Physiotherapist, Mr C

A Report by the

Health and Disability Commissioner

(Case 03HDC02846)

Health and Disability Commissioner
Te Toihau Hauora, Hauātanga

Parties involved

Mrs A	Consumer (dec)
Ms B	Complainant / Consumer's daughter
Mr C	Provider / Physiotherapist

Complaint

On 26 February 2003 the Commissioner received a complaint from Ms B about the services provided to her mother, Mrs A, by Mr C in 2002. The complaint was summarised as follows:

Mr C, physiotherapist, did not provide services of an appropriate standard to Mrs A in 2002. In particular, Mr C did not:

- *take adequate steps to ensure that Mrs A was not burnt or otherwise harmed during the course of her treatment;*

- *properly review the appropriateness of Mrs A's treatment when the condition of her neck or shoulder did not improve and she felt unwell.*

An investigation was commenced on 26 May 2003.

Information reviewed

- I reviewed information from Mr C, Ms B, the New Zealand Society of Physiotherapists Inc (NZSP), a surgery, a Public Hospital and the Physiotherapy Board of New Zealand.

Independent expert advice was obtained from Mr Duncan Reid, Principal Lecturer, School of Physiotherapy, Auckland University of Technology (see pp 11-15).

Information gathered during investigation

Background

Mr C is a member of NZSP and treated Mrs A (aged 73 years) for her physiotherapy needs from 1975 until 2002. He provided Mrs A with 14 treatments for a neck sprain from 15 March until her discharge on 11 April 2002. On 22 March, Mrs A suffered a burn from Mr C's microwave treatment.

Chronology

15 March 2002
Mrs A had an appointment with Mr C. He recorded that Mrs A had fallen on her head on 10 March when she lost her balance after removing clothes from a suitcase.

Mr C recorded that Mrs A had spasms "+++" in the left and right muscles of her neck, radiating into her trapezii muscles (muscles of the shoulder and upper back). The range and movement of her cervical spine was restricted by 5% and was painful on extension and rotation. There were no neurological signs in her arms. He further recorded that he treated Mrs A with a microwave intensity of 20 for 20 minutes to her posterior neck and shoulders and applied faradic stimulation to her left neck and trapezii muscles. Mr C conducted the microwave treatment on Mrs A's shoulder through her clothing and informed her to call him if the heat treatment became too hot. He also massaged her neck and shoulder muscles and conducted mobilising exercises on her neck.

18 March
Mrs A had an appointment with Mr C. He recorded that she remained tender over her C5, 6 and 7 vertebrae and had neck muscle spasms radiating into her left trapezium muscle. Her right trapezium muscle had fewer spasms and the range of movement in her cervical spine remained restricted by 5 degrees in extension and rotation.

Mr C treated Mrs A with a microwave intensity of 20 for 20 minutes to her cervical spine, massaged her neck and shoulder muscles and applied faradic stimulation to the left side of her neck and trapezii muscles. He also conducted mobilising exercises of her cervical spine.

19 March
Mrs A had an appointment with Mr C. He recorded that she remained tender over her C5, 6 and 7 vertebrae with neck muscle spasms radiating into her trapezii muscles on extension and rotation. The range of movement in her neck remained restricted in the last few degrees of movement and when resisted. Mr C massaged Mrs A's neck and shoulder muscles, applied faradic stimulation to her neck and trapezii muscles and assisted and conducted mobilising exercises on her cervical spine.

20 March
Mrs A had an appointment with Mr C. He recorded that she remained tender over her C5, 6 and 7 vertebrae with spasms in her neck and trapezii muscles on extension and rotation. The range of movement in her neck remained restricted in the last few degrees of movement and when resisted. He treated the posterior of Mrs A's neck with microwave intensity of 20 for 20 minutes, applied faradic stimulation to her neck and trapezii muscles, massaged her neck and shoulder muscles and assisted her with mobilising exercises on her cervical spine.

21 March
Mrs A had an appointment with her general practitioner (GP). He recorded that she had a pain across her stomach, flatulence, distension and felt nauseous. Her GP recorded that on examination Mrs A had epigastric tenderness, flatulence and central abdominal pain on palpitation. Her blood pressure was 200/100. Her GP prescribed Maxolon, Omeprazole and Inhibace (the latter for hypertension).

