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Research Report

Assessing Hauora Māori in Medical Students in Clinical Settings

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Executive Summary

Introduction

Cultural competence and equity are important goals of medical education (Betancourt, 2006b; Sanson-Fisher *et al*., 2008). It is important that health professional education programmes in Aotearoa New Zealand contribute to improving Māori health and promote reduction and elimination of health inequities (Bacal *et al*., 2006; Jones *et al*., 2010). Assessment of student competence in this area is a critical piece of the puzzle; the higher education literature stresses the role that assessment of learning plays in defining what learners should know and be in order to be a successful student (see, for example, Brown & Knight, 1994). It follows that assessment processes must be aligned with educational goals relating to cultural competence and equity (Betancourt, 2006b; Smith *et al*., 2007).

Current assessment of Hauora Māori in clinical settings is limited, inconsistent and not well aligned with the graduate profile. More valid and reliable tools for assessing Hauora Māori (and related topics) are clearly needed. Improvements in the alignment and effectiveness of assessment in this area of the curriculum are expected to facilitate appropriate learning and also to give students high-quality, evidence-based feedback about their performance and ongoing professional development needs.

In medical curricula, as in many other professional programmes, educators attempt to prepare students to meet professional expectations by involving the students in periods of workplace learning. Assessment of professional attitudes and values in these settings is problematic. For example, methods for assessing integrative, relational and affective competencies are less well established than those used in knowledge and skills domains (Epstein & Hundert, 2002). It is our and others' experience (e.g. Stephenson *et al*., 2006) that many clinicians avoid assessment in these areas, possibly because they struggle with the attitudinal assessment that it requires.

A recent review of Māori health teaching in undergraduate health programmes at the University of Auckland led to revision of the graduate learning outcomes for the Hauora Māori domain (Jones, 2011). Mapping curricula against this graduate profile identified that existing assessment methods failed to comprehensively assess all relevant learning outcomes. Important gaps were noted in the latter part of the programme, where much of students' learning occurs in clinical settings. Assessment of Māori health in these settings was identified as being inconsistent, somewhat repetitive and not well aligned with the newly developed learning outcomes.

Aims and objectives

The overarching goal of this project was to develop effective assessment methods, tools and staff development processes that can be broadly used to assess Māori health competencies in clinical settings.

The specific objectives of this project were as follows:

1. develop two new assessment tasks and associated marking schedules
2. pilot these assessment methods in a clinical learning environment, with associated development and support for clinicians in the pilot areas
3. modify the assessment methods and tools as appropriate
4. implement the assessment tasks and associated staff development at different clinical teaching sites
5. evaluate the new methods of assessment
6. refine the tools and develop recommendations for expansion into other clinical teaching settings.

This project was conducted at the Faculty of Medical and Health Sciences, University of Auckland, and sought to improve the Māori health curriculum with particular regard to assessment. The medical curriculum at the University of Auckland was structured around four domains, one of which is Hauora Māori (Māori health). Each of these domains were integrated vertically across the programme, from the Health Sciences foundation (Year 1) through Phase 1 (years 2 to 3, which are primarily non-clinical) to Phases 2 and 3 (years 4 to 6, which are primarily clinically-based).

Methods

A multi-stage process was undertaken to address the research objectives, as follows:

1. Development of assessment tools.
2. Development of an evaluation tool.
3. Piloting of the assessment and evaluation tools.
4. Implementation and evaluation of the assessment tools.

1. Development of assessment tools

In developing new tools for assessing Hauora Māori in clinical learning environments, key considerations were:

- theory and evidence about assessment of Hauora Māori and related competencies
- acceptability to students and educators
- feasibility of implementation in the context of the medical curriculum.

Development of the tool was informed by three main sources of information:

- a literature review of assessment methods and tools
- a workshop with clinical teachers
- student feedback.

Based on the information gathered from these sources, it was decided that the assessment tasks would be administered in the Year 4 General Medicine clinical attachment. This allowed the new assessment tasks to be introduced without increasing the overall assessment load on students. By mapping available assessment options against the desired learning outcomes, and considering the options in light of acceptability and feasibility considerations, it was decided that the two assessment tools piloted and evaluated in this project would be a reflective commentary and a modified case report.

2. Development of the evaluation tool

A student questionnaire was developed to evaluate the new assessment tools. This questionnaire was administered before and after assessment. The questionnaire tapped three key domains of investigation: attitudes/beliefs, engagement, and satisfaction. Attitudes and beliefs were measured in both pre- and post-attachment questionnaires, while engagement and satisfaction were primarily evaluated in the post-attachment questionnaire.

3. Piloting of the assessment and evaluation tools

Piloting of the assessment tools

The assessment tools were piloted in two rotations of Year 4 General Medicine at three participating clinical teaching sites. The reflective commentary and the modified case report were piloted at separate clinical teaching sites. The pre-existing assessment tool, a case report, was used at a third clinical teaching site in order to provide a control group. Evaluation questionnaires were distributed to students at the beginning and end of their attachment. The questionnaire results from the pilot rotations did not suggest any potential improvements to either the reflective commentary or the modified case report. In addition, those marking the assessments did not identify any necessary improvements. Both assessments were therefore used unchanged for the remainder of the implementation period following the pilot phase.

Piloting of the evaluation tool

The two clinical rotations were also used in the initial period to pilot the evaluation questionnaire. For the items measuring student attitudes and beliefs, a series of statistical analyses were conducted, including reliability coefficients and a factor analysis. Three factors were identified: ‘cultural competence is important’; ‘ethnic inequalities exist’; and ‘non-deficit analysis’.

4. Implementation and evaluation of the assessment tools

The new assessment tasks were implemented as part of a six-week clinical attachment that all medical students complete in Year 4. Groups of students rotated through this attachment, with each student being allocated to one of four teaching hospitals. Three of the four teaching hospitals were involved in this study, comprising

a total of 255 eligible students. The study period covered eight cycles over an 18-month period. The design is summarised in Figure 1.

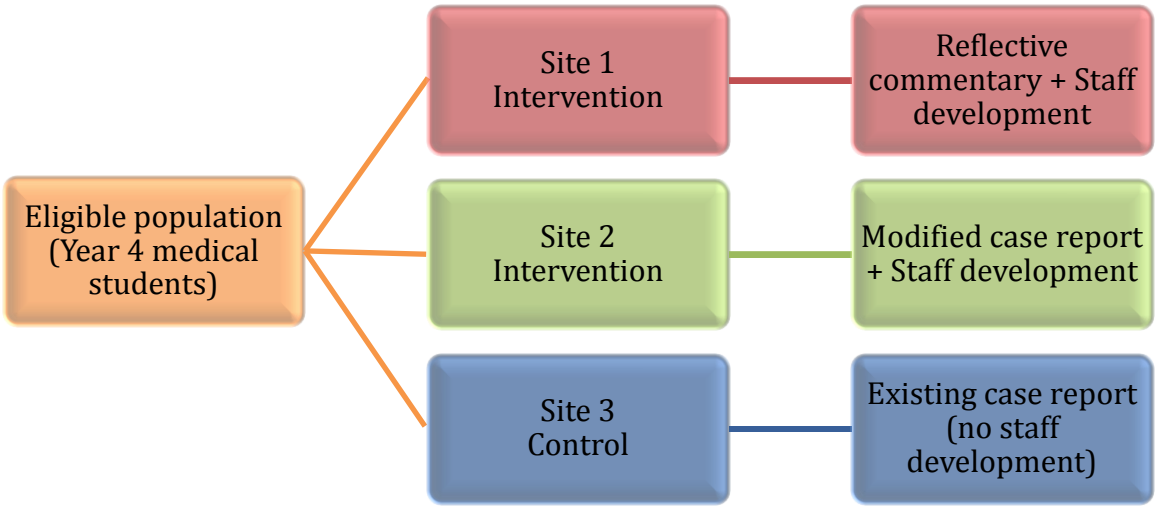

Figure 1: Assessment tasks used across each intervention site.

Questionnaires were administered to students at the beginning and end of their attachment (before and after completing the assessment).

Key findings

Of a total of 255 eligible students, 199 (78%) completed pre-attachment questionnaires and 159 (62%) completed post-attachment questionnaires.

Attitudes and beliefs

Responses to the Likert scale items were converted to numerical values, from 1 ('Strongly disagree') to 5 ('Strongly agree'). Analyses were conducted using the mean scores, with a higher mean score indicating stronger agreement with a statement.

There were no significant differences between pre- and post-attachment scores for the reflective commentary or modified case report. For the control group, however, students demonstrated a significant decrease in the attitude 'cultural competence is important' between the pre- and post-attachment questionnaires.

Comparison of factor values across the three study groups showed that post-attachment values for all three factors were significantly higher for the reflective commentary than for the control group.

Student engagement

No significant differences were evident across the intervention for student engagement.

Satisfaction

The key items of interest in this domain related to the evaluation of the written assessment tasks. These items were rated significantly higher ($p < 0.05$) for the reflective commentary group ($M = 3.38$, $SD = 0.80$) than for the control group ($M = 2.48$, $SD = 1.60$). They were also rated significantly higher ($p < 0.05$) for the modified case report group ($M = 3.32$, $SD = 0.88$) than for the control group ($M = 2.48$, $SD = 1.60$). No significant differences were found between the groups doing the reflective commentary group and the modified case report.

Qualitative findings

A number of themes were identified from free-text comments provided by students on the post-attachment questionnaires. These themes included:

- 'we appreciated learning about Māori health'
- 'reflective approach is good'
- 'more structured teaching and assessment is needed'
- 'we lack contact with Māori patients'
- 'need to address other cultures'.

One aspect of these focus group data of concern is the reporting by several students that they put little effort into their Māori Health assessment, either because of other demands on their time or because they did not consider the assessment to be important.

In summary, there was little change in students' attitudes and beliefs over the course of the clinical attachment. There was no improvement in factor values at any site; the only significant change in these scores occurred at the control site, where Factor 1 (Cultural competence is important) moved in a negative direction.

While significant findings in terms of effects on educational outcomes were limited, important insights have emerged from the research. It has highlighted some shortcomings of the 'apprenticeship' model of learning, particularly for curricular domains such as Hauora Māori. It appears that incorporating a reflective component into assessment of Hauora Māori is acceptable to students and does not have any obvious disadvantages when compared to the existing assessment task.

Implications for teaching and learning

The findings of this study are relevant to other educational contexts where students are expected to develop and demonstrate professional qualities in workplace settings. The importance of explicitly assessing competency areas such as Hauora Māori, despite the difficulty involved in doing so, cannot be overstated. If curricular domains like these are not formally assessed, they can be seen by students as less important and therefore not emphasised in their learning (see, for example, Lypson *et al*., 2008).

Self-reflection is an important vehicle for changing professional behaviour to encourage more equitable clinical practice (Murray-Garcia *et al*., 2005). Our data point to some of the limitations of the 'apprenticeship' model of learning, or at least of the way this model is operationalised in the educational context under investigation. When clinical supervisors privilege the knowledge and clinical domains, while at the same time failing to address the Hauora Māori domain, it sends a powerful message to students about the relative value of different facets of professional competence.

Considerable work is required to look at how to develop a cadre of clinical supervisors who are better prepared to facilitate learning and undertake assessment in the Hauora Māori domain. Our experience suggests that, without higher level acknowledgement of the importance of Hauora Māori, competing demands on clinical teachers will continue to inhibit effective participation in staff development activities. It is therefore clear that institutional commitment is an important prerequisite for progress in this curricular domain.

Recommendations

Based on the findings of this project, organisations, curriculum leaders and supervisors are encouraged to:

1. develop, implement and evaluate assessment tasks that emphasise the demonstration of Māori health competencies in clinical practice
2. address the assessment of Hauora Māori from a programmatic perspective
3. ensure that assessment in areas such as Hauora Māori is valued
4. increase capacity among clinical teachers for assessment of Māori health
5. demonstrate institutional commitment to Hauora Māori and related areas.

Introduction

Background

Assessment plays an important role in defining what learners should know and be in order to be a successful student (Barrow, 2006; Biggs & Tang, 2007; Brown & Knight, 1994). Proper attention to assessment practices is a vital step to ensuring that a programme is able to meet its educational goals.

Betancourt (2006a) suggests that, despite considerable variation in teaching and learning approaches, the goal of cultural competence education is relatively simple: to ensure that health professionals are prepared to provide quality care to diverse populations.

The educational goals of professional programmes encompass more than intellectual and skill development: graduates are expected to embody the knowledge and skills in a manner that enables them to meet the standards expected of a practitioner of the profession. Such embodiment requires a greater emphasis on students' ontological development (their way of being in the world) and less on their epistemological development (their way of knowing) than is currently the case (see for example, Dall'Alba & Barnacle, 2007).

