 2007

Comparisons between 1993 and 2007 found a higher compliance with syphilis serology testing (RPR) - 94.6% in 1993 compared to 85% in 2007. HIV testing had increased from 58% in 1993 to 82% in 2007. Compliance to correct treatment was also higher in 2007 (95%) compared to 1993 (86%).

4.2.3 Urinary tract infection (UTI) in children under 12 years

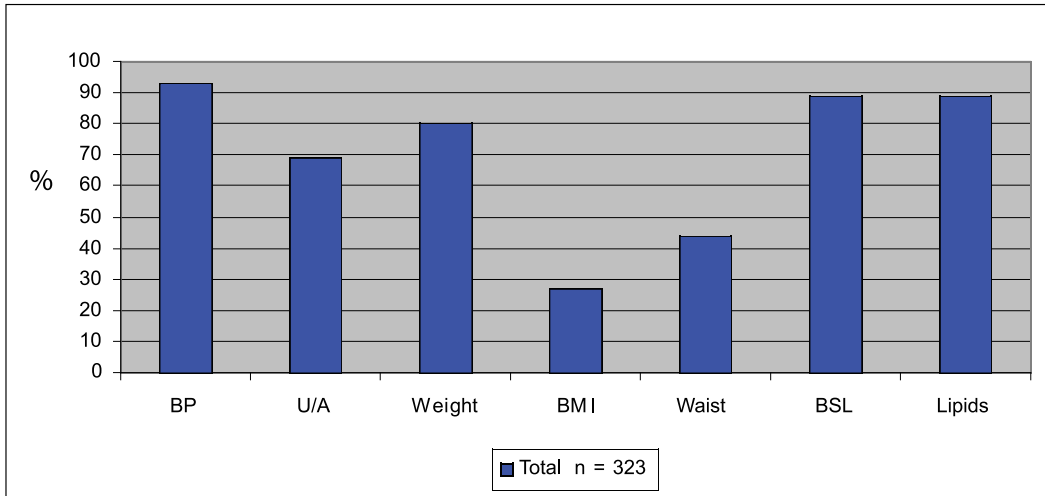
The number of reported, culture positive UTIs was much smaller than in 1993. The 2007 audit examined 99 files compared to 450 files in 1993. There was 100% use of dipstick urine testing. Due to changes over the years, only one section of the protocol could be compared to the 1993 audit. The use of antibiotics for treating UTIs in children showed a significant increase in 2007, with 91% of children given antibiotics compared to 25% in 1993.

4.2.4 Chronic disease audit results

Chronic disease audit results were generally comparable across the Top End and Central Australia. Differences are highlighted below. Chronic diseases were not audited by Williams in 1993.

4.2.5 Hypertension

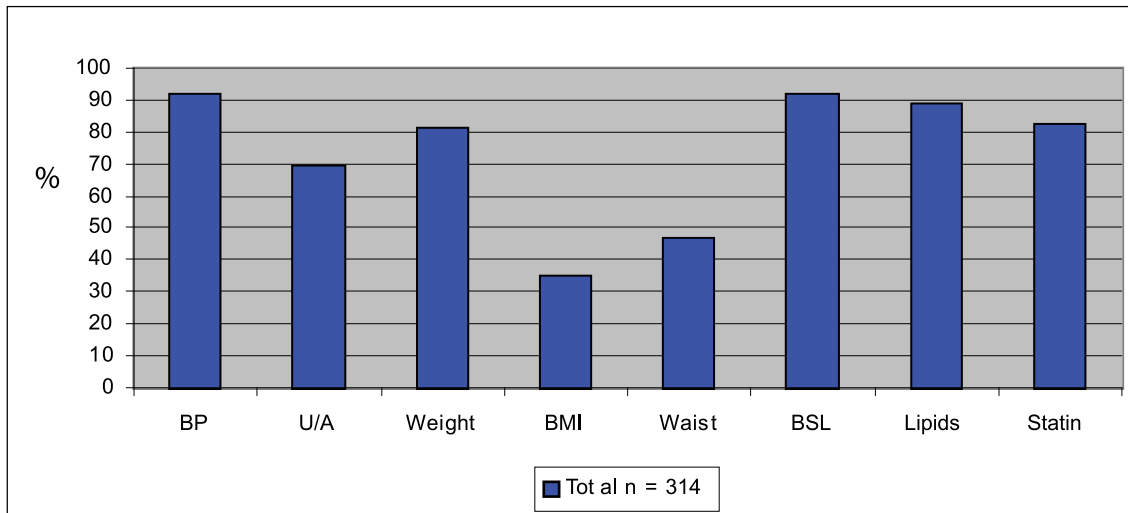
The Central Australian data were collected from 80 case files in five clinics. In the Top End data were supplied by the ABCD Project which provided results from 243 case files in 20 clinics. The results are displayed in Graph 8.



Graph 8. NT hypertension audit 2007

4.2.6 Hyperlipidaemia

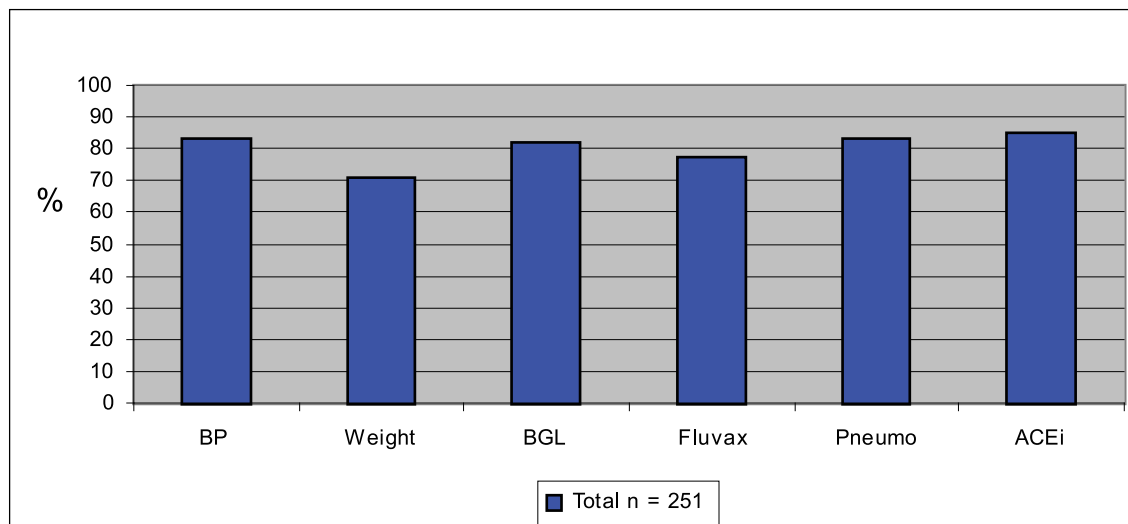
Central Australian data were collected from 100 case files in six clinics. Top End data were supplied by the ABCD Project which provided results from 214 case files in 20 clinics. The regional comparisons show a significant difference in the recording of BMI between the two regions, with the Top End showing compliance at over twice the rate (49%) as Central Australia (20%).