Mrs A also had an appointment with Mr C. He recorded that she was still tender over her C5, 6 and 7 vertebrae with spasms in her neck and trapezii muscles on extension and rotation. The range of movement in her neck remained restricted in the last few degrees of movement and when resisted. He treated the posterior of Mrs A's neck with microwave intensity of 20 for 20 minutes, applied faradic stimulation to her neck and trapezii muscles, massaged her neck and shoulder muscles and conducted mobilising exercises on her cervical spine.

22 March
Mrs A had an appointment with Mr C. He recorded that her trapezium muscle remained tender on extension and rotation but she was less tender over her C5, 6 and 7 vertebrae. The range of movement in her cervical spine remained restricted only in the last few degrees of movement and when resisted. He treated Mrs A's cervical spine with microwave intensity of 20 for 20 minutes, massaged her neck and shoulder muscles and conducted mobilising exercises on her cervical spine.

25 March
Mrs A had an appointment with Mr C. He recorded that she had a reddened area over her right shoulder with a blister from her last microwave treatment. The blister had a circumference of approximately 75mm. He further recorded that Mrs A had not complained about getting too hot as she did not think that she had. Mr C covered the blister with tape and administered electro-magnetic treatment to her upper back for 15 minutes. In response to the complaint he advised that he administered electro-magnetic treatment (rather than microwave treatment) in light of Mrs A's blister. He massaged Mrs A's neck and shoulder muscles and assisted her with mobilising exercises on her cervical spine.

26 March
Mrs A had an appointment with Mr C. He recorded that she was feeling more comfortable with less discomfort on extension. Her blister was resolving and was still covered with a dressing. He further recorded that Mrs A had fewer muscle spasms and was less tender over her C5 and C6 vertebrae. The range of movement in her cervical spine remained restricted

only to the last few degrees of movement and when resisted. Mr C administered electro-magnetic treatment to Mrs A's neck and upper back, massaged her neck and shoulder muscles and conducted mobilising exercises on her neck.

27 March
Mrs A had an appointment with Mr C. He recorded that her blister continued to resolve and remained covered with a dressing. Mrs A was still tender over her C5 and C6 vertebrae and the range of movement in her cervical spine remained restricted only to the last few degrees of movement and when resisted. Mr C administered electro-magnetic treatment for 15 minutes to Mrs A's back, massaged her neck and shoulder muscles and applied faradic stimulation to her neck and trapezii muscles. He also conducted mobilising exercises on her neck.

In his response to the complaint Mr C advised that at this consultation he requested that Mrs A contact her GP for an assessment because he had treated her eight times for cervical strain, which is the Accident Compensation Corporation's (ACC) recommended treatment profile for neck sprain.

28 March
Mrs A had an appointment with her GP and reported a dull ache in the back of her head and neck. He diagnosed her with a temporal headache and recorded as his plan and treatment "Panadeine and physio".

Mrs A had an appointment with Mr C. He recorded that her blister had almost completely resolved. He also recorded that Mrs A had seen her GP, who advised her to continue with physiotherapy treatment to her neck. Mrs A remained tender over her C3, 4 and 5 vertebrae but was more tender on the right. He treated Mrs A's cervical spine with microwave intensity of 20 for 20 minutes and mobilising exercises and applied faradic stimulation to her right trapezium muscle.

2 April
Mrs A had an appointment with Mr C. He recorded that the tape had been taken off her blister, which was resolving well. Mrs A was less tender over her C5 and 6 vertebrae and had had no headaches over the Easter break. The range of movement in her neck remained restricted only in the last few degrees of movement and when resisted. He treated Mrs A's cervical spine with microwave intensity of 20 for 20 minutes and mobilising exercises and massaged her neck and shoulder muscles. At this consultation he decided to treat Mrs A only twice a week as her condition had improved.

5 April
Mrs A had an appointment with Mr C. He recorded that Mrs A was less tender over her C5 and C6 vertebrae and did not have a headache. The range of movement in her neck remained restricted only to the last few degrees of movement and when resisted. He treated Mrs A's cervical spine with microwave intensity of 20 for 20 minutes and mobilising exercises, massaged her neck and shoulder muscles and applied faradic stimulation to her neck and trapezium muscle. He further recorded that Mrs A's blister continued to resolve.