For medical practitioners, the definition of competence has broadened to encompass a wide range of attributes (Epstein & Hundert, 2002). The Medical Council of New Zealand (Medical Council of New Zealand, 2008) identifies the following domains of competence for doctors:

- medical care
- communication
- collaboration
- scholarship and professionalism.

Cultural competence and equity are important goals of medical education (Betancourt, 2006b; Sanson-Fisher *et al*., 2008). Indeed, medical schools are being asked to show greater social accountability (Boelen & Woollard, 2009; Dharamsi *et al*., 2011). It is therefore important that health professional education programmes contribute to improving Māori health and promote reduction and elimination of health inequities (Bacal *et al*., 2006; Jones *et al*., 2010).

It follows that assessment processes must be aligned with educational goals relating to cultural competence and equity (Betancourt, 2006b; Smith *et al*., 2007). However, while established methods exist to reliably assess knowledge and technical skills, there is less strong evidence about approaches for assessing other domains such as integrative, relational and affective competencies (Epstein & Hundert, 2002).

In medical education, as in many other professional programmes, much of the students' preparation for practice takes place in clinical settings where students work alongside clinicians who seek to educate, mentor and assess them. Assessment of

professional attitudes and values in these settings can be problematic. It is our and others' experience (*e.g.* Stephenson *et al*., 2006) that many clinicians avoid assessment in this area, possibly because they struggle with the attitudinal assessment that it requires. This results in clinical teachers either failing to address attitudinal components of the assessment and focusing on skills and knowledge domains, or making assumptions about attitudes and behaviours, and thus not challenging students who fail to meet expectations.

Assessment of Māori health in health professional education

Published literature relating to assessment of Hauora Māori (Māori health) and indigenous health in health professional education is limited. It is therefore instructive to consider related domains, such as cultural competence and cultural safety, which have more established bases in the literature. Much of this section refers to *cultural competence*, largely due to the prominence of this terminology in the health professional education literature. However, it is important to recognise that cultural competence is not synonymous with Māori and indigenous health (see, for example, Jones *et al*., 2010). It is useful to conceptualise these two disciplines as overlapping domains within health professional education. As a result, an examination of the theory and evidence relating to cultural competence will inform some, but not all, aspects of Hauora Māori teaching, learning and assessment.

A fundamental issue in this area is that there is no standard definition of cultural competence, no consensus on what the domain of learning comprises, and ongoing debate about how to put this broad construct into practice (Betancourt *et al*., 2003). Terminology varies considerably, with concepts including *cultural sensitivity, cultural awareness, cultural responsiveness, cultural humility,* and in the New Zealand context particularly, *cultural safety*. Each of these has a different emphasis and has emerged from different conceptual, epistemological, disciplinary and pedagogical bases. This leads to considerable variation in cultural competence teaching and learning in medical school curricula, with diverse activities such as language training, lectures and interactive sessions, workshops, student clerkships, elective courses, cultural immersion, specific rotations for residents and longitudinal curricular experiences (Crandall *et al*., 2003).

Cultural safety has been a particularly influential concept in the nursing profession in New Zealand. The Nursing Council of New Zealand has published ‘Guidelines for cultural safety, the Treaty of Waitangi and Maori health’, and cultural safety has been a required component of nursing training since 1992 (Papps & Ramsden, 1996). The key concepts behind cultural safety include reflection on one’s own cultural identity, which contributes to the ability to effectively nurse a person from another culture (Nursing Council of New Zealand, 2011). Challenges in implementation include the need to ensure that cultural safety is not treated as a ‘checklist’ approach to learning about other cultures, and the need to better integrate dimensions of culture other than ethnicity (Clear, 2008).

While there is increasing interest in and evidence about cultural competence teaching and learning in health professional education (Betancourt, 2006a; Smith *et al*., 2007), the knowledge base around *assessment* in this area appears to be less well developed. Critically, there is a lack of agreement on the specific attributes of this educational domain that should be assessed (Davis, 2007). Until relatively recently, cultural competence education has emphasised learning about the attitudes, values, beliefs and behaviours of different ethnic groups. However, this approach has been widely criticised (Betancourt *et al*., 2005; Gregg & Saha, 2006; Ramsden, 2002; Tervalon & Murray-Garcia, 1998); it can encourage a "cultural safari" mentality (Wear, 2003) rather than being grounded in social justice and equity. This refers to a tendency to portray minority cultural groups as 'the other' in relation to dominant cultural norms, and for educational goals to be based on learning about different 'cultures' rather than focusing attention on the health professional and health system.

It is generally accepted that a doctor's culture and belief system influences his/her interactions with patients and may impact on the doctor-patient relationship and healthcare outcomes (Burgess *et al*., 2004; Smedley *et al*., 2002; van Ryn, 2002; Williams, 2003). Betancourt (2006a) suggests that, despite considerable variation in teaching and learning approaches, the goal of cultural competence education is relatively simple: to ensure that health professionals are prepared to provide quality care to diverse populations.

One conceptual approach that may provide a useful guide to the assessment of cultural competence is Miller's pyramid, which comprises four levels at which students can be assessed (Miller, 1990). The *knows* level involves knowledge of facts and concepts, *knows how* is about problem solving and describing procedures, *shows how* involves demonstration of skills in a controlled setting, and the *does* level refers to actual performance in day-to-day practice. Assessment in clinical settings such as hospital services and primary care practices provides the opportunity to assess the more advanced *shows how* and *does* levels of competence, but may also involve the more fundamental levels. It may help to consider another level that reflects the attributes required to function well in educational domains such as Hauora Māori. Focusing solely on assessing behaviour, rather than attitudes and values, provides an incomplete picture of achievement in this area (Hafferty, 2006). Assessment should extend beyond observable behaviours to include the reasoning behind them (Ginsburg *et al*., 2004).

Indeed, it has been argued that conceptualising learning in this area in terms of 'competence' is problematic. This suggests that the aim is for students to master a body of knowledge and set of skills, whereas what is required is the development of a "critical consciousness" (Kumagai & Lypson, 2009). These authors argue that, because the object of knowledge is fundamentally different from the basic and clinical sciences, there is a need for different methods of assessment and a reorientation of the way assessment is carried out. Their recommendation is that

assessments should focus on “expression of internalized, patient-centered orientations, including openness and critical reflection in the area of working with patients in diverse societies”. It is critical, however, that this area of the curriculum is formally assessed, as otherwise it can lead to a perception among students that it is not important or valued (Lypson *et al*., 2008).

Review of available assessment methods and tools

Many different assessment methods are used in health professional education (Epstein, 2007; Wilkinson, 2007), although information about their use in assessing cultural competence and related domains of knowledge is limited. In this section we describe a range of key assessment modalities and examine them with regard to potential appropriateness for assessing Hauora Māori in clinical contexts.

Case reports

Assessment of a case report allows for evaluation of the student's information-collecting ability, clinical reasoning and written communication skills (McLeod, 1988). In terms of validity, case reports can be considered an authentic form of assessment. According to a survey of U.S. medical schools, write-up of the patient history and physical examination was considered to be the most important type of medical writing for medical students (Yanoff & Burg, 1988). Write-up of case reports has been shown to be a valuable learning exercise for students with high face validity reported (McLeod, 1989). However, in this study only 43 *per cent* of students felt that the evaluation of case reports was indicative of their overall clinical ability.

The ways in which case reports have typically been used in assessment of the Hauora Māori domain differ in important ways from a standard medical case report. In addition to the standard clinical history, students are generally required to provide a substantial discussion of the case; assessment focuses principally on the discussion section. In this sense, the assessment has close similarities to an academic essay.

There are a number of theoretical justifications for using case reports over other forms of assessment. In comparison to multiple-choice questions, for example, structured essays encourage more complex cognitive processes and allow for more contextual factors to be considered (Epstein, 2007). This type of assessment is particularly useful in assessing declarative knowledge (Biggs, 2003); it asks students to process information and knowledge rather than simply regurgitating or reorganising material they have learnt (Schuwirth & van der Vleuten, 2004). Extended prose assignments, which can be completed over a long period, potentially allow for deeper learning (Biggs, 2003).

One of the major problems with this type of assessment is low reliability (Biggs, 2003; Molenaar *et al*., 2004; Ramsden, 2003; Schuwirth & van der Vleuten, 2004). For example, intra-rater reliability of case reports in second-year internal medicine was found to be poor, even after assessors were provided with detailed instruction

on grading (McLeod, 1988). Also, because of the time required, relatively few of these types of assessment can be undertaken, increasing the sample error (Schuwirth & van der Vleuten, 2003). A related limitation is that written case reports cannot adequately reflect clinical performance over a wide range of patient problems (Molenaar *et al*., 2004).

In order to maximise the quality of measurement from case reports or essay-type assessments, a number of factors must be considered. Based on the work of McLeod (1988), for case reports to be an effective form of assessment requires multiple case studies over time marked by different examiners. Structuring the marking process, for example using grading criteria, is critical to ensure adequate reliability (Schuwirth & van der Vleuten, 2004). When clear guidelines are used, structured essays can be shown to be rigorous in measuring educational achievement (Epstein, 2007). However, it is important that the marking guidelines are not too structured as there is a danger that the content may be trivialised, particularly where more complex skills are being assessed (Norman *et al*., 1991).

Assessments by clinical supervisors

One of the most common tools used to assess students in clinical settings is assessment by supervising clinicians (Epstein, 2007), where students generally receive global ratings from supervisors at the end of a clinical attachment. This typically involves a form with a number of criteria, and the supervisor is asked to assess the trainee's level of achievement or competence for each item. This approach is used widely in the University of Auckland's medical programme. One benefit of this approach is that it may pick up on tacit elements of professional competence that can go undetected with more objective forms of assessment (Epstein & Hundert, 2002).

Wilkinson and Wade (2007) identify four major problems with using this method for summative assessment. The first relates to conflict of roles, where the supervisor is expected to both facilitate the student's learning and be the judge of that learning. Assessor specificity can affect ratings; if the report is the opinion of one person, it is potentially subject to unrecognised bias and can easily be challenged by students. A further problem is the halo effect, a well-recognised phenomenon that can result in a student being rated highly on certain aspects of performance when in fact they have strengths in other areas. With only one assessor there is a higher risk of this occurring. Finally, there is a tendency to increase the complexity of supervisor report forms in pursuit of better objectivity; however, this does not always improve reliability, and more global judgments can be just as reliable and useful (van der Vleuten *et al*., 1991).

Other problems with assessment by clinical supervisors have been noted. One major issue is that opportunities for direct observation of students interacting with patients are far too infrequent (Pulito *et al*., 2006). Also, there is evidence that different aspects of competence may be emphasised depending on the type of clinician

completing the report (Metheny, 1991). Because of low inter-rater reliability (Metheny, 1991; Pulito *et al*., 2007), each student needs to have multiple assessments to reliably measure competence. Carline *et al.* (1992) recommend a minimum of seven observations for each student based on a study examining ratings of clinical skills in a medicine clerkship. They also identified some competencies, such as relationship skills, that could not be reliably assessed in this way without an unfeasibly high number of observations. It is likely that Hauora Maori and cultural competence would be similarly problematic. For these attributes the authors recommend either using a different assessment method or providing more effective training for clinical supervisors.

Assessment of observed clinical encounters

This type of assessment involves a clinical supervisor observing the student performing a focused history taking and/or physical examination. In contrast to the more general assessment by clinical supervisors described above, in this type of assessment the student is assessed for performance during a specific clinical encounter (or set of clinical encounters). The mini-clinical evaluation exercise (mini-CEX; Norcini *et al*., 2003) is one example that is gaining currency in modern medical education (Epstein, 2007). It is conducted within healthcare settings using real patients, has a structured rating form, and the observed clinical encounter can be followed by discussion about the case. It has been shown to have high validity and reliability (Alves de Lima *et al*., 2007; Nair *et al*., 2008; Norcini *et al*., 2003), although achieving good reliability requires aggregation of multiple assessments over time, using different assessors (Wilkinson *et al*., 2009).

While the original mini-CEX does not include explicit consideration of cultural competence (it incorporates a global assessment of humanistic qualities/professionalism), a modification of this tool focuses more specifically on professional qualities. The Professionalism Mini-Evaluation Exercise (P-MEX) (Cruess *et al*., 2006) includes doctor-patient relationship skills and reflective skills as part of the scale. While not extensively studied as yet, this form of assessment appears to be a useful assessment method that can drive teaching and learning of professionalism (Cruess *et al*., 2006).

Multisource feedback

Multisource feedback (MSF) is a questionnaire-based form of assessment that gathers the perspectives of supervisors, subordinates, peers, clients and the assessed person themselves (Violato *et al*., 2009). These raters are required to assess observable behaviours such as written and oral communication, teamwork, collegial interaction and problem solving (Lockyer, 2003). The data is aggregated and the individual being assessed receives anonymous feedback on performance.