Graph 9. NT hyperlipidaemia audit 2007

4.2.7 Renal disease

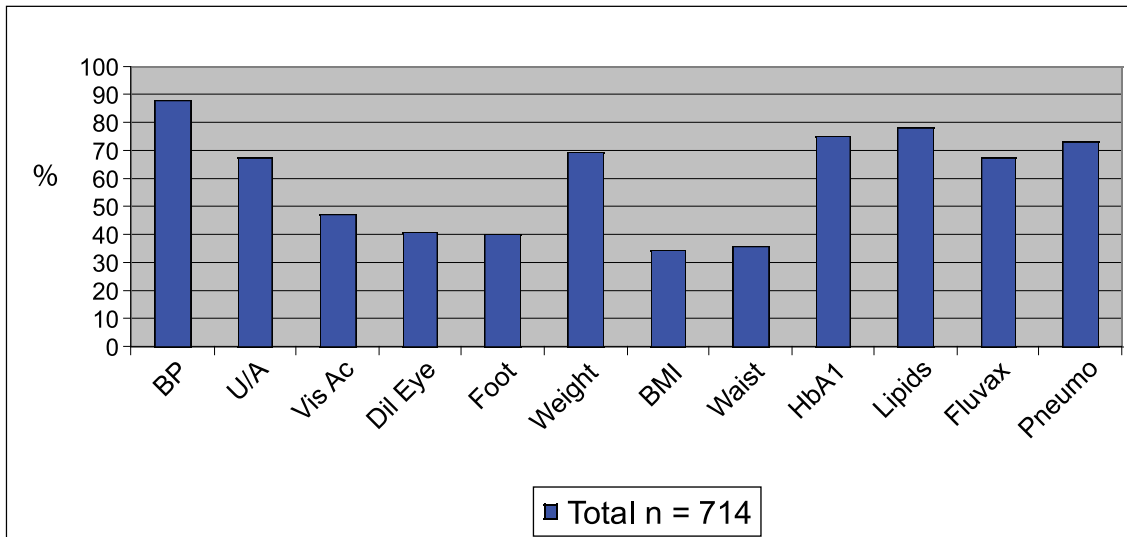
Central Australian data were collected from 48 case files in six clinics. Top End data were supplied by the ABCD Project which provided results from 203 case files in 20 clinics.



Graph 10. NT renal disease audit 2007

4.2.8 Type 2 diabetes

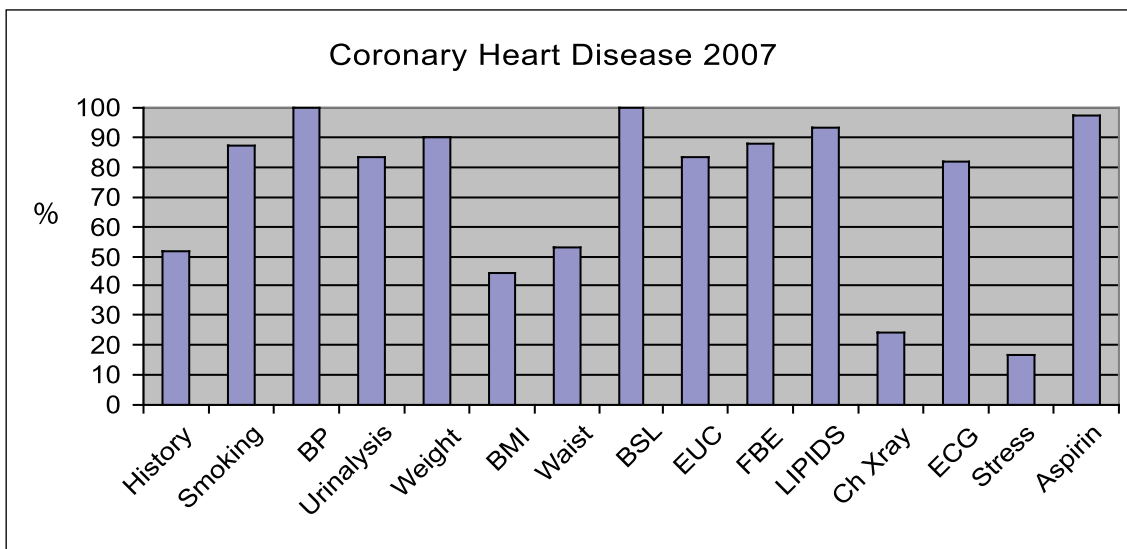
Central Australian data were collected from 141 case files in six clinics. Top End data were supplied by the ABCD Project which provided results from 573 case files in 20 clinics. Eye screening was poorly reported in both areas, with less than 50% of people having had eye checks in the previous 12 months.



Graph 11. NT diabetes audit 2007

4.2.9 Coronary heart disease

Central Australian data were collected from 15 case files in five clinics. Top End data were collected from the Danila Dilba clinic in Darwin from 12 case files. The ABCD Project provided no coronary heart disease data.



Graph 12. NT coronary heart disease audit 2007

4.3 Objective three: role of the companion manuals

This objective involved assessing the role of the CARPA STM companion manuals - the CARPA STM Reference Book, CRANA Procedures Manual and AHW Medicines Book, and whether cross-referencing is useful.

4.3.1 The CARPA STM companion manuals

This evaluation sought to demonstrate the relationship between the CARPA STM and the companion manuals. In 2001, the Council of Remote Area Nurses of Australia (CRANA) Procedures Manual 1st edition was published, followed by the CARPA STM 4th edition in 2003. These were followed by the CARPA STM Reference Book 1st edition and the Aboriginal Health Workers (AHW) Medicines Book 1st edition in 2004. Each manual is specifically cross-referenced to the CARPA STM, and the evaluation explored the capacity of all remote practitioners to cross-reference between the CARPA STM and companion manuals.