8 April
Mrs A had an appointment with Mr C. He recorded that her blister had almost completely resolved. The range of movement in her neck continued to increase. He administered infrared treatment for 30 minutes, massaged Mrs A's neck and shoulder muscles and assisted her with mobilising exercises on her cervical spine.

11 April
Mrs A had her final appointment with Mr C. He recorded that the range of movement in her neck continued to increase and that she had fewer spasms in her neck and shoulder muscles. He administered infrared treatment for 30 minutes, massaged her neck and shoulder muscles and assisted her with mobilising exercises on her cervical spine.

18 April
Mrs A had an appointment with another doctor in the same practice as her GP. The doctor recorded that she reported a headache on the right side of her head.

27 April
Mrs A was admitted to the Public Hospital after presenting to the Emergency Department. She reported that she had experienced dizziness for the previous month after she had been diagnosed with hypertension and commenced on Inhibace by her GP. Her dizziness had become more severe during the preceding day and was accompanied by vomiting. Mrs A also reported an intermittent frontal headache, which she had experienced for the previous month. Mrs A was diagnosed with a benign peripheral vestibular lesion.

1 May
Mrs A was discharged from the Public Hospital.

12 May
Mrs A presented to the Emergency Department at the Public Hospital with drowsiness, left-sided "headache/neck pain", dizziness and vomiting. Mrs A was admitted to hospital and died.

13 May
A post-mortem was conducted. The report stated that Mrs A's death was due to an infarction of her left brain stem and medulla. This was secondary to giant cell arteritis of her left vertebral artery with superimposed thrombosis.

Physiotherapy policies and procedures

In response to Ms B's complaint, Mr C advised that it is his usual practice to document any reported dizziness. He uses a body chart in relation to back treatment but did not use one in relation to Mrs A's treatment. He does not have any policies or procedures in place regarding the application of heat to patients because, as a sole practitioner, it would be superfluous to write them for himself.

Mr C does not use a medical screening sheet. However, a sign is displayed in each treatment room and he goes through it with each patient at each treatment. This sign states as follows:

> "Warning
>
> Some treatments may be hazardous to your health.
> Please advise your Physiotherapist if you:
> - are pregnant
> - have a pacemaker or artificial implants of any nature
> - have AIDS or Hepatitis
> - are on any long term medication
> - have any chronic or serious health problems."

Mr C believes there is no causative link between his physiotherapy treatment and the damage to Mrs A's brain stem.

Response to my provisional opinion

In response to my provisional opinion Mr C advised that:

- Mrs A would have been able to detect that she was being burnt by the microwave treatment because she was alert and had viable sensation.

- He properly assessed Mrs A's condition at the beginning of her treatment. This included conducting a physical assessment and obtaining a detailed history. On 27 March 2002 he also referred Mrs A to her GP, who considered that her physiotherapy treatment should continue.

- He thoroughly reviewed Mrs A's treatment and condition after each consultation. He acknowledged that there was no significant improvement in her condition but that did not mean he failed to review her treatment. He referred Mrs A to her GP, who agreed that her physiotherapy treatment should continue.

Code of Health and Disability Services Consumers' Rights

The following Right in the Code of Health and Disability Services Consumers' Rights is applicable to this complaint:

RIGHT 4
Right to Services of an Appropriate Standard

2) Every consumer has the right to have services provided that comply with legal, professional, ethical, and other relevant standards.

Opinion: Breach – Mr C

In my opinion Mr C did not comply with professional standards and breached Right 4(2) of the Code of Health and Disability Services Consumers' Rights (the Code). The reasons for my decision are given below.

Burn
It appears that Mrs A's burn was caused by the microwave treatment she received on 22 March. I accept the independent advice of my expert physiotherapist, Mr Duncan Reid, that this burn was most likely caused by poor technique or because the treatment was provided through Mrs A's clothing. Her clothing could have impaired air circulation and led to a build-up of excessive sweat (which would also be more difficult to detect). I note that the Physiotherapy Code of Safe Practice (Department of Health, 1988) indicates that one of the potential hazards of microwave treatment is burning of shallow tissues and that "to prevent burns, electrical treatment generating heat should only be given where the patient has viable sensation and circulation".