MSF is commonly used as a means of formative assessment (Sargeant *et al*., 2007) but can also be used for summative purposes (Violato *et al*., 2008). It is particularly useful for assessing attributes such as humanistic qualities, collegiality,

communication, patient management and professional development (Violato *et al*., 2009). One of the key advantages of MSF is that it can capture information on what students actually do in workplace-based learning contexts. It can assess behaviours that are difficult to assess under formal assessment conditions, as well as skills and behaviours that can be masked in more standardised assessments (Wilkinson *et al*., 2009).

It is possible for MSF to achieve highly reliable and generalisable results when sufficient numbers of raters and items are included (Lockyer, 2003). For medical professionals, for example, it is suggested that eight to ten medical colleagues, eight to ten non-medical co-workers and approximately 25 patients provide acceptable reliability (Violato *et al*., 2008). However, the validity of MSF has been questioned (Archer *et al*., 2005; Violato *et al*., 2003), particularly its consequential validity, or the impact on learning and practice improvement (van der Vleuten & Schuwirth, 2005). The outcomes from MSF have often been modest and adverse consequences have been reported. For example, MSF may result in emotional distress for participants who score poorly, but who lack specific feedback to inform them of areas in which they can improve (Sargeant *et al*., 2005; Sargeant *et al*., 2007).

It has been noted that MSF is most useful when narrative comments as well as quantitative responses are provided, when credible sources are used, when the feedback is provided in a constructive manner, and when there are mechanisms in place for good mentoring and follow-up on the basis of feedback (Epstein, 2007; Norcini, 2003).

Reflective commentaries

The ability to reflect on one's practice is an important aspect of professionalism (Jha *et al*., 2006; Wilkinson *et al*., 2009). Within the Hauora Māori domain there is an emphasis on critical reflection, which is a key component of transformative learning (Williams, 2001). For example, graduates are expected to be able to "engage in a continuous process of reflection on their own practice and actively participate in self-audit in respect of the Treaty of Waitangi" (University of Auckland, 2009, p. 9).

Achievement in the Hauora Māori domain depends in part on students being able to reflect on their future professional role as a doctor in respect of Māori health. This is consistent with the assertion that reflection and critical reflection are key requirements for professional competence (Schön, 1995). Self-reflection is an important vehicle for developing self-awareness and ultimately changing professional behaviour to encourage more equitable clinical practice (Murray-Garcia *et al*., 2005).

In this context, reflection can be defined broadly to include cognitive and affective processes by which learners explore their experiences to create new understandings and insights (Boud *et al*., 1985). Methods exist to assess the quality of students' reflection (Kember *et al*., 1999). Reflective journals, for example, can be used to assess reflective thinking in a relatively coarse way (for example, allocating students

to categories of non-reflector, reflector and critical reflector) (Chirema, 2007). Attempting more fine-grained assessments of reflective thinking, however, has been shown to be more problematic and less reliable (Wong *et al*., 1995).

A number of problems have been identified with assessing critical reflection, including difficulty achieving satisfactory inter-rater reliability and differentiating between actual reflection and mastery of reflective writing (Sumsion & Fleet, 1996). These authors conclude that reflection is not well suited to quantitative assessment. They suggest that assessment of reflection should not be reliant on traditional measures of academic ability; relying solely on written reflection, for example, is likely to disadvantage those who have not mastered the skill of reflective writing. Potential alternative strategies include the use of individual or small group discussions, although this clearly has limitations in terms of feasibility where there are a large number of students. Longitudinal assessment over the year (or entire educational programme) is supported; transformation is unlikely to occur in one semester (Snyder, 2008).

Self-assessment

In many curricula, assessment of cultural competence relies heavily on self-assessment. However, there is evidence that many learners are not very accurate in assessing their own performance (Hodges *et al*., 2001; Kruger & Dunning, 1999). In a study of specialist physicians, for example, it was noted that those who were rated lower by their peers tended to significantly overestimate their competence, while the opposite was true for the high performers (Violato & Lockyer, 2006). This type of assessment, for example in the form of a self-administered rating scale, can be useful for formative purposes and can act as a stimulus for reflection. However, it is limited as a summative tool as it cannot assess what a student or trainee actually does (Wilkinson *et al*., 2009). Self-assessment might, however, be an important aspect of evaluating the effectiveness of educational interventions (see following section).

General

While this section has reviewed a range of discrete assessment tools and examined their (theoretical) strengths and weaknesses, a more fundamental question is how individual assessments contribute to an overall picture of learner achievement. For example, case reports should allow for multiple assessments over time marked by different examiners (McLeod, 1988). Evidence for the development of cultural competence can be assembled by assessing the expression of critical awareness – such as thoughtful discussions, essays, and interpretive projects – over time (Kumagai & Lypson, 2009). “Multiple snapshots, even if some are not totally in focus, give a better picture than one poorly aimed photograph” (Wilkinson, 2007).

Context for the study

The study was conducted at the Faculty of Medical and Health Sciences, University of Auckland. The Faculty has demonstrated commitment to the development of Māori health teaching and learning by promoting a core Hauora Māori curriculum (Jones, 2011). This research project was motivated in part by an imperative to improve the Māori health curriculum, and in particular assessment of this domain.

Overview of the Hauora Māori curriculum

At the time the study was conducted, the medical curriculum at the University of Auckland comprised four broad domains:

1. Acquisition and application of medical knowledge
2. Professional, clinical and research skills
3. Hauora Māori (Māori health)
4. Population Health and Primary Health Care.

The curriculum included learning outcomes, teaching and learning activities, and assessment structured around these domains. Each of these domains were integrated vertically across the programme, from the Health Sciences foundation (Year 1) through Phase 1 (years 2–3, were primarily non-clinical) to Phases 2 and 3 (years 4–6, which were primarily clinically-based).

While Māori health was addressed in many different contexts within the programme, there were discrete units of dedicated Hauora Māori teaching, as follows:

- Foundational material was covered in a series of lectures during a Year 1 Population Health course.
- Māori Health Week: a compulsory inter-professional learning activity that is compulsory for Year 2 medical, nursing and pharmacy students. It was based around small group work on a case study, and provided an opportunity for students to reflect on Māori health, the impact of health services and the role of health professionals in addressing Māori health.
- A two-and-a-half-day teaching block in Year 4, which included experience on a marae, small group te reo Māori teaching and clinical scenario-based learning.
- A half-day session with final-year students that focused on cultural competence and encouraged students to reflect on their professional development in relation to Hauora Māori.

Additional learning activities were integrated into other teaching components. These included sessions as part of cultural competence during second- and third-year students' Professional, Clinical and Communication Skills course, teaching in the inter-professional Quality and Safety unit in Year 3, and an interactive session as part of the orientation to Year 5 students' clinical attachment in Paediatrics.

Assessment in the Hauora Māori curriculum

A recent review of Māori health teaching in undergraduate health programmes at the University of Auckland led to revision of the graduate learning outcomes for the Hauora Māori domain (Jones, 2011). Mapping curricula against this graduate profile identified that existing assessment methods failed to comprehensively assess all relevant learning outcomes. Important gaps were noted in the latter part of the programme, where much of students' learning occured in clinical settings. Assessment of Māori health in these settings was identified as being inconsistent, somewhat repetitive, and not well aligned with the newly developed learning outcomes.

In years 4–6 of the University of Auckland's medical programme, teaching and learning were concentrated in clinical attachments where medical students were assigned to clinical teams within hospitals, general practice and other community healthcare settings in the upper North Island. There were some dedicated Māori health assessment tasks, including a case report on a Māori patient in Year 4 General Medicine, a case report on a Māori child and family in Year 5 Paediatrics, and a longitudinal case study involving a Māori patient with a chronic illness for students in the Pūkawakawa Regional-Rural Programme (a Year 5 cohort based in Northland).

However, assessment of this domain in many clinical attachments was limited to a rating of students' performance on a supervisor report form. Workplace-based clinical supervisors (generally senior doctors) were asked to assess the extent to which a student had practised in accordance with the principles and responsibilities arising from the Treaty of Waitangi, practised in a culturally competent manner, and used strategies that would contribute to improvement in Māori health. A single rating was required, selected from the following options: Major deficiencies; Some reservations; Satisfactory; Excellent; Not observed.

Discussion with clinical coordinators and supervisors suggested that many clinicians did not feel well equipped to facilitate learning in this area, consistent with international evidence that many physicians report a lack of preparedness to provide cross-cultural care (Weissman *et al*., 2005). Consequently, there were concerns about the consistency, validity and reliability of Hauora Māori assessment in clinical settings (Jones *et al*., 2010). As noted earlier, many clinicians tend to avoid assessment in this area, struggling with the attitudinal assessment that it requires, the standard required, or their legitimacy to assess others' cultural competence with Māori if they do not feel well-prepared themselves.

In summary, existing assessment of Hauora Māori in clinical settings was limited, inconsistent and not well aligned with the graduate profile. It therefore failed to encourage students to achieve the desired learning outcomes and to provide adequate feedback to students about their progress in this educational domain. Clearly, more valid and reliable tools for assessing Hauora Māori (and related topics)

were needed. Improvements in the alignment and effectiveness of assessment in this area of the curriculum are expected to facilitate appropriate learning and also to give students high-quality, evidence-based feedback about their performance and ongoing professional development needs.

Aims and objectives of the project

The primary goal of this implementation project was to identify effective assessment methods, tools and staff development processes that can be used to assess Māori health competencies in clinical settings.

The specific objectives of this project were as follows:

1. Develop two new assessment tasks and associated marking schedules.
2. Pilot these assessment methods in a clinical learning environment, with associated development and support for clinicians in the pilot areas.
3. Modify the assessment methods and tools as appropriate.
4. Implement the assessment tasks and associated staff development at different clinical teaching sites.
5. Evaluate the new methods of assessment.
6. Refine the tools and develop recommendations for expansion into other clinical teaching settings.

Development of assessment tools

While developing two new tools for assessing Hauora Māori in clinical learning environments, key considerations were: theory and evidence about assessment of Hauora Māori and related competencies; acceptability to students and educators; and feasibility of implementation in the context of the medical curriculum. The utility of any assessment tool is a combination of its validity, reliability, acceptability, feasibility and impact (van der Vleuten & Schuwirth, 2005).

Three major sources of information informed tool development:

1. A literature review of methods and tools for assessing Hauora Māori and related competencies.
2. A workshop with clinical teachers.
3. Student feedback.

Review of available assessment methods and tools

A literature review was undertaken to inform the design and implementation of assessment tasks. Combining search terms relating to Māori health, indigenous health, cultural competence, cultural safety, health disparities and assessment, we searched PubMed, Medline and ERIC databases. The emphasis of the review was on assessment in clinical or workplace-based settings, focusing on health professional education but including relevant literature from other educational

contexts. The findings of this review are summarised in the Introduction section of this report.

Workshop with clinical teachers

A workshop was held in November 2009 and involved the general medicine Year 4 clinical coordinator from each of the participating hospital sites, as well as other general medical clinicians who were able to attend (n=6). The workshop was conducted as follows:

- Clinical teachers were asked to complete a pre-workshop questionnaire. (Data was collected and analysed descriptively, but the questionnaire was used primarily as a prompt for thinking about assessment of Hauora Māori in clinical settings.)
- Questions and discussion around issues with assessment of Hauora Māori.
- Participants were asked about their expectations of the workshop (and what needed to be addressed in future workshops).
- An overview of the Hauora Māori curriculum was presented, including an outline of learning outcomes for Year 4.
- An overview of current assessment of Hauora Māori in clinical attachments (supervisor report form, case studies) was presented.
- Options for new and/or revised forms of assessment were presented, based on the findings of our review of the literature.
- Feedback was sought from participants on the assessment options and on ways to improve existing methods of assessment.

There was a high level of enthusiasm for addressing Hauora Māori teaching, learning and assessment in clinical settings. Questionnaire findings indicated a lack of understanding by clinical supervisors of expectations in assessment of Hauora Māori. Existing assessment was noted to be highly unsatisfactory, with the supervisor report forms rating particularly poorly. For example, only one of the six participants agreed that they had a good understanding of what was required of them when assessing students using this form. None agreed that the assessment criteria for the Hauora Māori domain were well defined, and only one of the six agreed that this assessment gives an accurate indication of students' skills in working with Māori patients and whānau.

Their comments included:

> *The section in the supervisor's assessment is very generalised.*
>
> *Assessments seem detached from overall evaluations from both student and supervisors' perspectives.*
>
> *General lack of understanding [by supervisors] of expectations in assessment and variable supervisor experience/ knowledge.*

There was reported to be considerable variation in the knowledge and experience of clinical teachers (across all teaching sites) with respect to the Hauora Māori domain. All participants expressed that they would benefit from professional development in this area.