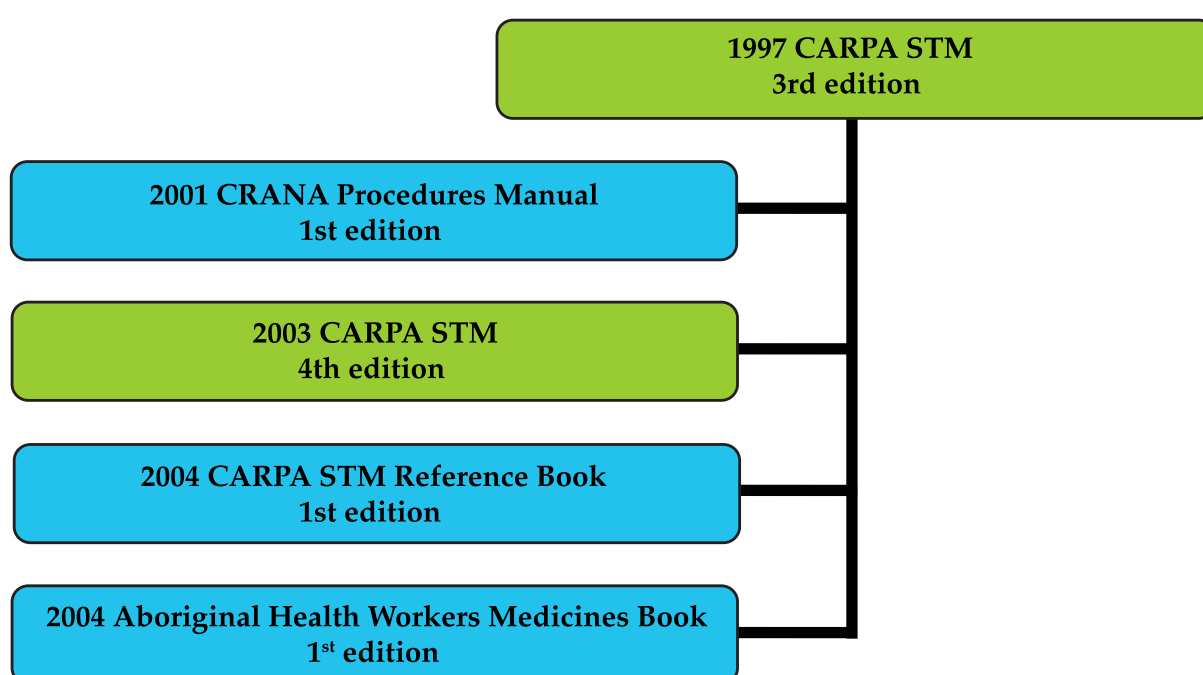


Figure 3. Development of the CARPA STM and companion manuals

4.3.2 What resources are remote practitioners using with the CARPA STM?

Each health service and professional discipline has a wide range of governing and reference information and education tools available for staff use. Use of different resources is variable across the disciplines. Many medical practitioners use handheld computers to access a constant flow of evidence-based, up-to-date information while also using a range of manuals. For example, a remote area doctor in the Alice Springs region uses the CARPA STM and the General Practice Manual 3rd edition by John Murtagh, but also accesses gpnotebook.co.uk and Google Images internet services. Nurses regularly use the CARPA STM, CRANA Procedures Manual and MIMS, while Aboriginal health workers use the CARPA STM and the AHW Medicines Book.

4.3.3 What resources are health services recommending for clinic staff?

The CARPA STM & WBM are consistently required as references across health services. However, practice is variable for other resources. Resources recommended by CARPA, NTDHCS and Nganampa Health Service are outlined in the tables below.

1. CARPA Standard Treatment Manual 4th edition
2. Women’s Business Manual (Congress Alukura and Nganampa Health Council)
3. CRANA Procedures Manual
4. Australian Immunisation Handbook

Table 3. Resources that CARPA recommends remote clinic staff use

1. CARPA Standard Treatment Manual 4th edition
2. Women’s Business Manual (Congress Alukura and Nganampa Health Council)
3. Australian Immunisation Handbook
4. Additional Protocol Folder

Table 4. Resources that NTDHCS instructs clinic staff to use

1. CARPA Standard Treatment Manual 4th edition
2. Women’s Business Manual (Congress Alukura and Nganampa Health Council)

Table 5: Resources that Nganampa Health Service instructs clinic staff to use

4.3.4 Ability of staff to cross-reference between manuals

All managers and educators interviewed doubted the ability of remote health staff to cross-reference between manuals, stating that ‘acute care does not give staff time to go from manual to manual’ and that staff would become frustrated if they opened the CARPA STM and were referred to the CARPA STM Reference Book. A nurse stated that ‘I get very annoyed when I open the STM and it tells me to go to another manual. I want the information in one source’, and ‘we need to know exactly what is in each manual as we do not have the time or the patience to search through many manuals while the patient is bleeding to death in front of us.’ Remote health practitioners in two Top End clinics had not heard of the Reference Book or the AHW Medicines Book. When questioned about cross-referencing, they responded ‘Cross-reference to what?’

4.3.5 The CARPA STM Reference Book as a companion to the STM

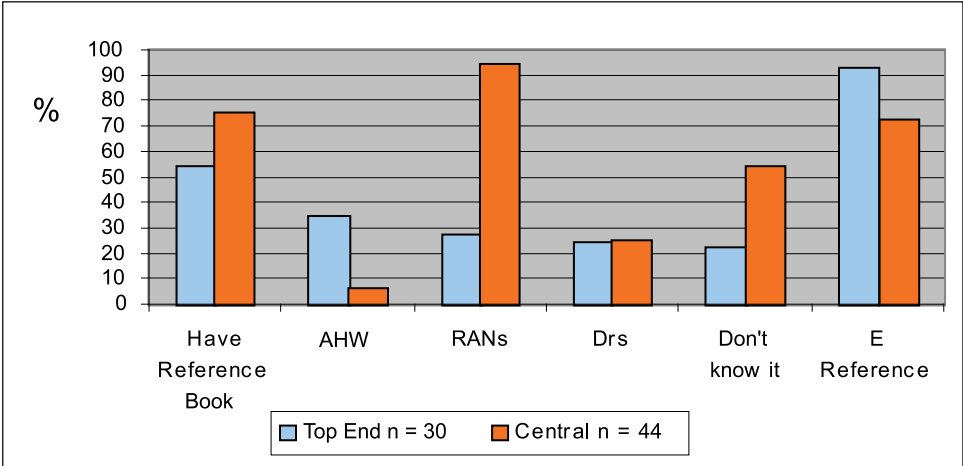
In 2004, the CARPA Reference Book was published to accompany the CARPA STM, providing ‘authority’ and the ‘rationale and evidence-base underlying each protocol, with particular attention to areas where the recommendations differ from what may be regarded as standard or best practice in other settings’ (Ewald 2004).