I also consider that it was not adequate for Mr C to advise Mrs A to call him if the microwave treatment became too hot as it is clear that she did not realise she was being burnt. I note that in response to my provisional opinion Mr C advised that because Mrs A was alert and had viable sensation, it was wrong to conclude that she failed to appreciate she was being burnt. However, he recorded that Mrs A did not realise she was being burnt and I consider it almost certain that if she had detected this, she would have requested Mr C's assistance. In any event, it was his responsibility to take reasonable steps to minimise the potential hazards and ensure Mrs A's safety during her microwave treatment. Mr C failed to do this in applying microwave treatment through her clothing, which is likely to have caused her burn and made detection more difficult.

I acknowledge the advice of my expert that Mr C should have informed Mrs A's GP of the burn. Guideline 2.8 of the New Zealand Society of Physiotherapists (NZSP) Code of Ethics states that physiotherapists should keep the patient's referring health professional informed of progress and any concerns. Although Mrs A's GP was not the referring provider in this

case (Mrs A self-referred), I consider that Mr C would have been wise to contact him about this issue in case complications developed with the burn.

To his credit, Mr C apologised to Mrs A for her burn, and appropriately treated her injury. Thankfully Mrs A did not suffer any internal injury or serious damage.

Review of treatment
In my opinion Mr C did not properly review the effectiveness of Mrs A's treatment as required by standard 14 (criteria 14.6) of the NZSP Standards of Physiotherapy Practice (published in August 2000 and valid until July 2002). His records indicate that, although he treated Mrs A at 14 consultations with similar techniques, the range of movement in her neck remained unsatisfactory and she continued to have spasms in her neck and shoulder muscles. I accept that Mr C noted improvement in Mrs A's condition at his consultations in April, but it appears that he did not properly assess her overall progress at any stage and consider whether a different approach to her treatment was warranted.

My view is supported by my expert's advice that Mr C did not properly assess Mrs A's condition at the commencement of her treatment (his warning sign was insufficient) and did not formulate functional measurable treatment goals and outcomes with her (criteria 14.1). It is also clear that Mr C did not identify a time frame within which the goals and outcomes would be achieved (criteria 14.8). This was important because criteria 14.9 states that the "physiotherapist ceases treatment when physiotherapy intervention has achieved and sustained agreed defined functional goals".

I note Mr C's response to my provisional opinion that he thoroughly reviewed Mrs A's condition and treatment after each consultation. He acknowledged that there was no significant improvement but said that did not mean that he failed to properly review her care.

I do not accept that Mr C properly reviewed Mrs A's condition and treatment after each consultation and considered whether a different approach to her treatment was warranted. My view is based upon the absence of documentation, the acknowledged lack of progress, and the similar treatments provided over 14 consultations. Mrs A's treatment appears to have been lacking in direction without defined goals and time frames.

I acknowledge that Mr C referred Mrs A to her GP for an assessment on 27 March in view of the ACC treatment profile for neck sprain and that her GP considered that it was appropriate for her to continue with physiotherapy. However, Mr C still had a professional obligation to conduct a proper review of the progress of Mrs A's treatment. I note that he did not discuss this issue with Mrs A's GP.

I acknowledge my expert's comments concerning the dizziness, which would have warranted an assessment consistent with the Protocol for the Pre-Manipulative Testing of the Cervical Spine endorsed by NZSP. Mrs A informed the Public Hospital that she experienced dizziness after she was commenced on Inhibace by her GP on 21 March. Ms B advised me that her mother complained of dizziness after her burn, which occurred on 22

March. However, there is no mention of dizziness (or nausea) in Mr C's records, although he stated that his usual practice is to document such information.

I note that Mrs A informed Mr C that she was experiencing headaches. I accept that in hindsight this may have prompted a review of her treatment. However, Mr C considered that Mrs A's headaches were improving and on 28 March she reported to her GP that she had a dull ache in the back of her head. Mrs A's GP diagnosed Mrs A with a temporal headache and recorded as his plan and treatment "Panadeine and physio".