In relation to the assessment options, there was support for exploring more clinically situated assessment tasks such as observed clinical encounters. However, caution was expressed in light of the issues reported above, particularly the variability in clinical teachers' competence with respect to assessing Hauora Māori. It was agreed that considerable staff development would be required before such assessment could be introduced across the programme. Significant time pressure was also identified as an important barrier to greater involvement of clinical teachers in assessment of Hauora Māori.

Given the strong emphasis on reflective practice in the Hauora Māori curriculum, a major consideration was assessment of reflection. Different forms of reflective activity were considered, including the use of individual or small group discussions. Consideration was given to a pilot approach at one clinical teaching site, but there was also some reluctance to increase students' assessment load. Taking these logistical issues into consideration, the consensus from this workshop favoured retaining some form of written assessment, which could be assessed by specialist Māori health academics.

Student feedback

A senior student involved in the project sought input from students who had recently completed Year 4. The purpose was to seek their views on existing assessment processes as well as any suggestions for improvement. Two written responses were received, together with some informal verbal feedback.

Student responses reflected problems with existing assessment by clinical supervisors, which was seen as being of very limited value in its current form. It was reported that many supervisors either refused to assess the Hauora Māori domain or simply gave an arbitrary satisfactory grade. One possible reason for this was that clinical supervisors did not have sufficient opportunity to observe students in order to assess their performance in the Hauora Māori domain. There was also criticism of Hauora Māori assessment in written examinations, stressing the need for more clinically relevant methods of assessment. Other comments suggested that case report and reflective commentary formats were likely to be acceptable to students.

Design of assessment tasks

It was first necessary to determine at what point in the curriculum these assessment tasks would be administered, in order to ensure alignment with learning outcomes. After weighing up different options, it was decided that the assessment tasks would be administered in the Year 4 General Medicine clinical attachment. A major factor in this decision was that this attachment already included a dedicated Hauora Māori

assessment, in the form of a Māori case study (in addition to the standard supervisor report form). This approach allowed us to introduce and evaluate new assessment tasks without increasing the overall assessment load on students.

In Year 4 of the medical programme, the following learning outcomes were specified for Hauora Māori[1]:

1. Demonstrate an awareness of current evidence relating to inequalities and Māori health.
2. Identify racist ideas in common discourse and provide appropriate responses.
3. Describe approaches to working with Māori patients and whānau.
4. Demonstrate a working knowledge of support services (e.g. Kaiatawhai, Māori providers).
5. Explain how the culture of health professionals and health systems can influence healthcare outcomes.
6. Observe, describe and analyse clinical interactions (involving others) in terms of cultural competence.
7. Describe differences in quality of care for Māori and non-Māori in the New Zealand health system.
8. Describe the basic process of clinical audit and explain why it is an important part of clinical practice.
9. Recognise the need for ongoing learning and professional development in Māori health.

By mapping available assessment options against these learning outcomes, and considering the options in light of acceptability and feasibility considerations, it was decided that the two assessment tools piloted and evaluated in this project would be a reflective commentary and a modified case report. The modified case report differed from the existing case report in that it asked students to focus on *one* issue of particular relevance to the case, rather than potentially addressing a range of issues. The intention was to have students examine an issue related to Hauora Māori learning in significant detail, supported by relevant evidence and literature, in an attempt to encourage deep learning. The existing case report allowed students to discuss a number of issues somewhat superficially, which tended to diminish the depth of reflection and engagement with learning materials.

Accordingly, the two new assessment tools were developed by a member of the project team, and then were reviewed and refined by the project team before piloting. An important principle was that workload for students undertaking the new assessments should not differ substantially from the workload required by the existing assessment. The assessment tools and marking criteria were also designed with the intention that students who completed one of the new assessments would

[1] The curriculum for this phase of the programme includes a mix of campus-based, self-directed and clinical teaching. Therefore, not all of the above learning outcomes would be expected to be achieved or assessed in the context of a clinical attachment.

not be advantaged or disadvantaged, in terms of grades, relative to students who completed the pre-existing assessment.

The new assessment tasks were designed to motivate the students to consider their own practices and beliefs. There was an expectation that this would contribute to their development as professionals in ways that might be expected to lead to improved practice and improved patient outcomes (particularly for Māori patients) (Kanes, 2011).

Piloting the assessment tools

The new assessment tools were piloted in the first two rotations of Year 4 General Medicine in 2010. The reflective commentary and the modified case history were piloted at separate clinical teaching sites. The pre-existing assessment tool, a case history, was used at a third clinical teaching site in order to provide a control group.

Evaluation questionnaires were distributed to students at the beginning and end of their attachment. (Development of the questionnaire is described in the next section.) Questionnaire results, which included both qualitative and quantitative components, were reviewed by the research team. Students' responses indicated that the new assessments were feasible and acceptable, and no significant concerns were raised.

The questionnaire results from the pilot rotations did not suggest any potential improvements to either the reflective commentary or the modified case history. In addition, those marking the assessments did not identify any necessary improvements. Given this, both assessments were used unchanged for the remainder of the implementation period following the pilot phase. As the assessments were unchanged, the pilot results were included in the full evaluation.

Details of the new assessment tools and existing case report are provided in Appendix 1.

Developing the evaluation tool

One of the key questions for this research and implementation project was how to evaluate the new assessment tasks. As reflected in the literature summarised in the previous section, reliability and validity are important characteristics of assessment tools. However, it is also important to consider the extent to which assessment tools facilitate positive learning outcomes, sometimes referred to as consequential validity. Consequential validity can be considered an aspect of construct validity, and includes evidence of positive consequences arising from assessments (Messick, 1995).

This project was based on the premise that assessment drives learning, and that assessments should form an integral part of course design. Thus, new assessment methods may be evaluated as an 'intervention', with repeated measures pre- and post-intervention to assess intervention effects. Impacts on student learning may be

measured directly, that is by measuring performance in the educational domain, or indirectly, for example by measuring proxy indicators such as student engagement, which can be shown to correlate with achievement of learning outcomes.

The following section summarises the findings of a literature review that examined evaluation of educational interventions in indigenous health and related domains.

Evaluating indigenous health and cultural competence interventions

At the University of Western Australia, an evaluation of the indigenous health curriculum was undertaken using an anonymous 24-item questionnaire (the "Impact of Aboriginal Health Undergraduate Curriculum [IAHUC]" Questionnaire) (Paul *et al*., 2006). The questionnaire covered three main areas of Aboriginal health: Aboriginal health as a social priority, Aboriginal health issues, and future commitment towards Aboriginal health. Students were asked to rate their level of agreement using a Likert scale. Using two cohorts of students, they were able to demonstrate an improvement in perceived preparedness and ability to work with Aboriginal patients, and an increase in perceived preparedness to advocate for improved Aboriginal health. However, the instrument itself was not evaluated in terms of its validity or reliability, and the authors acknowledge the limitations of using students' self-rating of preparedness.

Crandall and colleagues (2003) used questionnaires at the beginning and end of a year-long cultural competence course. These questionnaires had the students self-evaluate their skill, knowledge, and attitude towards cultural competence. Paired t-tests found that the students rated themselves much higher in all areas in the second questionnaire, suggesting that the intervention had been effective, at least in terms of improving self-perceived cultural competence. However, these findings need to be interpreted in the context of evidence that self-assessment may lack reliability, as described above (Hodges *et al*., 2001; Kruger & Dunning, 1999; Violato & Lockyer, 2006).

Another slightly different approach has been to assess learners' *intention to change* (Ferguson *et al*., 2003). The authors measured participant satisfaction at the end of each workshop in a series that involved self-reflective components. In addition, using a set of questions the participants were asked to assess their intention to change (*i.e.* to engage in behaviour change to improve their cultural competence).

Different models of cultural competence development underpin the evaluation of student learning in this area. In the design and evaluation of their one-year cultural competence programme, Crandall and colleagues (2003) used two different conceptual frameworks, the first of which was Howell's levels of communication competence (Howell, 1982). According to Howell's theory, a learner may transition from level one (unconscious incompetence) to level two (conscious incompetence), to level three (conscious competence) to level four (unconscious competence), and finally to the fifth level (unconscious super-competence) where experts' function and

skilful interaction appears effortless. The second framework used was Bennett's (Bennett, 1993) model that describes stages of movement between "ethnocentrism (denial, defense, and minimization) to ethno-relativism (acceptance, adaptation, integration)". An adapted form of this model identifies five levels ranging from Level 1, "in which physicians have no insight about the influence of culture on medical care", to level 5, in which "they integrate attention to culture into all areas of their professional lives" (Culhane-Pera *et al*., 1997). Other frameworks have been used, such as a modified 'ethno-sensitivity' scale, which describes cultural competence in seven different stages (Ferguson *et al*., 2003). The adaption of the existing scale was to increase its compatibility with a clinical setting.

Tools for assessing cultural competence have also been developed in non-health fields, although often these tools are specific to the field in question. In the field of counselling education, for example, a review identified five commonly used tools for assessing cultural competence, all of them specific to counselling. Four of these were self-assessment tools, and one was designed for students to be assessed by instructors (Hays, 2008). The Cross-Cultural Adaptability Inventory (CCAI) is a generic tool that can help learners identify strengths and weaknesses within four critical competency areas important for effective cross-cultural interaction (Kelley & Meyers, 2007).

Student engagement

Measuring student engagement with learning provides useful information about behaviours that are thought to be associated with desirable educational outcomes. There are many definitions of student engagement, ranging from a more literal participatory notion like completing routine school activities (Natriello, 1984) to more cognitive-focused definitions. The latter consider how a student uses "cognitive, meta-cognitive and self-regulatory strategies to monitor and guide their learning processes" (Chapman, 2003). In this definition the engagement level is viewed as "motivated behavior apparent from the kinds of cognitive strategies students choose to use…and by their willingness to persist with difficult tasks by regulating their own learning behavior" (Chapman, 2003). The most common way to assess student engagement is by self-assessment, which is usually done using a questionnaire. Types of questions include how well the student engaged intellectually with a given topic (for example, attention versus distraction, the time and effort they spend outside of class on additional learning) and their general responsiveness to the topic (for example, do they ask questions or interact within small group settings). They may also be asked to rate their desire to know more about a subject or rate their feeling of stimulation or excitement in learning within this topic.

This kind of assessment is usually done in conjunction with teacher report scales, where the teacher is asked to assess students' willingness to participate in tasks, and direct observations, where a teacher may be asked to (among other things) record whether or not a specific behaviour was evident at a given time. Focused case studies are also used to confirm a student's self-assessment outcomes and to

assess student engagement levels. They are often used to collect more descriptive accounts of engagement patterns. They are equally concerned with assessing a student's overall abilities and the steps within engagement as they are in revealing actual levels of engagement. Using a range of methods to assess student engagement is often found in student-engagement assessment as it strengthens results. An example of this type of instrument is the Australasian Survey of Student Engagement (AUSSE) (Australian Council for Educational Research, 2009).

Questionnaire development

It was established that a student questionnaire would be employed as the primary means of evaluating the new assessment tools, to be administered before and after the assessment was undertaken.

The questionnaire was designed and developed by incorporating three phases of analysis:

1. a review of the relevant literature to establish a theoretical foundation (described above)
2. consideration of the items of interest through an expert panel review
3. a statistical analysis of the questionnaire.

Phases 1 and 2 were used to establish face and content validity. The statistical analyses were incorporated to establish reliability and construct validity.

Development of the questionnaire domains and items

The research team considered the findings of the literature review in order to identify domains of interest that would address the research question. In addition to acceptability and perceived utility of the assessments, change in student knowledge and attitudes was identified as a key domain of interest. However, given that changes in knowledge and attitudes may not be detectable over the course of a six-week clinical attachment, other measures were considered for inclusion. In particular, the team felt it was important to determine whether or not the new assessments encouraged students to engage with learning in this domain.

The research team settled on three key domains of investigation for the questionnaire: attitudes/beliefs, engagement and satisfaction. The items were then devised, developed and considered within the group, with some items adapted from instruments used in other settings. Through this process we sought to establish 'face' and, to some extent, 'content' validity. Some attitudinal questionnaire items were negatively phrased (so that a higher score was associated with 'less favourable' attitudes). Scores for these items were inverted prior to analysis.

The pre-attachment questionnaire included questions about: (i) prior engagement in Hauora Māori learning activities, and (ii) attitudes and beliefs towards Hauora Māori. The post-attachment questionnaire included the same bank of questions about attitudes and beliefs, as well as two additional components: (i) engagement in

Hauora Māori learning activities during the attachment, and (ii) satisfaction with, and acceptability of, the assessment process.

The questionnaires are presented in Appendix 2.

Piloting the evaluation tool

The evaluation tool was piloted in the first two rotations of Year 4 General Medicine included in the study. For the items measuring student attitudes and beliefs, a series of statistical analyses were conducted, including reliability coefficients and a factor analysis.

Student attitudes/beliefs

The pre- and post-attachment student questionnaires included 18 questions relating to student attitudes/beliefs about culture, Māori people and Māori health.