During the qualitative study, interviewees responded with a wide variety of answers to the following questions: Has the clinic got a CARPA STM Reference Book? Where is it kept? Who uses it? What is it used for?

Responses included:

- ‘Never heard of it!’
- ‘Use it for my study but never used it in the clinic’
- ‘I find the Reference Book a great read after I have had a difficult day, where maybe I was looking for treatment options or not happy with the treatment that I had given. I take it home, have a good read and feel better about it all.’

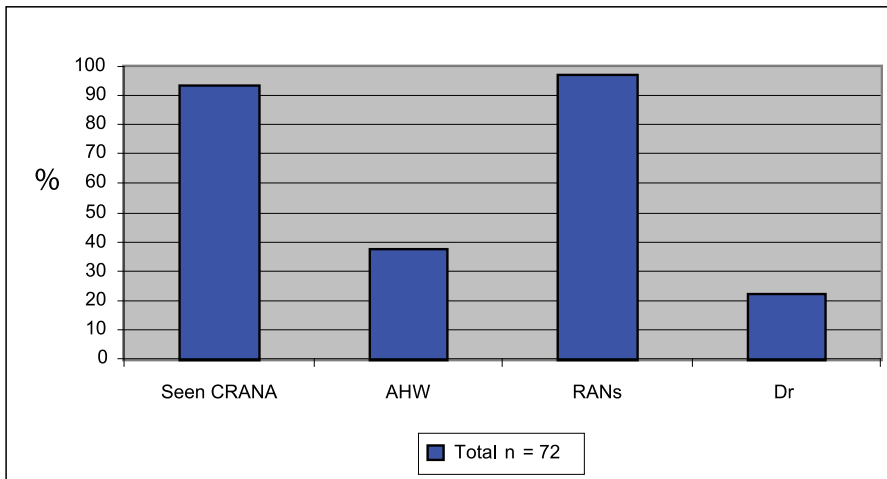
The Reference Book was found in 54% of Top End clinics and 74% of Central Australian clinics. Government clinics were more likely to have a Reference Book than community controlled clinics. The Reference Book was used predominantly by remote area nurses, with 50% of Reference Books in Central Australia found in the nurse’s home. There was a high degree of support for an electronic version.



Graph 13. Regional comparison of use of the CARPA STM Reference Book

4.3.6 The CRANA Procedures Manual as a companion to the CARPA STM

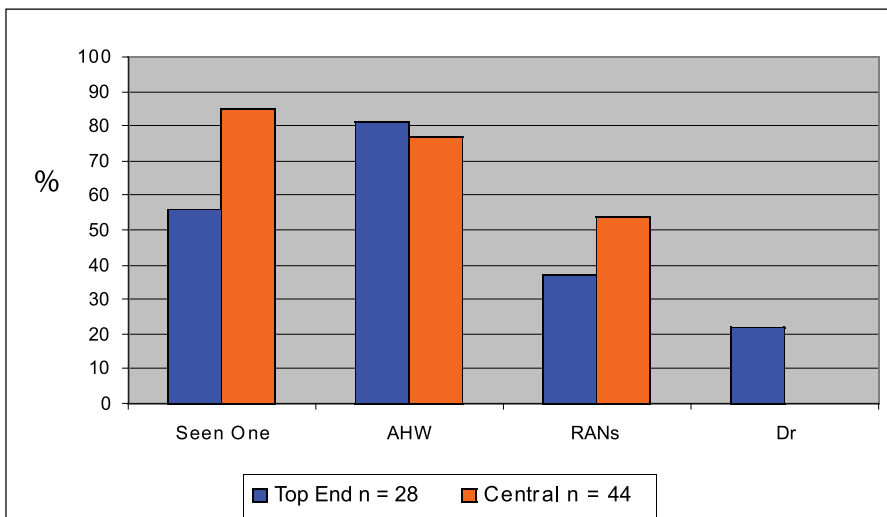
The CRANA Procedures Manual was published in 2001, enabling clinical procedures to be removed from the CARPA STM 4th edition. The Procedures Manual is aimed at providing best practice for clinical procedures. The evaluation showed that a large majority of nurses were confidently using the CRANA Procedures Manual: 94% of remote area nurses in Central Australia and 100% of remote area nurses in the Top End were using the CRANA Procedures Manual. Only 16% of Aboriginal health workers and 25% of doctors in Central Australia, and 57% of Aboriginal health workers and 43% of doctors in the Top End were using the CRANA manual. A high proportion of users in both regions were positively disposed to an electronic version.



Graph 14. Use of the CRANA Procedures Manual in the Northern Territory

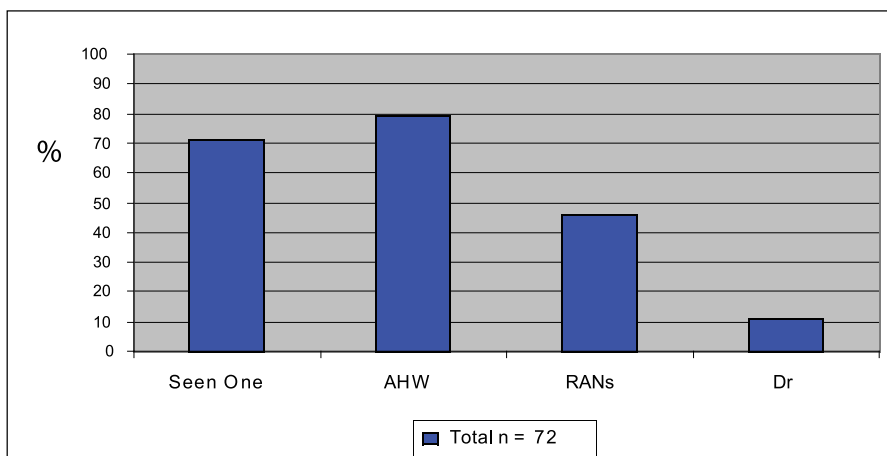
4.3.7 The AHW Medicines Book as a companion to the CARPA STM

In 2004, the AHW Medicines Book was published for Aboriginal health workers to provide an effective guide to understanding the use and effect of medicines, and to use as an education tool, teaching clients about self-management of medicines.