In summary, in several respects Mr C did not comply with professional standards in his treatment of Mrs A, and therefore breached Right 4(2) of the Code.

Other comments

Lack of documentation
I acknowledge my expert advice that Mr C's recording of information in this case was substandard. I note guideline 2.5 of the NZSP Code of Ethics, which states that physiotherapists "shall ensure that comprehensive, accurate and up-to-date clinical records are kept".

Inadequate assessment
I accept my expert advice that Mr C did not properly assess Mrs A's condition at the commencement of her treatment. I acknowledge that Mrs A did not inform him of her dizziness but I consider that further investigation into the circumstances surrounding her fall and symptoms was warranted. It is essential that patients' medical histories, presenting symptoms and pre-existing conditions are properly explored (and recorded) to ensure quality of care. This is particularly so in relation to treatment of the cervical spine in view of its relationship with the vertebral arteries.

I acknowledge Mr C's statement in response to my provisional opinion that he physically assessed Mrs A and obtained a detailed history at the commencement of her treatment. However, I remain of the view that Mr C's assessment was not adequate and note in particular that he did not adequately explore the circumstances surrounding Mrs A's fall.

Absence of written policies
I note the comments of my expert advisor that Mr C did not appear to have any written policies or procedures in place in relation to the prevention of burns during heat treatment. Mr C acknowledged this. Standard 9 (criteria 9.7) of the NZSP Standards of Physiotherapy Practice states that "a procedure for identifying and reducing the risks of hazards in the physiotherapy practice or service [is] to be in place".

Recommendation

I recommend that Mr C review his practice in light of this report.

Actions

- A copy of this report will be sent to the Physiotherapy Board of New Zealand.

- A copy of this report, with details identifying the parties removed, will be sent to the New Zealand Society of Physiotherapists, and the New Zealand Private Physiotherapists Association, and placed on the Health and Disability Commissioner website, www.hdc.org.nz, for educational purposes.

Independent advice to Commissioner

The following expert advice was obtained from Mr Duncan Reid, Principal Lecturer, School of Physiotherapy, Auckland University of Technology:

> **"Complaint: That [Mr C], Physiotherapist did not provide services of an appropriate standard to [Mrs A] in 2002. In particular,[Mr C] did not:**
> - Take adequate steps to ensure that [Mrs A] was not burnt or otherwise harmed during the course of treatment;
> - Properly review the appropriateness of [Mrs A's] treatment when the condition of her neck and shoulder did not improve and she felt unwell.
>
> Before answering the questions you have specifically asked me I would like to comment that there are obviously two quite different issues to address in this case, one being the physiotherapy treatment and other the medical treatment of [Mrs A]. This expert advice will only address the physiotherapy issues and how they may relate to the medical issues.
>
> Questions to be answered:
>
> 1. **Should [Mr C] have referred [Mrs A] for medical assessment before commencing treatment?**
>
> Questions 1 and 2 are related in that referral for further medical assessment is dependent on the outcomes of the initial assessment by the physiotherapist. From the documents provided by the Commissioner it appears that [Mrs A] had an assessment but [Mr C's] notes are very brief. As physiotherapists are now primary contact practitioners it is appropriate to get patients to complete a medical screening form […] or gather and document pertinent medical information that may effect physiotherapy treatment. Although [Mr C] has provided evidence of a warning sign […] that covers some health issues and states that he talks to patients about the information on the sign, there is no documented evidence that [Mrs A] was free of any serious medical conditions. Had the form […] been filled out, it is possible that [Mrs A] may have circled the dizziness section. Dizziness (one of [Mrs A's] major symptoms) can be associated with a number of conditions including cervical headache, vertebral artery compromise and Giant Cell Arteritis (GCA). It is not apparent in [Mr C's] notes if dizziness was an initial presenting symptom but the family's account of events would suggest that it was certainly present by the second course of physiotherapy provided after Easter.
>
> An appropriate examination would entail a lengthy subjective examination ascertaining the exact cause, nature and behaviour of the patient's symptoms and this is especially relevant with headache as there can often be little to see on physical examination. There appears to be no information in [Mr C's] notes as to the duration, frequency or intensity of [Mrs A's] neck pain and headache. Given that