Cronbach's alpha coefficients were computed to establish internal consistency reliability (or inter-item consistency). In terms of interpreting the reliability coefficients, the method most often used involves one of comparison, as a guide reliability coefficients of greater than 0.7 are desirable (Streiner, 2003).

Factor analysis was used to establish construct validity. Exploratory factor analysis was used to check whether or not the expected domains of interest considered in the questionnaire actually emerged through statistical analysis (Field, 2005) and was instrumental in this case, given that this questionnaire contained untested factor structures. Three steps were implemented to investigate the factor structures (domains) of the questionnaire (Hair, Anderson, Tatham, & Black, 1998), specifically a preliminary analysis of the data set, factor extraction, and review of factor-rotation details:

1. *Preliminary analysis.* In this step, data was screened in terms of appropriateness for factor analyses. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) and Bartlett's Test of Sphericity are tests that examine the entire matrix. If the MSA > 0.7 and the Bartlett's test yields a result of $p < 0.05$, then the matrix was deemed appropriate for Factor Analysis (Field, 2005; Hair *et al*., 1998).
2. *Factor extraction.* A scree plot was used to discern any trends by considering points of inflexion. Second, the percentage of variance was considered to establish how well the derived factors explained the variance in the data. Then eigenvalues were generated to provide useful information regarding the importance of a factor in describing the data set and thus determining whether or not it should be retained. Factors with eigenvalues of greater than one were considered significant.
3. *Factor rotation.* The factor-rotation system incorporated Oblimin with Kaiser Normalization with the Maximum Likelihood extraction method. This system was chosen as it permits the expected inter-correlations of the underlying

factors to be observed and allowed to shape the analysis. Interpretation of the factor-rotation matrix was based on two broad criteria (Hair *et al*., 1998), namely setting a minimum acceptable magnitude of the loading (> 0.4) and considering the theoretical sense of the factor items in terms of inclusion or deletion.

Reliability and validity: The aforementioned statistical analyses were implemented.

Preliminary analyses. The Kaiser-Meyer-Olkin Measure of Sampling Adequacy (MSA) for this data set is 0.94, and the Bartlett's Test of Sphericity is significant ($p < 0.001$). Therefore, the combined item dataset was suitable for factor analyses (Field, 2005; Hair *et al*., 1998).

Factor extraction. The scree plot (Figure 2 below) shows the point of inflection at three factors. The subsequent pattern matrix determined that 50 *per cent* of the variance could be accounted for by three factors and with eigenvalues greater than one (Table 1). In all cases Cronbach alpha scores were above 0.7. Based on a conceptual synthesis of the underlying component questions, the three factors were named: (1) 'cultural competence is important'; (2) 'ethnic inequalities exist'; and (3) 'non-deficit analysis'.

Table 1: Factors identified from questionnaire data

Factor number and name		Number of component items	Percentage of variance accounted for by factor	Factor reliability (Cronbach's alpha)	Eigenvalues
1.	Cultural competence is important	10	41.7%	0.910	7.988
2.	Ethnic inequalities exist	4	5.1%	0.729	1.434
3.	Non-deficit analysis	2	2.9%	0.693	1.009

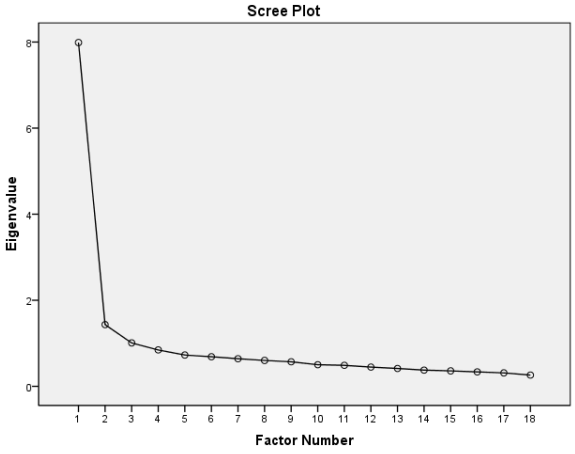

Figure 2: A scree plot of the items in the evaluation questionnaire

Factor rotation. The factor-rotation system, incorporating the Oblimin with Kaiser Normalization with the Maximum Likelihood extraction method, generated the final solution (see Table 2) in accordance with the guidelines mentioned in the Method section. Factor loadings greater than 0.4 were highlighted in grey and the items were considered in terms of their theoretical unity.

Table 2: The set of 18 items and factors loadings

Item	Factor		
	1	2	3
Self-reflection is an important element of professional medical practice	0.871	0.007	-0.138
It is important to pronounce Māori names correctly	0.771	0.031	0.018
Māori cultural support workers in hospital are an important part of the health care team	0.714	0.140	-0.156
Health practitioners should be subject to formal objective assessments of their practice	0.698	-0.038	-0.009
My culture has an influence on the way I interact with patients	0.683	0.029	0.054
Achieving good health is as important to Māori people as it is to people from other ethnic groups	0.614	-0.097	0.172
Māori patients' use of traditional medicines is dangerous and medical practitioners have an ethical responsibility to discourage their use*	0.598	0.066	0.125
Involvement of whānau in healthcare decision making should be minimised due to privacy concerns*	0.586	0.148	0.029
Improving Māori health should be a social priority	0.492	0.159	0.197
As a doctor, my future role in improving Māori health will be limited to treating sick patients in a hospital or clinic*	0.400	0.360	0.114
Māori people enjoy the same level of access to health care as all other New Zealanders	0.063	0.823	-0.126
Health care in New Zealand is delivered fairly to all ethnic groups*	0.041	0.753	-0.012
In my future practice I will ensure all patients receive equitable care by treating everyone the same*	-0.143	0.436	0.317
When I first meet a Māori patient, I have no preconceived ideas or stereotypes about him/her*	0.117	0.429	-0.011
Special provisions made for Māori in mainstream health services privilege one ethnic group over all others*	0.202	0.367	0.237
The best way to identify Māori patients in hospital is to ask the ethnicity of those with Māori names or who look like Māori*	0.207	0.297	0.142
Most Māori patients in hospital are there because of poor lifestyle choices*	0.260	0.083	0.580
Māori patients are often unwilling to adhere to medical treatment or advice	0.339	0.043	0.444

Notes:

1. Extraction Method: Maximum Likelihood.
2. Rotation Method: Oblimin with Kaiser Normalization.

3. Rotation converged in 10 iterations.
4. * indicates reversed items.

Implementation and evaluation of assessment tools

The aim of this evaluation was to assess the effect of different assessment tools on student engagement with the learning process, satisfaction with assessments, and attitudes and beliefs related to Hauora Māori.

Methods

Participants and sampling

The study population was Year 4 University of Auckland medical students. All students undertook a six-week attachment in General Medicine during the year, for which they were allocated randomly to one of four teaching hospitals. Three of the four teaching hospitals were involved in this study; students placed at any of these three participating sites were eligible to take part in the research. Within these groups, volunteers were sought from each hospital setting.

A total of 255 students were eligible for the study and were invited to participate. Demographic details for the eligible population at each of the three sites are presented in Table 3.

Table 3: Demographic characteristics of the eligible population

Gender	Site 1		Site 2		Site 3	
	n	%	n	%	n	%
Female	51	53.1%	53	59.6%	37	52.9%
Male	45	46.9%	36	40.4%	33	47.1%
Total	96	100%	89	100%	70	100%
Ethnicity (prioritised)						
Māori	10	11%	17	20%	5	7%
Pacific	7	8%	8	9%	4	6%
Asian	33	37%	33	38%	27	40%
Other	9	10%	4	5%	11	16%
NZ European	30	34%	24	28%	21	31%
Total ethnicity provided	89	100%	86	100%	68	100%
Ethnicity not provided	7		3		2	

Study design

The new assessment tools were implemented in Year 4 General Medicine rotations in the three clinical sites for eight rotations. There was one control site, at which the pre-existing assessment tool was used, and two intervention sites, at which the new assessment tools were introduced. Details for each site are as follows:

1. Intervention site: The reflective commentary was introduced in place of the existing assessment.

2. Intervention site: The modified case report was introduced in place of the existing assessment.
3. Control site: Students were assessed using the existing Hauora Māori case study.

Students undertaking their attachments at these three sites were invited to participate in the study. At the intervention sites (but not the control site) volunteer clinical supervisors were offered a briefing on the new tasks, including the rationale for the new tasks, how they related to Hauora Māori learning outcomes, and how they were to be assessed. The rationale for this staff development was to enable clinical teachers to contribute to Hauora Māori assessment. It had been envisaged that all student assignments would be marked by both a clinical supervisor and a Māori health academic, and that these marks would be assessed for reliability and consistency.

Owing to other demands on clinician time, however, we were unable to provide as extensive a briefing as we originally planned; the briefing consisted of a short (approximately 15 minutes) session at the end of a routine clinical department meeting. However, this did not have a material impact on the study outcomes as clinical teachers did not participate in the assessment. It became apparent that it was not feasible to double-mark the assignments as planned; all assessments were marked by a Māori health academic staff member.

The design of the project is represented diagrammatically in Figure 1.

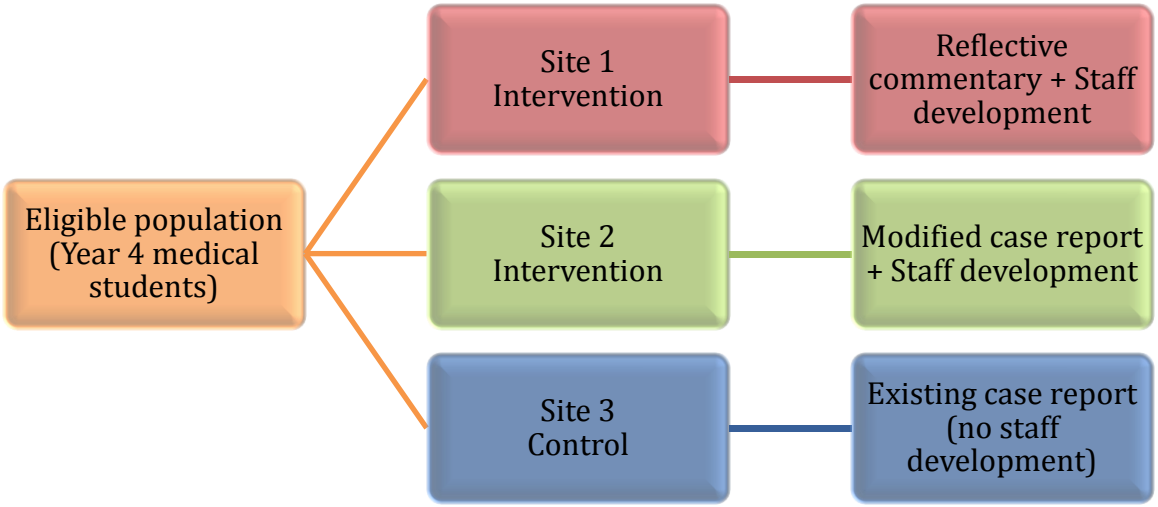

Figure 1: Overview of study design

Data collection

Pre- and post-attachment questionnaires (see Appendix 2) were employed to evaluate the effect of the different assessment tools. At the beginning and end of each clinical rotation/attachment, students were asked to complete an evaluation questionnaire. The questionnaires were distributed by hospital administrators. The students then handed their completed questionnaires back to these administrators who then passed them on to the research group. The pre-measures were distributed during an orientation session and the post-measures were collected in the final week of the rotation.

The study team considered that in order to avoid any potential concern that the students' evaluation questionnaire responses might affect their assessment marks, and in order to elicit frank responses from students, questionnaires needed to be anonymous. We obtained routinely collected demographic data from course administration for each rotation by site; these demographic data were used at aggregate level to check comparability of sample groups, not as variables for analysis.

Data analysis

Attitudes/beliefs

1. The initial attitudinal measures taken at the beginning of the rotations were compared with the post-scores taken in the final week. This required comparative statistical measures at the two stages.
2. The post-measures were evaluated in terms of the three assessment processes and rotation sites, namely reflective commentary, modified case report and control assessments across the three hospital sites. This required comparative statistical measures across the three sites. Independent t-tests and 95% confidence interval calculations (presented in charts) were used to measure the differences between mean scores of the factors across sites and times (pre–post).

Student engagement

The pre-attachment questionnaire contained seven items that examined student engagement in activities relating to Hauora Māori in their prior experience as a medical student. The post-attachment questionnaire asked about engagement in these seven activities during their Year 4 General Medicine attachment. Ten further questions about engagement in other activities were also included in the post-attachment questionnaire. For the seven student-engagement items that were common to pre- and post-attachment questionnaires, we compared the means of these items between sites. The remaining ten post-attachment questions were analysed individually.

