Chiropractic in Australia: A Survey of the General Public

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ABSTRACT: Background: An increase in the use of complementary and alternative medicine was identified in several countries including Australia. There is a need to assess the current position of chiropractic within the Australian health system. Objectie s: To estimate the lifetime prevalence of the use of chiropractic in Australia; to investigate the perceptions and attitudes of Australian general public about: their health status, the chiropractic profession, chiropractic and health services in general. Methods: A survey was carried out in which a novel 21-item questionnaire was utilised. To obtain a sample whose opinions would be representative of the Australian general population with a 95% level of significance and 4% margin of error, 600 respondents were required. Descriptive statistics, the chi-squared test and logistic regression were used to present and analyse the data. *Results*: 757 respondents completed the survey. A high prevalence of pain and discomfort relating to the musculoskeletal system were found, particularly in the lower back (71.1% of the respondents) and neck (55.6%). The first contact with respect to therapy for the greatest proportion of respondents was general medicine (35.5%), followed by chiropractic (16%), physiotherapy (13.8%) and massage (10.2%). Physiotherapy was rated highest in its ability to relive the symptoms (18%) followed by chiropractic (15.9%), massage (15.5%) and medicine (14%). In our sample 302 (39.9%) participants used chiropractic before and 75.9% of these consumers were satisfied or highly satisfied with the services provided. No significant differences in income, age and gender were found with regards to those individuals who reported a previous use of chiropractic services. The main reasons for not using chiropractic were: that there was no perceived need for a chiropractic intervention, associated cost, lack of information about chiropractic, lack of referral, being attended by another health professional, and concern about the safety and efficacy of the treatment. Most of the respondents considered that attending to general health and well-being was more important than simply alleviating symptoms and their personal philosophy was a major determinant when it came to the choice of health services. Conclusions: This study suggests that chiropractic is a thriving profession in Australia. It would appear that there is a need for chiropractic services in Australia, particularly in attending to the highly prevalent realm of musculoskeletal disorders. A considerable number of Australians already utilise chiropractic services. Encouragingly, the vast majority of these consumers are satisfied with the service provided. Chiropractic could play an even greater role within the Australian health if better integrated with the mainstream and allied medicine. A more active approach should be taken by chiropractic practitioners and institutions to improve the general public's knowledge about chiropractic.

INDEX TERMS: CHIROPRACTIC; MANPOWER; SUPPLY AND DISTRIBUTION.

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INTRODUCTION

Recent research shows that there is an increased interest in and use of complementary and alternative medicine (CAM) in a number of countries.¹ Remarkably, this is happening at the time when conventional medicine is experiencing an unprecedented high rate of advancement in clinical and basic

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The Work Force Study (WFS) was funded by the Chiropractors' Association of Australia National (CAAN) and Macquarie University. No other financial support was provided for this research. The authors did not receive any financial incentives for this research. Therefore no conflict of interest was declared. science research and, consequently, a rise in the number of people benefiting from this service. Indeed, CAM seems to have thrived in developed countries such as the USA, Canada, Australia and certain Western European countries, in which the benefits of modern biomedicine are felt most profoundly.¹ Furthermore, in most countries CAM treatment is not covered by national insurance systems and therefore the cost of treatment is paid by patients directly. All this suggests a high motivation to use CAM on the part of the patient.

Australia is one of the countries in which the use of CAM is substantial and its popularity is on the increase.²⁻⁵ One of the professions that features prominently in the current landscape of Australian CAM providers is chiropractic. The chiropractic profession has a long history in Australia, and the number of registered practitioners is increasing.⁵ Furthermore, Australia is one of the few countries in which chiropractic is taught in government funded universities. In fact, the world's first such department was established at Macquarie University in 1991. This expansion of chiropractic

has happened in spite of some strongly constraining factors. For example, chiropractic is not covered by the Australian health insurance scheme (Medicare), although it is partially covered by most private health care schemes. Furthermore, chiropractic in Australia has received some negative publicity in recent years with the validity and efficacy of some aspects of chiropractic (and other CAM disciplines) and its place in the government funded universities having been vigorously called into question, by some interest groups such as the Friends of Science in Medicine.⁶

The reasons for the increase in demand for CAM, which have not yet been satisfactorily researched, seem to be many and different in nature. They are to be sought not only within changes in modern medicine and developments in CAM but also in the broader social, economic and political dynamics within a particular society in recent decades.7 Therefore, understanding the broader context and complex, multidimensional network of phenomena and relationships within which health systems operate is necessary to understand the position and significance of CAM in general and chiropractic in particular. As this complex network constantly changes and evolves there is a need to regularly evaluate the status and position of the particular health professions within it. As part of this process, we investigated the Australian general public and its relation to chiropractic.