GCA is an inflammatory condition this would have been useful information to be able to differentiate between an inflammatory or mechanical neck condition. It is of interest to note that in the ACC Physiotherapy treatment profiles under Neck sprain (Read Code S570) […] that in the section titled differential diagnosis that 'inflammatory disorders' are explicitly stated. There is little evidence in the notes in terms of the location of the pain on a body chart or other form of documentation. […]

If dizziness had been an initial symptom then the standard practice would also have been for [Mr C] to undertake a screening protocol for Vertebral Basilar Insufficiency (VBI). This protocol has been in existence since 1988 and is endorsed by the New Zealand Society of Physiotherapists (NZSP) as the accepted standard of care for any patient complaining of headache and dizziness […]. The use of this protocol may also be relevant in view of the Pathologist report that both vertebral arteries demonstrated evidence of GCA. Although the tests embodied in the protocol are not gold standard tests and recent literature (Rivett, Sharples et al. 2000) has shed some doubt on their validity of the testing procedure, it is still appropriate to follow the protocol in an attempt to be more definitive in the diagnosis. If dizziness was not present on the initial visit but became a feature of subsequent visits to the physiotherapist then the protocol should have been used at that stage. Had this protocol been used and relevant clinical findings discovered and then a referral back to the GP may have been appropriate either following the initial visit or following a subsequent visit.

2. **Did [Mr C] appropriately assess and treat [Mrs A] on 15 March 2002?**

As far as the assessment is concerned the some of the key issues have been answered in question one. The New Zealand Society of Physiotherapists (NZSP) and the New Zealand Private Physiotherapists Association (NZPPA) both have guidelines on the expected standard of care and assessment […]. [Mr C] is a member of the NZSP but not the NZPPA.

A patient should expect to have an interview to establish the history of the complaint, the nature of the pain, whether the pain is behaving in a chemical way (inflammatory) or mechanical way, past history, and questions about safety issues eg medications, pins and needles, numbness, dizziness etc that may indicate more serious pathology.

Next a physical examination would take place. This should cover active range of movement, relevant passive movement tests to appropriate joints and special tests such as VBI and ligament stability testing […].

Looking at the notes that have been provided by [Mr C] there is minimal evidence of the depth of interview and tests carried out. There appears to be no evidence of explanation of treatment, informed consent or goal setting in conjunction with the patient. These are requirements of both the NZSP […] and the NZ Private

Physiotherapists Association (NZPPA). Given that the subsequent pathology from which [Mrs A] died was Giant Cell Arteritis, special tests would need to be carefully carried out and documented to ascertain the status of the circulation to the brain. [Mrs A's] family have stated on a number of occasions that they were very concerned about the dizziness. [Mrs A's] neck injury came from a fall where she lost her balance. This may have seemed innocuous at the time, but may also have been the first sign of an alteration in cerebral blood flow manifesting in what is usually described as a 'Drop Attack'. Following the assessment an explanation to the patient of the possible reasons for the pain, the treatment plan and the possible time frame for the problem to resolve would be standard practice. Again from the notes there is no evidence of this having been done.

With respect to treatment, this consisted of electrical modalities including microwave diathermy, faradic stimulation, massage and mobilisation to the neck. There is not sufficient detail in [Mr C's] notes to ascertain the exact nature of the mobilisation. This would be important to document because if the VBI protocol elicited both subjective and objective dizziness then end range rotation mobilisation is not recommended for fear of stressing the vertebral arteries. As rotation is one of the movements mentioned by [Mr C] as limited one can only assume that some form of rotation mobilisation was undertaken to improve this.

3. **Was [Mr C's] ongoing assessment and treatment of [Mrs A] between 15 March and 11 April 2002 of an appropriate standard?**

The main feature of [Mr C's] treatment is that there is little objective evidence of change with the type of treatment given and that the treatment is much the same each day, so there is little evidence of progression of treatment. This would not be in keeping with the NZPPA Accreditation guidelines […].