Satisfaction with assessment

Student satisfaction with the assessment was assessed with respect to several different criteria: satisfaction with learning outcomes, with clinical supervisor assessment, with the written assessment task (case study, modified case study or reflective commentary), and a general assessment domain.

A series of comparison measures were instigated, employing the assumption of unequal variances, to consider differences across study groups.

Qualitative analysis

Following the first two pilot rotations, focus groups were conducted with a small group of students from each teaching site to explore their experiences in engaging with the new assessments. Feedback from students was used to determine the acceptability, appropriateness and utility of the new forms of assessment.

In addition, we analysed answers from three 'free-text' questions on the questionnaire forms:

- What did you find useful about the Hauora Māori assessments in this attachment?
- How could this assessment process be improved?
- Any other comments?

Ethics approval for this project was obtained through the University of Auckland Human Participants Ethics Committee.

Results

Quantitative analysis

Response rates for the sample are presented below in Table 4.

Table 4: Response rates compared by hospital site

		Pre-attachment questionnaires returned		Post-attachment questionnaires returned	
Site	Total students	n	%	n	%
Reflective commentary	96	73	76.0%	52	54.2%
Modified case report	89	77	86.5%	75	84.3%
Control site	70	49	70.0%	32	45.7%
Total	**255**	**199**	**78.0%**	**159**	**62.4%**

Attitudes/beliefs

Mean scores for Factor 1 ('cultural competence is important') across the three sites ranged between 4.04 and 4.20 pre-attachment and between 3.44 and 4.20 post-attachment. Corresponding scores for Factor 2 ('ethnic inequalities exist') ranged between 2.67 and 3.10 pre-attachment and between 2.43 and 3.10 post-attachment. Factor 3 ('non-deficit analysis') scores ranged between 3.27 and 3.47 pre-attachment and between 2.84 and 3.67 post-attachment. Details are presented in Table 5.

Comparisons, using the more conservative comparison measure of assuming unequal variances, were made within each site in terms of the pre- and post-measures for each of the three factors. Successive comparisons showed no significant differences between pre- and post-attachment scores for the reflective commentary or modified case report. However, for the control group there was one significant difference. For Factor 1 ('cultural competence is important'), the pre-measures (M = 4.04, SD = 0.44) were significantly higher [$t(41) = 2.15$, $p < 0.05$] than the post measures (M = 3.44, SD = 1.70). No significant differences were noted for any other comparisons. Details of these comparisons are presented in Table 5.

Table 5: Comparison of pre- and post-attachment factor values for the three assessment tasks

		Reflective Commentary		Modified Case Report		Control	
		Mean	p value	Mean	p value	Mean	p value
Factor 1: 'Cultural competence is important'	Pre	4.1975	0.969	4.0880	0.168	4.0431	**0.038**
	Post	4.2004		3.9645		3.4357	
Factor 2: 'Ethnic inequalities exist'	Pre	2.9097	0.182	3.0974	0.303	2.6684	0.343
	Post	3.1005		2.9613		2.4342	
Factor 3: 'Non-deficit analysis'	Pre	3.4653	0.217	3.2662	0.530	3.3367	0.073
	Post	3.6667		3.3521		2.8421	

Bolded values represent p<0.05. P values are for pre–post differences within each site

Comparison of factor values across the three study groups showed that pre-attachment values were similar at baseline, except in the case of Factor 2 ('Ethnic inequalities exist'), which was significantly lower for the control group than for the modified case report. However, post-attachment values for all three factors were significantly higher for the reflective commentary than for the control group.

Student engagement

For the seven student-engagement items that were common to pre- and post-attachment questionnaires, mean values did not differ significantly between different sites for engagement before or during the attachment. The remaining ten post-attachment questions were analysed individually. Students at the control site were more likely to report engaging with Māori health services than students who did the reflective commentary. Students who did the modified case report were significantly

more likely than students who did the control assessment to report drawing on health inequalities literature and engaging with Māori patients and whānau. Students who did the modified case report were also more likely to report engaging with Māori patients and whānau than students doing the reflective commentary. In order to assist with interpretation of these findings, we asked participants to report the number of Māori patients they had seen during the attachment. Students doing the modified case report reported seeing a median of five Māori patients during the attachment (range: 0-30), more than those doing the reflective commentary (median=3, range: 1-10) and control assessment (median=3, range: 1-5).

Satisfaction with assessment

The findings, also represented in Table 6, were as follows:

1. No significant differences were noted between the two groups who did the new assessment tasks in terms of the four assessment domains: learning outcomes, clinical supervisor assessment, written assessment task and a general assessment domain.
2. Two differences were noted when the reflective commentary was compared to the control assessment. More specifically, clinical supervisor assessment items were rated significantly higher [$t(66) = 2.44$, $p < 0.05$] for those who did the reflective commentary ($M = 2.65$, $SD = 1.16$) when compared to the control group ($M = 1.91$, $SD = 1.57$). Furthermore, written assessment task items were significantly higher [$t(51) = 3.17$, $p < 0.05$] for the reflective commentary ($M = 3.38$, $SD = 0.80$) when compared to the control group ($M = 2.48$, $SD = 1.60$).
3. Two differences were noted when the modified case report was compared to the control assessment. More specifically, clinical supervisor assessment items were significantly higher [$t(64) = 2.80$, $p < 0.05$] for those who did the modified case report ($M = 2.74$, $SD = 1.29$) when compared to the control group ($M = 1.91$, $SD = 1.57$). Furthermore, written assessment task items were significantly higher [$t(50) = 2.99$, $p < 0.05$] for the modified case report ($M = 3.32$, $SD = 0.88$) when compared to the control group ($M = 2.48$, $SD = 1.60$).

Table 6: Comparison of student satisfaction between the three study groups

Group of items	RC vs MCR		RC vs CA		MCR vs CA	
	Difference	Significance (p value)	Difference	Significance (p value)	Difference	Significance (p value)
Learning outcomes	-0.03	0.871	0.32	0.258	0.34	0.2
Clinical supervisor assessment	-0.09	0.698	0.74	**0.018**	0.83	**0.007**
Written assessment task*	0.06	0.708	0.90	**0.003**	0.84	**0.004**
General	0.09	0.547	0.22	0.185	0.13	0.456

**RC=Reflective Commentary; MCR=Modified Case Report; CA=Control Assessment.*

Bolded values represent p<0.05

Qualitative analysis

Questionnaire comments

Students were asked to provide free-text comments describing what they found useful about the assessment process, how it could be improved, and any other general comments. Five emerging themes were identified from these comments; these are described in Table 77 and in the text below. Reported percentages use the total number of questionnaires returned as a denominator.

Table 7: Themes identified from free-text evaluation responses

Theme	**Sample quotes**
Appreciated learning about Māori health	'A chance to research and find evidence for Māori health inequality and initiatives to address them'
	'It made me look up information about Hauora Māori and apply this to my patient'
Reflective approach good	'I think it would be more useful to let us reflect on our interactions with Māori patients'
	'I really liked the reflective nature and the fact that you could talk about anything that concerned/interested you'
More structured teaching	'Some clinical teaching on Māori patients may be helpful'

and assessment needed	'Better guidelines as to what is expected in the discussion of the case history – felt it was unclear what the assessors were looking for'
Lack of contact with Māori patients	'Would be great to see more Māori patients as that is the time when we learn the best'
Address other cultures	'Culture is extremely important when dealing with all patients...therefore you cannot tailor practice to "Māori" and "non-Māori"' 'A family meeting should be organised for any patient who prefers and should not only be thought of if dealing with Māori patients' 'What about other ethnicities? The whole thing is just ridiculous and racist'

Overall, many students expressed appreciation for the opportunity to learn more about Hauora Māori. Thirty-eight *per cent* of students who did the control assessment wrote positive comments in this area, compared to 21 *per cent* doing the modified case report and 14 *per cent* doing the reflective commentary. Twelve *per cent* of students who did the reflective commentary reported enjoying the reflective approach, though four *per cent* said they would prefer a case study. Four *per cent* of students who did the modified case report said they would prefer a reflective commentary, while none explicitly supported the case-study approach. At the control site, five *per cent* of students reported enjoying the case study, while none expressed a preference for a reflective commentary. A few students in both the modified case report and control groups felt that the case-study approach gave them an opportunity to reflect.

Many students (10–15% across the sites) requested additional formal teaching, rather than only self-directed learning on Hauora Māori. Others felt that the assessment requirements needed to be clearer, especially for those in the control group (19% of students), compared with eight *per cent* for the modified case report and six *per cent* for the reflective commentary.

At two of the hospitals, students commonly reported that they lacked contact with Māori patients during their attachment, and that this made it difficult to get practical experience relating to Hauora Māori. This was common at the reflective commentary site (20%) and at the control site (14%), whereas there was a low percentage reporting this problem at the modified case report site (3%). This is likely to be due to variation in the proportions of Māori in the catchment populations at the different teaching sites.

A substantial number of students were critical of the concept of Hauora Māori teaching. Some considered that the teaching should be about other cultures as well, or about more universal cultural competencies (14% at the control site and 7% of students doing the modified case report, but none of those doing the reflective commentary). Others simply stated that they felt the Hauora Māori assessment was

not useful or important (control assessment 11%, modified case report 4%, reflective commentary 4%).

Focus groups

The focus group discussions revealed many of the same themes identified from questionnaire comments. These included difficulties finding appropriate patients for the assessments, requests for more structured teaching relating to the assessment, and concerns that too much emphasis was being put on Māori health and not enough on other cultures. However, there was some acknowledgment that Māori health learning and assessment could help to develop knowledge and skills that were transferable to other areas.

> *And I think it's not just specific to, say, working here, because wherever you are you're going to come across different cultures. So in one way it's generic; in teaching you to think more broadly about how you relate different things. And that not everyone sees things the same way or does things the same way.*

As in the questionnaires, several students praised the value of reflective approaches, although some students felt that personal reflection lacked objectivity, or was something that constantly occurred when seeing patients even in the absence of the assessment. Having opportunities to discuss and debate issues in a group was identified by one participant as a more effective method of learning than self-reflection.

> *The best session we had regarding… Māori health was an informal tutorial where we were able to discuss the issues we had encountered collectively. This produced… more thought around the issues. Learning outside of this tutorial was not in-depth and it was more about finishing the assessment, not what we learnt from it.*

A tension between eliciting honest reflection from students and summative assessment of their work was also identified.

> *We've heard about how harsh they mark these cases. So that, from the sounds of it, becomes less of a reflection – it's more like an assessment… do people have to start worrying about, like, ticking all the boxes?*

One theme that came through strongly from student discussions that was not identified in questionnaire comments was difficulty finding literature relating to the assessment. Many students said that it was difficult to provide references for an assessment that was based on personal reflection. Some had searched for, but struggled to find, data or evidence that was analysed by ethnicity. Others reported lacking literature-searching skills, and requested teaching in this area. Overall, these students seemed unsure what literature would be relevant to patients' specific situations and their own reflections on their patient interactions.

Several students reported putting little effort into their assessment either because they were rushed and had other assessments (such as an objective structured clinical examination) that placed greater demands on their attention or because they did not consider the assessment to be very important.

Discussion

Key findings

Educational outcomes (attitudes/beliefs)

In general, there was little apparent change in students' attitudes and beliefs over the course of the clinical attachment. There was no pre–post improvement in factor values at any site; the only significant change in these scores occurred at the control site, where Factor 1 (Cultural competence is important) moved in a negative direction.

> ***The importance of explicitly assessing competency areas such as Hauora Māori, despite the difficulty involved in doing so, cannot be overstated. Our qualitative feedback implied that students would not have undertaken the learning without the assessment requirements. This is consistent with the principle that assessment drives learning (Barrow, 2006; Biggs & Tang, 2007; Brown & Knight, 1994), and is supported by other research findings that if areas like cultural competence are not formally assessed, they can be seen by students as less important and therefore not emphasised in their learning (see, for example, Lypson et al., 2008).***

Given that this change was somewhat unexpected, it is helpful to consider possible explanations. One possibility is that it may be related to students being exposed to 'informal' and 'hidden' curricula during the clinical attachment. These terms refer to learning outside the formal curriculum that may be at odds with the principles underpinning formal teaching and learning. This hidden curriculum can have a powerful influence on students' learning and ultimately on their practice (Hafferty, 1998). For example, a perceived lack of attention paid to Māori health by these services could instil in students an attitude that Māori health is less important. Common discourse by medical practitioners has been shown to represent some 'unhelpful' attitudes towards Māori health (McCreanor & Nairn, 2002), and it may be that students were influenced by this.

It is important to note that this difference may simply be due to the pre- and post-attachment results reflecting slightly different populations. Because the data was not matched, and because response rates for the post-attachment questionnaire were often lower than for the pre-attachment questionnaire, it is possible that the students completing the post-attachment questionnaire were more likely to have reported more negative attitudes on the initial questionnaire.