Graph 15. Regional comparison of use of the AHW Medicines Book

The AHW Medicines Book was being used well (primarily by Aboriginal health workers) in 85% of Central Australian clinics, but in only 56% of clinics in the Top End. The AHW Medicines Book was generally located in the pharmacy or clinic office. Aboriginal health workers in Central Australia who had received training in the use of the Medicines Book had all received their own copy and displayed ownership, understanding and motivation in using the manual with their clients. An Aboriginal health worker from Central Australia stated, 'This book is straight on. It shows my people how the medicine affects their own body and what to look for. They can really understand the illustrations. I'm happy to talk about it because I can also see the effects medicine has on the body too.' Aboriginal health workers from the Mental Health Team said, 'Where do we get this?' and 'This is so easy to understand. Why haven't we got this manual?' Users have embraced the simple use of illustrations and the format of 'telling a story'. Practitioners other than Aboriginal health workers have also requested to use the AHW Medicines Book.



Graph 16. Total results for use of the AHW Medicines Handbook in the Northern Territory

4.4 Objective four: distribution, orientation and protocol update processes

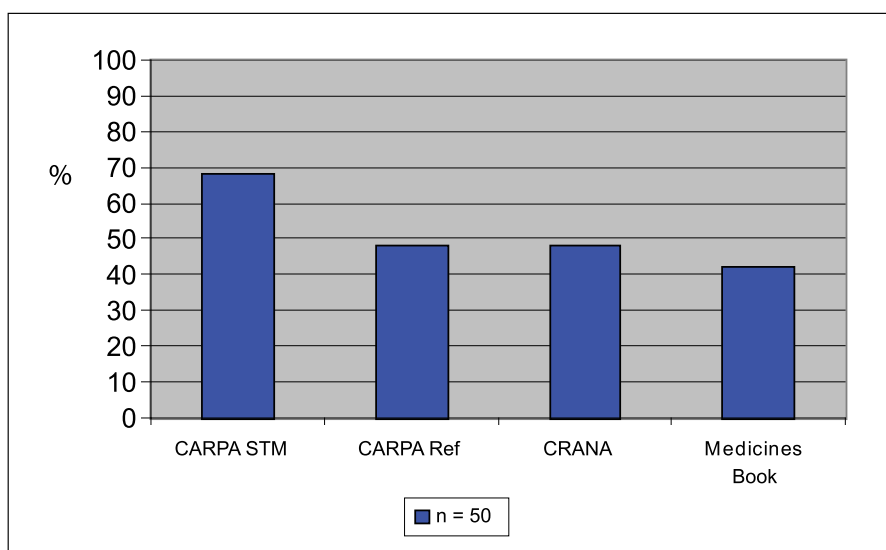
This objective involved assessing the distribution, orientation and protocol update processes for the CARPA STM.

4.4.1 Distribution

The Central Australian Division of Primary Health Care (CADPHC) is the chief distributor of the CARPA manuals. Its role in distribution includes updating and maintaining the CARPA website, and processing orders for the CARPA STM, Reference Book and Medicines Book. The CARPA STM is distributed to all remote health services in bulk. Each health service is then responsible for distribution to all health clinics.

4.4.2 Orientation to and training for the CARPA STM and companion manuals

At interview, nurses and Aboriginal health workers were asked if they had received training in the use of the CARPA STM 4th edition. Sixty percent had received no training, while 40% had received training during their orientation program. When asked if they would like to receive training, 68% of participants stated that they would, with 48% wanting training in the use of the CRANA Procedures Manual and 42% wanting training in the use of the AHW Medicines Book.



Graph 17. Proportion of remote practitioners desiring training

The managers and educators expressed a range of views about the role of the CARPA STM in 'on-the-job training'. Managers were aware that many remote health staff arrive at a clinic without receiving orientation to the manual and that one of the CARPA STM's strengths is that it provides a resource for 'on-the-job training'. One stated: 'Often old staff will greet new staff at the airstrip and hand over the CARPA STM and say "It's all in there. Don't lose it!"' Educators were aware of the STM's 'on-the-job training' value, but questioned whether the attitude of 'as long as they have the CARPA they will be fine' was a threat to the provision of high quality services and a weakness in the orientation training system. In the SWOT analysis, an educator stated: 'The easy part is writing the STM, while the essential element is empowering remote health practitioners to use the STM'. Educators identified orientation away from the acute clinic setting as an essential element in being able to use the CARPA STM – 'Guidelines are only as good as the people who read them. We have to be sure that staff can access the manual'.

A Central Australian Remote Development Health Service (CARDHS) educator who specialised in Aboriginal health worker training stated that it is possible for remote practitioners not to be trained in the use of the current CARPA STM if they had been orientated to the 3rd edition. 'Due to high staff turnover and the consequent high orientation need, staff that have been out in the field for a long time are expected to just pick up and use the new CARPA STM'.

Both managers and educators expressed concern about the capacity of Aboriginal health workers to adapt to a 'more sophisticated and wordy' STM. The CARDHS educator referred to a specific 'Indigenous visual memory style of learning' and believed that 'AHWs who were trained in the late 90s memorised the 3rd edition STM, knew exactly what the STM contained. AHWs trained after 2003 memorised the content of the 4th edition STM. The AHWs of the 90s were not given the opportunity to visually memorise the 4th edition'.

Managers and educators responded positively when asked to suggest ways of improving the CARPA STM. Suggestions included providing:

- a 'Welcome to the CARPA STM 5th Edition' section on the front page
- an overview of the structure
- information about how to use a protocol
- location of the drug dosage section
- instructions for using the index
- a few example scenarios for staff to learn how to navigate the CARPA STM prior to using it for an acute client

To enable all health services to prepare a 5th edition orientation plan for clinic staff, interviewees suggested that CARPA host a 5th edition orientation workshop at least three months prior to the launch.