The aims of this study were to ascertain the lifetime prevalence of the use of chiropractic in Australia and to investigate the perceptions and attitudes of the Australian general public about several issues: their health status (as related to chiropractic), the chiropractic profession, as well as chiropractic and health services in general. In the last two decades there have only been a few studies carried out, on samples that would be considered representative with appropriate methodological rigour,⁸ that investigated the attitudes of the general population towards CAM and chiropractic in Australia.^{2,3,6} The current study was a part of a broader project entitled the Work Force Študy, which focused on the current state of chiropractic in Australia.^{9,10} This project was carried out through three large scale surveys: first focusing on the practitioners,¹¹ second on the chiropractic patients and third, the results of which are presented here, on the Australian general public.

METHODS

The research was carried out using a novel 21-item survey questionnaire. The questionnaire (Appendix 1) consisted of two parts. Basic demographic data of the respondents was recorded in the first section of the survey: age, gender, country of origin, language spoken at home, level of education, occupation, average annual household income and the place (suburb) of residence. In the second part, questions relating to chiropractic and chiropractic services were asked, including questions on respondents health status (presence of discomfort or pain, particularly in the spine and limbs), health practitioners consulted with regards to therapy and relief of the symptoms, expectations of health practitioners, and motivation to seek health care as well as more specific questions on chiropractic such as previous usage and satisfaction with the service provided. The questionnaire combined open-ended and closed questions; the latter were with dichotomous and nominal-polytomous options as well as scaled questions with Likert-scale options.

The questionnaire was administered in an electronic format via SurveyMonkeyTM. The data were collected between the 10th and 15th of January 2012. Sampling was carried out by an independent party – MyOpinions, a professional market research agency specialising in on-line surveys. The services of MyOpinions were employed in order to utilise their extensive databases and to minimise potential bias. Using the data from the Australian Bureau of Statistics¹² as a reference, stratified sampling was used to obtain representative samples of different strata of the Australian society with regards to age, gender and geographical distribution. Invitation to participate in this survey was sent to adults (18 years of age or over) who were Australian residents.

Descriptive statistics (tables and histograms) were used to summarise the findings and the chi-squared test and logistic regression were used to examine relationships between variables.

The ethics approval for this project was granted by the Macquarie University Human Research Ethics Committee.

RESULTS

Sample

For this survey, 842 adult members of the Australian public, sourced from the MyOpinions national database, accessed an electronic survey link. From these, a total of 757 respondents completed the survey. As noted earlier to obtain a sample of respondents whose opinions would be representative of the Australian general population with a 95% level of significance and 4% margin of error, a sample of at least 600 respondents was needed. Because a higher number of respondents were actually surveyed this implies a smaller margin of error (greater precision) was obtained. Not surprisingly (because of the design of the study), respondents for this survey closely resembled the demographic distribution reported in the 2011 Australian census¹² for the variables stratified for *i.e.* age, sex and geographical location (Table 1). Differences were observed for other census variables (see also Table 1) such as education, where lower percentages were obtained for the lowest age categories compared to the census, and a higher percentage of sample respondents had Year 12 education. Also the lowest and highest income groups were under-represented, though these may be the people who chose to not state their income. These differences however are not expected to impact on the validity of the responses.

Symptoms

Apart from assisting patients with the management of their health and well-being, chiropractors devote most of their energies to the care of patients with pain syndromes, focusing on the musculoskeletal system – particularly the spine and extremities. Thus, the respondents were asked whether or not they experienced discomfort or pain in various regions of the body. In this sample, 89.4% of respondents stated that they had suffered pain in at least one of the regions of interest, 31% had suffered pain in one or two of the specified areas, and nearly 60% in three or more areas. The most commonly reported pain was from the lower back (71.1% of the respondents) and neck (55.6%), followed by headaches (45.5%) and pain from the shoulder (45.2%) (Figure 1).