Post-attachment values for all three 'attitudes/beliefs' factors were more favourable for those completing the reflective commentary than for the other groups, particularly the control group. This may be a sign that the attachment at Site 1 was more effective in preventing a negative shift in attitudes about Hauora Māori than the (control) attachment at Site 3. While this may represent the influence of the assessment (reflective commentary versus existing case report), the effect of contextual differences in the learning environment between teaching sites cannot be excluded.

The lack of change achieved through the assessment tasks may also be due to students being dismissive of the Hauora Māori domain in general, as evidenced by some of the qualitative findings. Thus, the educational effect of the assessment, and of feedback on assessment, may be diminished. While students might recognise Māori health academics as experts in the area (and, therefore, would be expected to value their judgements), they might not be seen as being associated closely enough with 'real' practice for their judgement to be sufficiently valued to prompt genuine behavioural or attitudinal change in their students. Including hospital-based clinicians in the assessment process could help to remedy this problem.

Engagement

We were interested in whether different assessment tasks would prompt students to engage to a greater or lesser extent in various Hauora Māori learning activities. Although there were statistically significant differences in a small number of items, this could have been due to multiple comparisons, and the meaning of the differences in individual items is not clear. One explanation for students at Site 2 (modified case report) engaging more with Māori patients and whānau could be that there were more Māori patients at that site and thus more opportunities to engage.

Acceptability

Student satisfaction with the assessment task was significantly higher for both the reflective commentary and the modified case report than for the control assessment. This indicates that both the new assessment tasks were an improvement over the existing one in terms of their acceptability. This finding is not affected by having different pre- and post- samples, as it relates to the post-attachment questionnaires only. However, it is worth noting that even the new assessment tasks only scored between 3.0 and 3.5, which in absolute terms is not strikingly positive.

Qualitative data (free-text comments and focus-group findings)

Comments by students in the free-text sections of the questionnaires were generally consistent with the main themes emerging from the focus groups. Many students commented positively about wanting to learn more about Hauora Māori. There were requests for more teaching during the clinical attachment, and suggestions that supervisors needed to be more aware and engaged in term of Hauora Māori. This supports interventions to provide training and professional development to clinical teachers and supervisors.

A number of students commented that either they enjoyed the reflective commentary or (if they completed a case study) they would have preferred a reflective commentary. There was an impression that more students at the control site felt that assessment requirements were unclear (19%) than at the intervention sites (8% for the modified case report and 6% for the reflective commentary). This suggests a need to modify the assessment or provide more explicit instructions and/or assessment criteria.

One of the interesting themes arising from students' comments was the notion that some of the cultural factors considered (*e.g.* importance of family meetings) were relevant to cultural groups other than Māori. This emphasises the need to frame the Hauora Māori domain to students as encompassing broad cultural competencies that have relevance for other cultural groups, but with a primary focus on Māori health. This endorses a more reflective/critical consciousness approach where the focus is on the person developing competence rather than learning about the cultural 'other' (Kumagai & Lypson, 2009; Taylor, 2003).

Findings from the student focus groups and free-text comments can assist in interpreting some of the quantitative results. For example, the movement of attitudes and beliefs in a negative direction for some groups (particularly those students at the control site) could be explained by student resistance. As noted above, there was a substantial number of students who expressed a level of antipathy towards Hauora Māori teaching or felt that the Hauora Māori assessment was not useful or important. There was a suggestion from some of these comments that having to complete this assessment may have prompted deliberately negative responses to some items in the post-attachment questionnaires.

Another manifestation of student resistance could be seen in the lack of effort that some students reported putting into the assessment. It is concerning that some students did not consider the assessment to be very important. This attitude may be encouraged by the fact that the assessment in question did not count for much in summative terms: it was one of a number of assessments contributing to an overall grade for the clinical attachment. Satisfactory performance in other areas could, therefore, overcome poor performance in the Māori health assessment. An important implication of this finding is that Hauora Māori needs to be more overtly positioned as an educational domain in its own right. It follows that assessment of Hauora Māori should be able to stand alone rather than being conflated with assessment of other areas, and that this assessment needs to matter (*i.e.* performance in this domain should be associated with appropriate consequences).

Strengths and limitations

A key strength of this project was its ability to formally evaluate different tools for assessing Hauora Māori in the context of clinically based learning. Competency areas like this have been identified as being difficult to assess, and there is limited evidence to guide decisions about assessment in these domains (Epstein & Hundert,

2002). We were able to examine the effects of three different assessment tasks on student engagement in learning and educational outcomes (attitudes and beliefs). These are important qualities to assess, as simply assessing knowledge and behaviour provides an incomplete picture of achievement in this area (Hafferty, 2006). A mix of quantitative and qualitative data also provided evidence relating to the acceptability and feasibility of the three assessments.

A number of limitations mean that the results of the study need to be interpreted carefully. We experienced challenges in separating out the environmental effects across the three sites. There were indeed contextual differences between the clinical teaching hospitals; this means that the student experience of their medical attachment may have differed.

As noted previously, the staff-development component of the project was very limited due to logistical issues. As a result, we were not able to evaluate the effects of staff development on the clinical supervisors themselves or on the students they were responsible for teaching. However, this potentially allows the effects of the assessment tasks to be isolated with greater confidence, given that there was very limited intervention in other aspects of the clinical attachment that varied across the three sites.

Implications

The findings of this study have relevance to other educational contexts where students are expected to develop and demonstrate professional qualities in workplace settings. The areas where findings and resources developed in this project may be used include other components of the medical programme and other Faculty programmes (*e.g.* quality and safety, ethics, medico-legal issues, communication), medical and health sciences education more generally (*e.g.* indigenous health and cultural competence education internationally), and non-health education programmes that aim to prepare students for future professional practice.

The importance of explicitly assessing competency areas such as Hauora Māori, despite the difficulty involved in doing so, cannot be overstated. Our qualitative feedback implied that students would not have undertaken the learning without the assessment requirements. This is consistent with the principle that assessment drives learning (Barrow, 2006; Biggs & Tang, 2007; Brown & Knight, 1994), and is supported by other research findings that if areas like cultural competence are not formally assessed, they can be seen by students as less important and therefore not emphasised in their learning (see, for example, Lypson *et al*., 2008).

Critical reflection in the assessment of Hauora Māori

An important aspect of the development of cultural competence is *critical reflection*, which is a process that can be used to free oneself from conditioned assumptions

about the world, others and oneself (Mezirow, 1998), and that can inform (trans)formation of core attitudes, beliefs and values. We believe that students who are best equipped to respond to the challenge of improving Māori health and reducing inequalities are those who can reflect on themselves as future doctors and consider the ways in which they embody the professional qualities of a doctor. This is consistent with the assertion that reflection and critical reflection are key requirements for professional competence (Schön, 1995). Self-reflection is an important vehicle for developing self-awareness and ultimately changing professional behaviour to encourage more equitable clinical practice (Murray-Garcia *et al*., 2005).

In this project, new assessment tasks with reflective components appeared to be more acceptable to students, compared to existing assessment tasks. It was feasible to design, implement and mark these new reflective tasks, and we found no evidence that these tasks were inferior in terms of educational outcomes or student engagement levels. This suggests that it would be appropriate to continue using critical reflection in the assessment of Hauora Māori as part of clinical teaching within the medical curriculum.

Limitations of the 'apprenticeship' model of learning

As noted earlier, medical programmes are normally delivered (in part) in clinical settings with students working alongside clinicians who seek to educate, mentor and assess them. This project has reinforced our current understanding of clinicians being most comfortable when overseeing students' acquisition and application of knowledge and the general professional and clinical skills.

The situated learning that occurs in clinical settings engages students in the social practice of medicine in order for them to begin to develop greater engagement and participation as medical professionals (Lave & Wenger, 1991). Our data point to some of the limitations of this 'apprenticeship' model of learning, or at least of the way this model is operationalised in the educational context under investigation. The exposure of students to a range of senior practitioners provides opportunities for them to learn and be assessed by the very professionals they seek to emulate (Barrow, 2006). However, when these professionals privilege the knowledge and clinical domains, while at the same time failing to address the attitudinal changes that are associated with the Hauora Māori domain, they give powerful messages to students about what is and is not important in medical practice.

Improvements to the way clinical teachers assess students' achievement of Hauora Māori competencies are critical. Assessment using the existing supervisor report form was rated as highly unsatisfactory by students in this study. Addressing this will require both a review of the tool itself and, of critical importance, staff development. Education of clinical teachers in assessment (particularly in the Hauora Māori domain) has the potential to significantly improve the quality of assessment in this area. This is consistent with one of the major recommendations of a review of assessment in undergraduate medical education in the UK (Fowell *et al*., 2000).

'Training the trainers': important but challenging

The ongoing success of the Hauora Māori domain in the various health professional curricula cannot be solely dependent on the Faculty's Māori Health department, Te Kupenga Hauora Māori. It has to involve investment in the development of other academics and clinical teaching staff, so that they are able to contribute to the strengthening of the Hauora Māori domain (Jones, 2011). This will ultimately result in greater ownership of the Hauora Māori domain by the Faculty and its staff beyond those currently involved in Māori health teaching, leading to a more solid 'bedding down' of the curriculum and ensuring the sustainability of changes such as those proposed in this project.

This is one of the key challenges facing assessment of Hauora Māori, and this area of the curriculum more broadly. There is genuine support, advocacy and direction from clinical and academic leaders associated with this component of the medical programme. However, translating this support into engagement among the many clinical supervisors and teachers who are involved in students' workplace-based education has proved problematic. For a number of reasons, the staff development that was envisaged as part of the project did not eventuate to anything like the extent planned. Considerable work is required to look at how to develop a cadre of clinical supervisors who are better prepared to facilitate learning and undertake assessment in the Hauora Māori domain.

Two significant challenges exist in relation to extending this approach to other clinical teaching settings in the medical programme and other health sciences programmes. As noted earlier, in many clinical attachments the Hauora Māori domain is not formally assessed other than through the supervisor report form. Implementing the type of assessment described in this proposal in these contexts could involve adding to an already demanding assessment load. We envisage addressing this issue by adapting the assessment tasks to fit with current approaches to assessment in the various attachments. For example, where existing assessments include a logbook in which students record learning experiences, this could be adapted to include reflection on encounters with Māori patients.

The other major challenge involves managing the staff development associated with any extension of Hauora Māori assessment into other areas within existing resources. This will minimise any additional burden on Māori health academic staff and contribute to the sustainability of the proposed changes. However, as identified in this project, building capacity in this area among clinical teachers is a hugely demanding task.

Future research needs

Future research is required to build on the knowledge gained through this project. There is a need to examine the validity, reliability, feasibility and acceptability of a range of assessment tools for assessing Māori health and related learning outcomes. This project has considered different forms of written assessment;

extending the scope to include more clinically situated methods of assessment will be an important avenue for future research.

With increased capacity among clinical supervisors for teaching and assessing Hauora Māori, it would be possible to develop, implement and evaluate more 'authentic' assessment tasks in clinical settings. In this project, the range of assessment tools we developed was necessarily limited by the ability of staff to assess students using them. The three tools were, therefore, written assessments, which did not require students to demonstrate achievement of competencies in clinical practice. Ideally, the assessments would have included more integrated and clinically situated methods (for example, incorporating assessment of Hauora Māori learning outcomes in clinical examinations such as mini-CEXs). It is recommended that future research examines assessment tasks such as these, as they are potentially better suited to assessing different learning outcomes. However, to achieve this will require a critical mass of clinical supervisors who are able to assess students in this domain in a valid and reliable manner.

At a more applied level, research could help to identify feasible and effective approaches to staff development. There are many obstacles to overcome in this area: clinicians are typically very busy, staff development in this area often competes with other demands that may be considered more urgent, and many senior clinicians may not consider themselves expert in cultural competence.

Conclusion

This project involved developing, administering and evaluating assessment tools to assess Māori health competencies among medical students in clinical settings.

While significant findings in terms of effects on educational outcomes were limited, important insights have emerged from the research. It has highlighted some shortcomings of the 'apprenticeship' model of learning, particularly for curricular domains such as Hauora Māori. It appears that incorporating a reflective component into assessment of Hauora Māori is acceptable to students and does not have any obvious disadvantages when compared to the existing assessment task.

In order to address the significant gaps that exist between expected learning outcomes and what is assessed, a more comprehensive range of assessment tools and methods will be required. Additional assessment tasks that focus much more on demonstration of competencies in clinical practice are needed to complement existing approaches. However, at the University of Auckland's Faculty of Medical and Health Sciences at least, there is currently insufficient capacity among clinical educators for this to be feasible.

Further work is therefore required to increase staff capacity in this area. When considering how this can be achieved, the challenges identified in this project in terms of engaging staff are instructive. These challenges suggest that, without

higher-level acknowledgement of the importance of Hauora Māori, competing demands on clinicians will continue to inhibit effective participation in staff-development activities. It is therefore clear that institutional commitment is an important prerequisite for progress in this curricular domain.