4. **Was the frequency and duration of treatment that [Mrs A] received appropriate?**

The ACC Physiotherapy treatment profiles for Neck sprain (Read Code S570) indicate that 8 treatments are recommended, with a threshold for a trigger at 10 treatments. [Mr C] has provided [Mrs A] with 17 treatments from the 15/03/02 until the 11/04/02. This number would seem to be outside the recommendations of the ACC Physiotherapy treatment profiles (Corporation 2000).

5. **Should [Mr C] have reviewed his approach to [Mrs A's] treatment before April 11th 2002? If so at which point?**

Article 2.9 of the NZSP ethical guidelines […] states that 'Physiotherapists should keep the patient's referring health professional informed of the patient's progress and any concerns the physiotherapist may have'. Given the extent of the dizziness [Mrs A's] family has portrayed, especially after Easter, this should have been mentioned in [Mr C's] notes. It may also have been appropriate to inform [Mrs A's]

GP about the burn in case there were any ongoing problems with this. Therefore a review of her condition and the burn would have been appropriate at that stage.

Burn

6. **What is the most likely cause of the burn?**

The burn was most likely caused by the microwave diathermy. [Mr C] does not state this explicitly but there seems no evidence to the contrary and he did apologise for the burn. Microwave diathermy should be applied 2-6cm from any bony prominences (Kitchen 2002) pg 167. The patient's skin should be tested to ensure normal sensation to heat/cold is present. There should be sufficient air circulation to ensure that sweat does not build up and if it does the treatment should be stopped, the area dried and then the treatment recommenced (Kitchen 2002). […] ([Mrs A's] daughter) states that she thinks the microwave was given to her mother through her clothes. If this were the case then sweat build up would have gone unnoticed and may have even enhanced the chance of a burn.

7. **What steps, if any, should [Mr C] have taken to prevent the burn to [Mrs A]?**

Although [Mr C] states that he informs all patients to tell him if the microwave is getting too hot, other than the patient calling out, there is no evidence to demonstrate how else the therapists may be contacted, for example a bell or cut out switch for the machine. Also if the clothing over the area was still on this should have been removed.

8. **Should [Mr C] have continued treatment in view of the burn? If not, what should have been done?**

Treatment following the burn is appropriate once the actual burn had been addressed, which it was.

9. **Why did [Mrs A] not detect the burn immediately?**

The three most likely causes of the burn are poor technique in application by the therapist; an inability to dissipate the heat and an inability to detect the heat caused by the patient having poor sensation or poor circulation (Kitchen 2002) pg 169.

10. **Would [Mrs A] have received any internal damage from the burn?**

No, the skin reflects a large amount of the microwave radiation and the deeper effects of the heating are minimal (Kitchen 2002) pg 167.

Other matters relevant to the case.

One question often asked is: Is there a causal link between the treatment given and the worsening of the symptoms? The physiotherapy treatment provided by [Mr C] was not optimal by today's standards and did produce a burn however it would be difficult to determine if the treatment had directly caused the brain stem infarct as sufficient time appears to have passed from the point of discharge to [Mrs A's] death.

In summary:

– [Mrs A] appears to have received a cursory examination from the notes provided prior to her treatment with minimal information gained on the nature, intensity, frequency and type of neck pain and headache. There is no evidence of a medical screening process or the use of special tests to determine a differential diagnosis or to determine if the headache, neck pain or the dizziness were linked and/or significant.
– There is no documentation to suggest that [Mrs A] was actively involved in any goal setting with regard to her treatment or was clearly informed of her treatment options and outcomes.
– The note taking is not of the required standard as expected by the NZSP and the NZPPA.
– There was a burn to [Mrs A] that was as a consequence of the application of the microwave diathermy.
– There was no evidence supplied by [Mr C] as to the written policies and procedures with respect to the patient warnings in case of a burn or how the patient should attract the therapist's attention should verbal communication not be possible.
– There is no clear link between the physiotherapy treatment and [Mrs A's] death.

Relevant References:
Corporation, ACC. (2000). Physiotherapy Treatment Profiles. Wellington.

Kitchen, S. (2002). Electrotherapy evidence based practice. Edinburgh, Churchill Livingstone.

Rivett, D., K. Sharples, et al. (2000). Vertebral Artery Blood Flow During Pre Manipulative testing of the Cervical Spine. IFOMT, MPAA, Perth, Australia, University of Western Australia.

[…]"