At interview, many practitioners referred to the CARPA STM as the 'Bible', with the implication that it provided universal clinical guidance. Both managers and educators questioned the term 'Bible' in relation to 'leading them blindly' and preferred that the term 'evidence-based, best practice guidelines' was promoted. Technological changes that allow a constant flow of information to reach remote medical practitioners were seen by managers as 'here to stay' and it was noted that the CARPA editorial committee should be aware of the wide range of reference materials available.

4.4.3 Protocol review process

Health service managers were concerned about the period of three to four years between editions of the CARPA STM, with protocols becoming outdated. As a result of this need for updates, in 2006 the NT Department of Health and Community Services, through its Remote Health Services Professional Practice Program, developed the Additional Protocol Folder (APF). The APF system enables DHCS staff to complete a form regarding concerns about a specific CARPA STM protocol. This form is sent to the Professional Practice Program and reviewed by the Best Practice Committee. If the protocol is updated, then it is sent to all clinics for inclusion in the APF, and a pink sticker is placed into the CARPA STM to alert staff to the update. This provides a CARPA STM protocol update mechanism for the DHCS government clinics. There is no update mechanism, however, for community controlled health services.

It was noted that CARPA has the opportunity to provide a protocol update system for all users by developing a feedback process from CARPA STM users. It was suggested that each health service have a CARPA representative, and that the CARPA STM 5th edition includes four pages at the back for feedback to the CARPA office on protocol updates or problems using the STM. Remote staff could send these pages to their CARPA representative, who forwards them to the CARPA office for review. This provides an opportunity for all health services and health staff to directly communicate with CARPA staff. Once the protocol has been reviewed by the CARPA Review Committee, the updated protocol is forwarded to the CARPA representative at each health service. The CARPA representative then sends out a memorandum alerting all staff to the updated protocol, which is then added to the CARPA STM using a full page stick-on. This also provides an opportunity for the APF to be discontinued and for all health services to uniformly update their protocols on a regular basis.

5. Discussion and recommendations

The evaluation of the CARPA STM 4th edition and companion manuals provided an opportunity to appraise the role, assess the support structure and develop a plan to improve the capacity of this established, essential tool for best practice in Northern Territory remote health services. The STM is firmly institutionalised in all Northern Territory health services, and in the past five years, remote health practice has measurably improved (Bailie et al 2007).

5.1 CARPA STM's place in NT health services

The institutionalisation of the CARPA STM in NT remote PHC services is evidenced by (1) all practitioners signing an employment contract to use it, (2) health service management establishing quality assurance programs to monitor its practice, and (3) training agencies incorporating the STM into curricula. Remote health practitioners highly respect the evidence-based content, and appreciate the editorial committee's work in producing the STM. Due to high and persistent staff turnover, the manual is valued for providing a resource for 'on-the-job-training'. Practitioners feel an ownership of the STM, and appreciate its orientation to their needs and practice.

5.2 Format and presentation

Remote practitioners want the CARPA STM to be portable, maintain a 'cookbook recipe' style, be easy to navigate, standardised across all disciplines, not overly cross-referenced, and updated promptly whenever new evidence changes best practice. Interview data suggested that the focus of use in treatment is on acute presentations, and that there is a broader range of supports available for treating chronic disease, sexual health and mental health problems.

For the 5th edition, practitioners have requested that the size and weight of the manual not be increased, due to the need for portability and transporting the manual in swags. It needs to be easy to navigate, use a ring binder or equivalent to lie flat, and have brightly coloured tags to indicate sections. It is essential that the index is simplified, and an index navigation plan may need to be incorporated. More illustrations have been suggested for ear, eye and skin conditions. However, the most repeated request has been to keep the STM simple.

Simplicity and uniformity enable all disciplines to be 'on the same page', providing an essential team approach to remote health practice. An Aboriginal health worker or remote area nurse in an isolated bush community can phone a doctor many hundreds of kilometres away, who can then contact a specialist in Darwin 1000 kms away, with all of them looking at the same STM page. Staff transferring between clinics and services also retain the same treatment protocols. Having all disciplines 'on the same page' also provides a levelling of status between doctors, nurses and health workers. This democratisation of practice provoked both criticism and praise, but it does reinforce the team approach to remote health.

When a practitioner opens the STM it is most frequently to check the treatment for an acute presentation. The 'Emergency and Assessment' and 'Child health' sections were the most used, followed by 'General topics' and 'Reference section'. The 'Chronic diseases', 'Sexual Health' and 'Mental health' sections were least used. There has been a development and use of a range of alternative resources in chronic disease, mental health and sexual health management.

5.3 Compliance with protocols

The case file audits showed an overall compliance with STM protocols of 80%, with consistently high compliance to general observations and pathology tests. Given the current high prevalence of chronic disease, there was considerable variability in components of the protocols. This ranged

from over 90% (for example BP, BSL in CHD) to less than 20% (stress test for CHD). Lower compliance components included BMI and waist circumference measurement, foot checks, stress tests and eye examinations. The reasons for these lower compliance trends may be found in the results of a remote area nurse focus group, where a participant stated that 'doing a BMI is a waste of time' and the majority of RANs did not think these measures made a difference to management. Remote practitioners work in a generally under-resourced environment and it appears that clinical processes that involve multiple measurements, calculations, more complex clinical examinations or organising further testing away from the clinic were completed to a lesser extent than more straightforward clinical processes.

Comparing 1993 and 2007 audits, the most significant compliance difference was in the iron dose for anaemia in children. The protocol dictates that instead of giving one injection (as in 1993), children must now receive two or three injections over a period of up to six days. Practitioners are finding that parents are not bringing the children back for injections and consequently, compliance to the correct dose has reduced from 86% in 1993 to 66% in 2007. A significant rise was noted in parent/carer education about child nutrition, especially in Central Australia. In the comparison audit of sexually transmitted infection in men, the most significant finding was the dramatic rise in HIV testing over the past 14 years.