	Frequency (%)	2010 Census Data (%) 49.8		
Males	387 (51.1)			
Age				
<25	88 (11.6)	13.2		
25-44	293 (38.7)	35.1		
45-64	255 (33.7)	30.7		
>64	121 (16.0)	17.0		
Geographical location				
New South Wales	219 (28.9)	32.4		
Victoria	197 (26.0)	24.8		
Queensland	162 (21.4)	20.2		
South Australia	61 (8.1)	7.3		
Western Australia	75 (9.9)	10.3		
Other	35 (4.6)	4.9		
Missing	8 (1.1)			
Education				
Below year 10	19 (2.5)	6.7		
Year 10/11	93 (12.3)	19.9		
Year 12	204 (26.9)	20.4		
Certificate/diploma	199 (26.3)	27.5		
Bachelor degree/diploma	166 (21.9)	20.3		
Postgraduate degree	64 (8.5)	5.1		
Missing	12 (1.6)			
Income				
<40K	202 (26.7)	31.3		
40-90K	250 (33.0)	33.1		
90-140K	106 (14.0)	15.7		
>140K	46 (6.0)	19.9		
Not stated	153 (20.2)			

Table 1

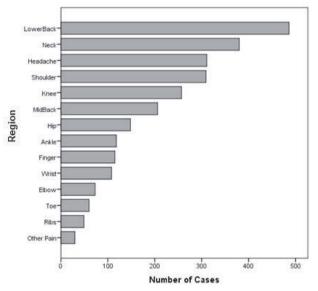


Figure 1: Prevalence of Different Types of Discomfort or Pain

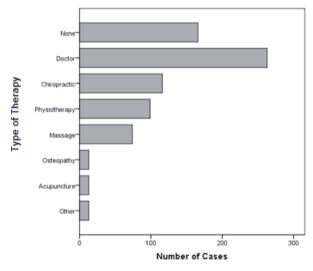


Figure 2: Respondent's First Choice of Therapy

With regards to age and gender, males and females of the same age groups, experienced pain syndromes with a similar relative frequency in almost all areas (results not presented). Some notable exceptions include the higher prevalence of headaches, neck, and lower back pain in females. Females under 65 are more likely than males to suffer headaches ($\chi_1^2 = 31.088$, p<0.001); in age group 25-44, females are significantly more likely than males to suffer lower back pain ($\chi_1^2 = 7.092$, p<0.01); in age group 25-44, females are significantly more likely than males to suffer neck pain ($\chi_1^2 = 11.214$, p<0.001).

Therapy Utilisation

Respondents were asked which healthcare professionals they would choose as their first contact with respect to therapy for their current health needs. They were presented with a list of six professions and were also offered the option of specifying another strategy or to opt for not engaging a health profession. As shown in Figure 2, a medical practitioner ("Doctor") was the first contact with respect to therapy for the highest number of respondents (35.5%). The next most popular answer was that respondents would choose to see 'no one' (19.3%). This response may reflect the possibility that they may have been symptom free at the time of responding to the survey and therefore felt no desire to consult anybody. Chiropractic was scored as the third highest option on this question (16%), ahead of physiotherapy (13.8%) and massage (10.2%). Osteopathy, although closely related to chiropractic in some ways, ranked far below (1.8%) the other therapies. No significant differences in the choice of therapy with regards to income (p=0.317) and gender (p=0.148) were detected. A highly significant difference in choice of therapy was observed for age (p<0.001), whereby older respondents were more likely to seek a doctor compared to younger respondents, and younger respondents more likely not to select a practitioner at all as first contact. This is perhaps a reflection of younger participants having a lack of current health problems as noted earlier.