5.4 Companion manuals

The relationship of the companion manuals to the STM was a complex issue. CARPA had published the 4th edition as a core manual, and to make it of manageable size, it was cross-referenced to a set of resources, specifically the CRANA Procedures Manual, the AHW Medicines Book and the CARPA STM Reference Book. However, remote practitioners and health service managers, both government and non-government, expected the STM 4th edition to be an independent resource that governed best practice. Remote practitioners expressed their limited ability to cross-reference between manuals in the clinic. The removal of procedures from the CARPA STM 3rd edition to the CRANA Procedures Manual was not problematic for nurses, almost all of whom used it. However, a minority of doctors or AHWs used the CRANA manual. The companion manuals have not been distributed to all clinics. Where there was a Reference Book, it was used primarily by remote area nurses and was often found at the nurse's home, rather than in the clinic. It was regarded as good background reading, supporting the treatments performed during the day and taken home to enable the nurse to understand why the treatment was given.

5.5 Protocol review processes

The use of alternative and inconsistent processes to update some protocols highlights the need for CARPA to implement a protocol review system in collaboration with government and non-government health services. One possible process has been documented in the Results section above. Changing technology and the general acceptance of an electronic format as well as hard copy provide opportunities for a collaborative effort across government and non-government health services to develop an inclusive, continuous and consistent review and updating process.

5.6 Distribution and orientation

Previously, distribution of and orientation to a newly published STM have not been coordinated. This evaluation provided educators with the opportunity to offer suggestions, which included:

1. an STM orientation section at the front of the manual
2. an orientation committee with government and non-government health services, in order to enable a strategic approach to providing training alongside distribution of the new STM

The evaluation highlighted the importance of remote practitioners understanding how the STM works and ensuring that they are able to navigate and use the manual prior to using it to treat a patient. The expectation of some health managers that the CARPA STM itself can provide 'on-the-job training' is not useful. Orientation and training to use the manual were important aspects of the process of development of the STM that concern health managers, educators and CARPA.

5.7 Conclusion

The CARPA STM is an evidence-based guide that governs best clinical practice for people who live in remote communities in the Northern Territory. The STM is held in very high regard and compliance with protocols remains high. CARPA needs to address issues related to cross-referenced companion manuals; to the process of review and updating of protocols across all services; and to the orientation and training of all staff, new and more experienced, to the new edition of the CARPA STM.

5.8 Recommendations

This evaluation makes the following recommendations in relation to production of the next edition of the CARPA STM:

1. That the manual remains easily portable, with a more robust front cover;
2. That the index is comprehensive and simplified;
3. That additional illustrations are considered, bearing in mind that simplicity of presentation must be retained;
4. That an effective protocol review and updating system is developed in collaboration with government and non-government health services;
5. That orientation and ongoing training is provided for all staff in use of the CARPA STM 5th edition and the companion manuals. Training should involve case studies and cross-referencing to companion manuals;
6. That Aboriginal health workers have substantial involvement in the CARPA STM editorial committee;
7. That the CARPA STM continues be produced by remote practitioners for remote practitioners.

6. References

Bailie R, Si D, Dowden M, O'Donoghue L et al (2007) Improving organisational systems for diabetes care in Australian Indigenous communities. *BMC Health Serv Res.* 7:67.

Hampton C & Fallon C. (2001) *Evaluation of CARPA Standard Treatment Manual (3rd edition) and GSAT Adult Chronic Disease Management Guidelines*. Central Australian Rural Practitioners Association (CARPA), Alice Springs, NT.

Hope A. (2000) 'CARPA (1984-1999) RIP: How CARPA died while we were all at another meeting', *CARPA Newsletter*, 30, Jan 2000.

Ewald D (Editor) (2004) *CARPA Reference Manual*. Alice Springs: CARPA.

Mitchell R. (2002) *The Evaluation of the DR ABC: Emergencies and Management of Injuries STM Guidelines*. Alice Springs, NT.

Mawby B. (2002) 'Setting and measuring standards in an Aboriginal clinic', *CARPA Newsletter*, 34, Oct 2002.

Muir Gray JA. (2001) *How to Make Health Policy and Management Decisions: Evidence-based Healthcare*. Harcourt Publishers Ltd, London.

National Rural Health Alliance. (1997) *Best Practice for Rural and Remote Health Services, Rural Health Information Paper No 1*. NRHA Publications, ACT.

Pringle M. (2000) 'Participating in clinical governance: clinical governance in primary care', *British Medical Journal*, 321:737-740.

Williams N. (1993) *The CARPA Manual Story: An Evaluation of the CARPA Standard Treatment Manual*. Master of Science (Primary Health Care), Flinders University, Adelaide.

Appendix 1 – List of acronyms

List of acronyms used in this report	
ABCD	Audit and Best Practice for Chronic Disease
AHW	Aboriginal health worker
CAAC	Central Australian Aboriginal Congress
CADPHC	Central Australian Division of Primary Health Care
CARHDS	Central Australian Remote Health Development Services
CARPA	Central Australian Rural Practitioners Association
CRANA	Council of Remote Area Nurses of Australia
DHCS	Department of Health and Community Services
GAA	Growth Awareness and Action Project
GSAT	Guidelines, Standards and Audit Team
Hb	Haemoglobin
NRHA	National Rural Health Alliance
NT	Northern Territory
QA	Quality assurance
RAN	Remote area nurse
RN	Registered nurse
RHSET	Rural Health Support Education and Training Program
STD	Sexually transmitted disease
STI	Sexually transmitted infection
STM	Standard Treatment Manual
SWOT	Strengths, weaknesses, opportunities, threats
UTI	Urinary tract infection
WBM	Minymaku Kutju Tjukurpa Women's Business Manual

Appendix 2 – SWOT analysis form

CARPA Standard Treatment Manual Evaluation Project 2007
Interview Guide – Remote Health Managers/Co-ordinators

Interviewer

Date:

Interviewee

Position	Employer	Yrs of experience

Strengths

1. What do you feel the strengths of the CARPA STM and Companion Manuals are?

Weaknesses

2. What do you feel the weaknesses of the CARPA STM and Companion Manuals are?

Opportunities

3. In the future, can you see how CARPA STM and companion manuals may develop?

Threats

4. What do you consider to be the biggest threat to the usability of the CARPA STM and companion manuals?

16. Any other comments?

Appendix 3 – Participant information sheet

Project title:

Evaluation of fourth edition of the CARPA Standard Treatment Manual, CARPA Reference Manual and companion manuals

Project Investigators:

Maxine Chaseling, Senior Research Fellow, Centre for Remote Health, Alice Springs;
Ricky Mentha, Research Associate, Centre for Remote Health, Alice Springs;
Christine Davey, Research Associate, Centre for Remote Health, Alice Springs;
Sabina Knight, Senior Lecturer, Centre for Remote Health, Alice Springs;
Dr John Wakerman, Professor and Director, Centre for Remote Health, Alice Springs.

Participant information sheet

Aims of the project

The evaluation of the STM and companion manuals will assess the:

1. appropriateness and accessibility of use by primary health care practitioners in Central Australia and the Top End
2. manual's format
3. practical utility of the protocols contained in the fourth edition to inform their revision
4. need for cross referencing to other sections for co morbidities.

Participant information

If you agree to participate in this study you will take part in an interview of approximately 30 minutes duration. The interview will be conducted at a mutually agreed time and location. The interviewer may contact you for further input/comment later in the project's progress, and this would involve another short interview by telephone to discuss ideas that have been raised by other participants. Please note that participation is entirely voluntary and you are free to withdraw at any time, including during the interview. Should you choose to withdraw from the project all data obtained from you will be withdrawn from the project at your discretion.

With your consent the interview(s) will be recorded. The transcripts and other information obtained will inform the review of the CARPA STM and companion manuals. Data collected will be kept completely confidential and will only be accessed by the research team. If you give consent for us to do so, your name, together with the name of the organisation you represent if applicable, will be published in the list of 'Key Informants interviewed' in the project report. The results of the study will be published or disclosed to other people in a way that will not identify you. Participants will be notified when the project report is complete and an electronic copy available.

Participation in this project carries no foreseeable added risk above the risks of everyday living. We cannot and do not hold out that you will receive any direct benefits from this study.

Please note that this study has been cleared by human research ethics committees of Central Australia and the Menzies School of Health Research, in accordance with the National Health and Medical Research Council's guidelines. You are, of course, free to discuss your participation in this study with project staff on 8951 4735 or 8951 4717. If you have any further questions please contact the project co-ordinator, Maxine Chaseling, on 8951 4735, or email Maxine.chaseling@flinders.edu.au. You may also contact the Principal Investigator, Professor John Wakerman, on 8951 4700 or email john.wakerman@flinders.edu.au.

If you have any concerns you can contact the Central Australian Human Research Ethics Committee on 8951 5844, or the Secretary, Human Research Ethics Committee of the NT Department of Health and Community Services and Menzies School of Health Research on Ph: 08 8922 7922.

You can keep this information sheet

Appendix 4 – Interview guide

CARPA Standard Treatment Manual Evaluation Project 2007

Interview Guide – Remote Practitioners

Name:

Clinic

Experience with STM

1. Can you show me where the CARPA STM is kept?

2. Why is it kept in this place?

3. Who uses the CARPA STM?

4. How often do you use the CARPA STM?

1-3 times per day

1-3 times per week

1-3 times per month

1-3 times per year

Never Why?

5. Do the other staff use the CARPA STM?

6. When using the STM Manual, what are the main areas that you use?

- 1. Emergency & Assessment ()
- 2. Child Health ()
- 3. Mental Health and drug problems ()
- 4. Chronic Disease ()
- 5. Sexual Health ()
- 6. General Topics ()
- 7. Reference Section ()

7. Why do you refer to the STM Manual?

- 1. Diagnosis ()
- 2. Treatment ()
- 3. Checking ()
- 4. Medicolegal ()
- 5. Teaching ()

8. Is the CARPA STM user friendly?

Very Useful () Somewhat Useful () Neutral () Not Very Useful () Don't Use It ()

9. (a) Can you tell me any specific positive points regarding the CARPA STM?
(access, layout, size, format, content)

(b) Can you tell me any specific negative points regarding the CARPA STM?
(access, layout, size, format, content)

10. Do you have difficulty reading any of the protocols? Yes () No ()

11. Are there protocols that you have tried and do not like? Yes () No ()

12. Have any protocols been adapted? Yes () No ()

13. Does the clinic have a CARPA Reference Book? Yes () No ()

14. Who uses the Reference Book?

15. What is it used for?

16. Is the Reference Book useful?

Very Useful () Somewhat Useful () Neutral () Not Very Useful () Don't Use It ()

17. Do you have access to the internet? Yes () No ()

18. Would you use CARPA STM if it was available electronically (E-CARPA)?

Yes () No ()

19. Would you use the Reference Book if it was available on the website?

Yes () No ()

20. Does the clinic have a Clinical Procedures Manual for Remote Area Practice?

Yes () No ()

21. Who uses the CRANA Manual?

22. Is the CRANA Manual useful?

Very Useful () Somewhat Useful () Neutral () Not Very Useful () Don't Use It ()

23. Does the clinic have a Medicines Book for Aboriginal Health Workers?

Yes () No ()

24. Where is the Medicines Book kept?

25. Who uses the Medicines Book?

26. How often is the Medicines Book used?

27. How often is the Medicines Book used?

28. Is the Medicines Book useful?

Very Useful () Somewhat Useful () Neutral () Not Very Useful () Don't Use It ()

29. Are there other books or guidelines that are used in the clinic? Yes () No ()

30. Why are these used?

31. Do you know of a policy for the use of CARPA STM? Yes () No ()

32. Have you received training to use the CARPA STM? Yes () No ()

If no, would you like to receive training on how to use:

- CARPA STM ()
- Reference Book ()
- CRANA Manual ()
- Medicines' Book ()

33. Any other comments?

Appendix 5 – Focus group interview form

**CARPA STM Evaluation 2007
Focus Group**

Site Interviewer

Participants: Date

1. What is the role of the Standard Treatment Manual?

2. What is the main reason that you consult the CARPA STM?

3. Do you find the STM easy to use?

4. What are the positive points regarding the STM?

5. What are the negative points of the CARPA STM?

6. Do you have any particular protocols that need to be adapted?

7. How can we make the STM easier to use?

8. What is the policy regarding the CARPA STM?

9. Do you use the:
a. Reference Book

b. CRANA Procedures Manual

c. Bush Medicines Book

10. Would you use E-CARPA if it was available?

Appendix 6 – Codes for thematic analysis

Codes	Themes
ROL	The role of the STM in the clinic
POL	Policy implementation process
FOR	The format of the STM
TARG	Target group satisfaction
COM	Protocol compliance
REF	The role of the Reference Book
ECA	The potential of E-CARPA
CRA	The role of CRANA
MED	The role of the Medicines Book
ORS	The use of other resources
POL	Policy knowledge re STM
TRA	Training to use STM and companion manuals
SYS	Systems to support the use of the STM