It was also of interest to ascertain whether the choice of healthcare professional for first contact was informed by, or related to the nature of the respondent's health problems. As such, only those who responded 'yes' to each type of pain were examined in the following analyses. Overall medical doctors were the most popular choice as a first contact professional for all types of pain and chiropractic was the second most popular choice. For lower back pain, respondents were significantly (p<0.001) more likely to choose medical practitioners, chiropractic and physiotherapy than other therapies as their first contact. For neck pain, respondents were significantly (p<0.001) more likely to choose medical practitioners, chiropractic, and massage than other therapies as their first contact. This pattern was similar for shoulder pain (p<0.001). For mid-back, rib, hip, knee and wrist pain respondents were significantly (p≤0.001) more likely to choose medical practitioners and chiropractic than other therapies. For headaches respondents were significantly more likely (p<0.001) to go to medical practitioners, chiropractors, or to not consult anyone from other therapies. For elbow, ankle, finger, and toe pain, respondents were significantly more likely (p<0.001) to go to medical practitioners than anyone else as their first point of contact.

Respondents were asked to identify which therapy helped them the most with easing their symptoms. On this question respondents identified other therapies as the highest (23%), physiotherapy the second highest (18%), followed by chiropractic (15.9%), massage (15.5%) and medical practice (14%) (Figure 3).

Use of Chiropractic

Respondents were asked if they had previously sought chiropractic care. An affirmative response was received from 302 (39.9%) participants who answered the question. Using logistic regression with previous chiropractic use as the outcome and gender, age group and income group as predictors we found that neither gender (p=0.667) nor income group (p=0.842) were associated with previous

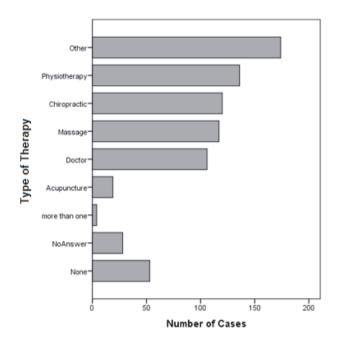


Figure 3: Patient's opinion of which therapy was most beneficial in alleviating discomfort and pain.

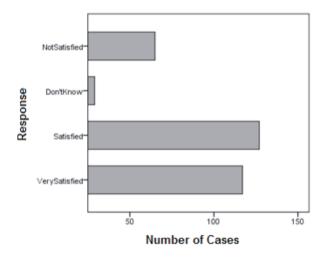


Figure 4: Satisfaction with Chiropractic Care

chiropractic use. However, the age groups variable indicated that, after adjustment for gender and income, the two oldest age categories (45-64 years and >64 years) had significantly higher odds (2.7 [95% CI=1.6 to 4.6] and 2.4 [95%CI=1.3 to 4.5] respectively) of previous chiropractic use compared to the youngest age category.

Respondents were questioned about their satisfaction with the chiropractic services that they had received in the past. The great majority of this subset of the cohort had a positive reaction to the care they received (Figure 4). At 75.9%, over three quarters of the respondents who had chiropractic care were either satisfied or very satisfied with these services. Those who did not use chiropractic offered different reasons for their decision not to consult a chiropractor. The most common reason was that there was no need to consult a chiropractor or that the symptoms and pain were not of sufficient intensity to warrant chiropractic intervention. Other common reasons were: cost of treatment, not knowing much about chiropractic, never having been referred to a chiropractor, already being attended to by another health professional (most often physiotherapist), and concern about the safety and efficacy of chiropractic treatment.

Attitudes to Health Care

Respondents were asked about their main goals in health care, specifically if they were only interested in alleviating symptoms (Table 2). Overall, participants reported a mild disagreement with the statement that they were only interested in alleviating symptoms. When presented with the alternate statement "I believe treatment should be aimed at improving my general health and well-being more so than focusing on symptoms" respondents as a whole showed high levels of agreement. Respondents were more likely to agree than to disagree with the statement "My personal philosophy influences me in deciding who I see for my health care". Responses were consistent across age and gender categories in their agreement or disagreement with all three of the above statements. Participants were more likely to disagree with the statement that family tradition influenced their selection of healthcare practitioner. While there were no gender differences in responses to this question, participants older than 45 were more likely to disagree.

DISCUSSION

Chiropractic is defined by the World Federation of Chiropractic as "a health profession concerned with the diagnosis, treatment and prevention of mechanical disorders of the musculoskeletal system, and the effects of these disorders on the function of the nervous system and general health. There is an emphasis on manual treatments including spinal adjustment and other joint and soft-tissue manipulation." ¹³ Indeed, research shows that the majority of the patients who use spinal manipulative therapy, do so because of musculoskeletal disorders.¹⁴⁻¹⁶ This is also corroborated by results from the other two Work Force Study surveys of which highlight a focus by chiropractic consumers on musculoskeletal disorders and general health and well-being.¹²

This survey shows that in Australia there is a high prevalence of pain and discomfort in body regions which are of interest to chiropractors: lower back, neck, shoulder as well as headache. Some differences were detected with respect to age, gender and the type of pain - the clinical implication of this finding should be further investigated. The results of this survey also suggest that when patients are looking to alleviate pain and discomfort they seek help primarily from the medical practitioners. One may hypothesise that one of the reasons for this is that patients visit general practitioners. Chiropractic was viewed by respondents as the second choice in this respect. Furthermore, chiropractic seems to have an excellent reputation for alleviating pain and discomfort, second only to physiotherapy. Future research should focus

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Table 2:

Respondent's Attitude Towards Healthcare, n (%)									
Health Care	Strongly Agree	Agree	Don't Know	Disagree	Strongly Disagree	N/A	Number of Responses		
With respect to my health care problems, I am only really interested in alleviating the symptoms.	57	233	91	261	84	22	748		
	(7.6)	(31.1)	(12.2)	(34.9)	(11.2)	(2.9)			
I believe treatment	170	380	108	61	13	15	747		
should be aimed at improving my general health and well-being more so than focusing on symptoms.	(22.8)	(50.9)	(14.5)	(8.2)	(1.7)	(2.0)			
MY personal philosophy influences me in deciding who I see for my health care.	131	389	111	74	13	26	744		
	(17.6)	(52.3)	(14.9)	(9.9)	(1.7)	(3.5)			
Family tradition has influenced me in deciding who I see for my health care.	34 (4.6)	183 (24.6)	98 (13.2)	276 (37)	115 (15.4)	39 (5.2)	745		

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on gathering more data on patient satisfaction with medical management of musculoskeletal disorders.

Medicine remains the first choice for health consumers. While medicine in this study was not perceived as the best option for easing symptoms, it seems to be attractive to consumers for other reasons. Just because a therapy has the ability to ease symptoms does not mean that it is the best choice of health care. For instance, some therapies relieve symptoms but if their effects are short term only, and do not contribute to a cure; they may not be viewed as a good health care option. Conversely, if the side-effects associated with easing symptoms via a certain modality are significant, this too may influence consumer perceptions. This is supported by the current study as it shows that majority of the survey participants believe that the ability to ease symptoms did not equate to a therapy being the best health choice. Furthermore, medical care is currently a relatively low or cost-free option in Australia which may influence the decision making process of healthcare consumers. Some consumers identified with medicine being 'scientific' thus making it an attractive choice over other therapies.

The results of this survey indicate that the lifetime prevalence of the usage of chiropractic in Australia is 39.9%. This finding concurs with a previous study by Wilson *et al*¹⁷

published in 2007, suggesting a lifetime prevalence of 43%. Xue *et al* suggest that the annual prevalence figure is around 16%.³ Other surveys ^{2,3,5} have established chiropractic as one of the most popular and most frequently consulted CAM professions in Australia, and this study seems to further corroborate this notion.

The results of this study are in alignment with those of Xue et al who found no significant difference in the use of chiropractic with relation to gender and age.³ Xue et al also found that the individuals from households with an income higher than AUD \$20,000 are more likely to utilise chiropractic services.³ The current survey did not distinguish income brackets below AUD \$40,000 (the lowest being "less than AUD \$40,000"), subsequently the subtleties that may exist between consumers of chiropractic with low to verylow incomes were not captured in this study. No differences were found between income groups (see Table 1) with regards to previous visits to a chiropractor. One could infer from this data that only the most economically disadvantaged are less likely to use chiropractic. This is to be expected as the individuals belonging to this group are the least capable of paying for health related expenses not covered by the Medicare, or paying for membership in private insurance schemes, some of which cover the chiropractic profession.

Most of the participants who reported using chiropractic were satisfied or highly satisfied with the services provided. Although the number of those dissatisfied with chiropractic treatment is rather low, it is imperative for future research to try to establish the main reasons for dissatisfaction in this subset of patients.

The comments received from the respondents who reported that they had never used chiropractic services before are also instructive. Some of the main concerns were the cost and lack of referral from medical practitioners. One may hypothesise that better integration of chiropractic within the Australian health system would almost inevitably lead to a significant increase in the number of patients. One of the ways to achieve this might be through better collaboration and integration with mainstream medicine and allied medical professions such as physiotherapy. The latter, although not a primary healthcare provider, has several common attributes with chiropractic, and the two disciplines, as this study seems to show, are seen as most successful in relieving symptoms. The cooperation could be sought at different levels - individual practitioners, professional organisations and academic institutions. The last group is perhaps in the best position to further the process through collaborative education and research projects. These collaborative and integrative endeavours would also be an antidote against the above mentioned challenges to the efficacy of chiropractic and its place in university settings.

Other frequent reasons why chiropractic services were not utilised were the participant's lack of knowledge of chiropractic and concern about safety. This implies that better public understanding of chiropractic could lead to further increase in the number of patients. The current survey suggests that personal philosophy is an important factor in the choice of health practitioner. Therefore, one might expect, that accurate and reliable information (particularly that which is based on reliable scientific research) on chiropractic, its nature, focus and efficacy (as a primary care provider) might play an important role in the decision making process of patients. Furthermore, participants in this survey tended to agree that with respect to treatment, improving general health and well-being was more important than focusing on symptoms alone. Potential consumers of chiropractic have to be aware of the fact that improvement of general health and well-being are among the main focuses of chiropractic care.

Active engagement in education and the public presentation of chiropractic is particularly important in light of the recent assessment, according to which Australian media reporting on both CAM and conventional medicine is far from ideal.¹⁸ Individual chiropractors in conjunction with institutions could perhaps play a more engaging role in enhancing public understanding of chiropractic. Similar suggestions concerning informing and education general public was advanced in a previous study of Australia's general public attitude towards chiropractic.¹⁷

CONCLUSIONS

This study concurs with other similar studies by suggesting that chiropractic is a thriving profession in Australia. There seems to exist a need for chiropractic services, particularly in attending to the highly prevalent realm of musculoskeletal disorders. A significant proportion of the Australian adult population, it would appear, already utilises chiropractic services and a considerable number of this subgroup of the population is satisfied with the service provided. It is suggested that chiropractic can make its place within the Australian health system even more prominent if these services were better integrated and covered by national insurance schemes, and if concrete steps were carried out to further improve profession's image as a primary health care provider.

Acknowledgements

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Appendix 1: General Public Questionnaire

The questionnaire is available from <u>http://chiro.mq.edu.</u> au/Research/projects/Workforce_Study_General_Public_ <u>Survey.pdf</u>

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WIN! WIN! WIN!

When professionally conducted, Community Spinal Health Checks represent:

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It is generally accepted that only 12% of the Australasian population have ever visited a Chiropractor. This unique statistic highlights the staggering potential to increase the awareness and usage of chiropractic care as an important contributor to health and wellness in the community.

Community Spinal Health Checks provide an ideal opportunity to introduce members of the general public to the benefits of Chiropractic in a safe, professional and non pressured environment.

A greater awareness of chiropractic care and its benefits is created with the public, which leads to greater direct participation with the chiropractic industry.

Recipients of Community Spinal Health Checks are invited to consider a voluntary donation of \$20 to the Australian Spinal Research Foundation.

Given that only 12% of the Australasian population has experienced chiropractic care, the opportunity to increase the number of patients visiting individual chiropractic practices within a specific locality is immediately apparent.

The Australian Spinal Research Foundation has prepared a kit for conducting Community Spinal Health Checks and is seeking registrations from those practices genuinely interested in conducting health checks in the community to support Chiropractic, spinal research and their practice.

Simply call the Foundation on 07 3808 4098 to sign up and have any questions answered.

The Foundation is totally committed to ensuing Community Spinal Health Checks are conducted in a professional manner and within the Code of Conduct and guidelines of the various Registration Boards. The Foundation will immediately disassociate itself from any Community Spinal Health Check not conducted within these guidelines.