Recommendations

The major recommendations from this project are as follows:

1. *Develop, implement and evaluate assessment tasks that emphasise demonstration of Māori health competencies in clinical practice.*
   More clinically situated methods will allow assessment of behavioural aspects such as communication skills, and will complement existing written assessments. This approach also has the potential to build capacity among clinical teachers for assessing students' achievement in the Hauora Māori domain.

2. *Address assessment of Hauora Māori from a programmatic perspective.*
   Assessment of Māori health and related domains should be considered from the perspective of the educational programme. While evaluation of individual assessment methods and tools is important, it is also necessary to examine how the range of assessments conducted over the course of the educational programme contributes to an overall picture of achievement.

3. *Ensure that assessment in areas such as Hauora Māori matters.*
   If assessment in these areas does not count substantively towards educational achievement, students will be less likely to put the requisite effort into learning and assessment. Hauora Māori and related areas need to be positioned as educational domains in their own right, and performance should be associated with appropriate consequences for learners.

4. *Increase capacity among clinical teachers for assessment of Māori health.*
   The lack of capacity among clinical teachers to facilitate learning and undertake assessment in Hauora Māori limits the extent to which progress can be made in this area. Staff development is therefore critical for advancing knowledge and practice in assessment of Māori health.

5. *Demonstrate institutional commitment to Hauora Māori and related areas.*
   Many of the recommended actions from this research will require commitment at all levels of educational institutions in order for them to be fully realised. For example, leadership is needed to ensure that assessment of Māori health is valued appropriately, and that clinical teachers are prepared to facilitate learning and undertake assessment in this area.

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Appendices

Appendix 1: Guides to students for assessment tasks

Original case report

4th-YEAR MĀORI MEDICAL CASE HISTORY

This section provides a guideline for students preparing the Māori medical case history that is submitted in week 5 of the medical attachment.

As in the Department of Medicine 4th year attachment information booklet, the Māori medical case history should consist of an outline of the case history, examination findings, differential diagnosis, investigations and (where available) final diagnosis. This should be followed by a one- to two-page (approximately 750 words) discussion of:

- a culturally-appropriate management plan for the patient
- identification of your own strengths and any areas for improvement in communication and clinical skills when caring for a Māori patient.

The provision of a culturally appropriate management plan will allow the student to demonstrate their level of cultural competence, identify issues that have affected or may affect the health outcomes for the patient (including access to care/services/information and quality of care), identify specific approaches and behaviours that may be used when engaging with Māori patients and their whānau, and reflect on their strengths and areas for improvement when interacting with Māori patients.

Māori models of health

There are a number of Māori models of health – the most widely known is Te Whare Tapa Wha. It is crucial that you are familiar with and understand Te Whare Tapa Wha, the underlying concepts, and how these differ from Western concepts of health. This knowledge will provide you with the context from which you can develop your professional behaviour and practice in order to be an effective and culturally competent health professional.

DO NOT use this, or any other Māori model of health, as a framework for engaging with Māori patients and whānau, or for the discussion section in your case history. The Māori models of health are not clinical frameworks.

In the following section you are provided with some suggestions for areas that may be incorporated in the case history, and some “don’ts”. Please note that these lists are NOT exhaustive, and students are expected to demonstrate consideration of other aspects in addition to the ones noted below.

Examples of areas that could be included in your case history

Whānau

1. Family history in case history
2. Engagement with whānau members while patient in hospital such as
    a. arrangements for whānau visiting and staying with patient
    b. involvement of whānau in information giving, planning and decision making in relation to investigations, treatment, discharge and follow-up
3. Assessing whānau needs such as
    a. Is there any need to suggest screen or investigation of whānau members (e.g. siblings or children for diabetes, hypertension, cardiovascular disease, which commonly run in families and are often NOT identified and managed early)?
    b. Is the patient and their whānau receiving all the entitlements that they are eligible for (for example, home-help services, rehabilitation services, financial support from WINZ, ACC, disability benefits, accommodation supplements, high-user card status, etc)?

For people with chronic diseases or recurrent conditions

1. What is the history in relation to access to care, having a regular GP, recurrent hospitalisations, medications?
2. Are there any “barriers” or issues that have adversely impacted on the above? If so, what could be done to address these barriers/issues?
3. What is the patient’s and whānau’s knowledge and understanding of their illness(es), what causes it, what can be done about it, how it is managed by health professionals and what they can do (self-management knowledge and skills)?
4. If there are apparent knowledge gaps, what can you do? Where can you refer? What other resources are available to address these gaps?
5. Has treatment been consistent with (where available) evidence-based guidelines or “best practice” in the past, and during this admission? If not – what are the possible reasons for this?

Health services

1. Does the patient have a regular source of GP care?
2. What Māori health services are available
    a. in the hospital where you are working
    b. in the community where the patient lives
    c. how and when do you refer (or offer referral) to these services?

Communication and relationships with Māori

1. Discussion of what approaches you used to establish and build rapport with the patient and their whānau.

2. What policies and practices were in place/implemented to improve the cultural appropriateness of the hospital/ward environment?
3. Did you observe any interactions between the patient and other hospital staff that were based on stereotypes, reflected the common discourses about Māori, or were discriminatory? Note that if you do observe incidents such as this you are welcome to discuss this in person with Dr Sue Crengle or Dr Sue Hawken if you wish. As a student, you are not expected to raise these observations directly with the people (staff or patients) involved.
4. Are you aware of any stereotypes or discourses that you may have about Māori, your patient or their whānau? How may these affect your engagement with Māori?

Things to be avoided

Do not take an inappropriately detailed life history. The personal and social history taken should be consistent with that required to inform the care and management of the patient. It should not be intrusive and include life-story details that are not relevant to the management of the case at hand.

Do not ask patients what they think of the Māori models of health. We do not ask non-Māori patients what they think of Western medical models. There will be a diversity of responses, and some people will be made to feel very uncomfortable – especially if they feel as if their response is inadequate in some way (it is inappropriate to make your patients uncomfortable and will not enhance the rapport and relationship you have with the person).

Do not ask people if they have been treated well or experienced discrimination. These types of questions are very difficult for many people to answer – they are sitting in hospital, vulnerable, and reliant on the hospital and professionals for on-going care. On the other hand, patients whose response is that they have had problems in the past (or currently) may feel increased vulnerability because of this. It is important that we (health professionals and services) know this information. However, it should be collected in the context of (usually anonymised) feedback, evaluations, satisfaction surveys, or research. Also be aware that health services have specific policies and processes for investigating and managing patient complaints.

Remember diversity

The Māori population is diverse, and different people have different cultural practices, beliefs, and different experiences and expectations of health services. Do not expect every Māori patient to have the same requirements in terms of your cultural competence and skills for engaging with Māori patients and whānau.

Modified case report

Hauora Māori Assessment for 4th-Year General Medicine Attachment

Modified Case Report

As for the Māori medical case history described in the 4th-Year Māori Health teaching course book, this case report should consist of the case history, examination findings, differential diagnosis, investigations and final diagnosis. This should be followed by a one- to two-page (approximately 750 words) discussion of **ONE** issue that is particularly pertinent to the case. This should be a detailed exploration of the issue, supported by references to relevant literature. The discussion should be specific to the case, but should also draw on the evidence base to provide context and to support the points you make. Where possible, the report should include recommendations to improve outcomes for the patient and/or whānau related to the issue.

Examples of issues that you could explore:*

- The social or economic impact of the condition(s) on the patient and whānau
- The effectiveness of the healthcare team, in particular the linkages between different parts of the team
- Access to and through the healthcare system
- The role of whānau in managing and caring for the patient
- The role of Māori support services in hospital and/or Māori health providers in the community
- Discrimination or differential treatment
- The interface with traditional or alternative healing
- The whānau's and patient's knowledge and understanding of their condition(s), health literacy and implications for self-management
- Reflections on your interactions with the patient and whānau, for example exploring issues related to rapport and communication.

***** Please note that this is not an exhaustive list. The main thing is to select an issue that is of particular significance or interest in the case and that relates to the Hauora Māori learning outcomes.

Things to be avoided

Do not take an inappropriately detailed life history. The personal and social history taken should be consistent with that required to inform the care and management of

the patient. It should not be intrusive and include life-story details that are not relevant to the management of the case at hand.

Do not use Te Whare Tapa Whā or any other Māori model of health as a framework for engaging with Māori patients and whānau or for the discussion section in your case history. It is crucial that you understand these models of health, the underlying concepts, and how these differ from Western concepts of health, but they are not clinical frameworks. In addition, do not ask patients what they think of Māori models of health. We do not ask non-Māori patients what they think of Western medical models. There will be a diversity of responses, and some people will be made to feel very uncomfortable – especially if they feel their response is inadequate (it is inappropriate to make your patients uncomfortable and will not enhance the relationship).

Do not ask people if they have been treated well or experienced discrimination. These types of questions are very difficult for many people to answer – they are sitting in hospital, vulnerable and reliant on the hospital and professionals for their on-going care. It is important that we (health professionals and services) know this information. However, it should be collected in the context of (usually anonymised) feedback, evaluations, satisfaction surveys or research. Also be aware that health services have specific processes for investigating and managing patient complaints.

Remember diversity

The Māori population is diverse, and different people have different cultural practices and beliefs, and different experiences and expectations of health services. Do not expect every Māori patient to have the same requirements in terms of your cultural competence and skills for engaging with Māori patients and whānau.

This modified case report is to be submitted in week 5 of the General Medicine attachment.

Reflective commentary

Hauora Māori Assessment for 4th-Year General Medicine Attachment

Reflective Commentary

This assessment requires you to reflect on experiences during your 4th-Year General Medicine attachment that relate to Hauora Māori learning outcomes. It does not have to be confined to a particular case, but rather can be based on any observations and experiences you have during the attachment. This assessment aims to encourage experiential learning and help to integrate prior learning in Hauora Māori with 'real life' clinical experiences.

From your own experience during the attachment, please reflect (in about 1000 words) on any issues that came up that related to Hauora Māori. Note that these do not have to be specifically related to the care of a Māori patient or patients. For example, there may be aspects of the hospital environment or its policies and practices that have implications for Māori health and inequalities. You may observe health professionals' behaviour or discourse that you believe is likely to impact (either positively or negatively) on Māori patients, whānau and healthcare outcomes.

The following questions may help you to identify experiences that would be valuable to reflect on:

- What was the most surprising or unexpected experience/observation for you? Why?
- What did you see/do/hear that challenged your values, beliefs or assumptions?
- What did you see/do/hear that changed your perception of the health system, the medical profession or Māori health?
- What did you see/do/hear that *reinforced* a key concept or aspect of Māori health learning?
- What did you see/do/hear that *contradicted* or *challenged* a key concept or aspect of Māori health learning?
- What was the most important learning experience for you related to Māori health during this attachment?

For each experience, it may be useful to consider the following:

- What did you do, see, hear?
    - Try to describe what happened as objectively as possible.
- How did it make you feel?
    - If possible, recall your emotional response to the experience.

- So what? What does it mean?
    - How has this experience changed your perspective on Hauora Māori concept(s)?
    - If your clinical experience reinforces prior learning in Hauora Māori, what are the implications?
    - If your clinical experience contradicts or challenges prior learning, how do you reconcile these contradictions?
- Now what?
    - What does this mean for your learning and future professional practice?
    - What would you do, as a future health professional, to address any issues raised by this experience?

Where possible, your reflection should be supported by references to relevant literature.

Additional notes

Do not ask people if they have been treated well or experienced discrimination. These types of questions are very difficult for many people to answer – they are sitting in hospital, vulnerable and reliant on the hospital and professionals for their on-going care. On the other hand, patients whose response is that they have had problems in the past (or currently) may feel increased vulnerability because of this. It is important that we (health professionals and services) know this information. However, it should be collected in the context of (usually anonymised) feedback, evaluations, satisfaction surveys or research. Also be aware that health services have specific policies and processes for investigating and managing patient complaints.

Did you observe any interactions between the patient and other hospital staff that were based on stereotypes, reflected the common discourses about Māori, or were discriminatory? Note that if you do observe incidents such as this you are welcome to discuss this in person with Dr Sue Crengle or Dr Rhys Jones if you wish. As a student, you are not expected to raise these observations directly with the people (staff or patients) involved.

This assessment is to be submitted in week 5 of the General Medicine attachment.

Appendix 2: Evaluation questionnaires

Pre-attachment questionnaire

Student Pre-Attachment Questionnaire
Assessing Hauora Māori in Medical Students in Clinical Settings

In your experience as a medical student, about how often have you done each of the following? Mark your answers in the circles. Leave blank if the item does not apply.

NEVER 1 SOMETIMES 2 OFTEN 3 VERY OFTEN 4

	1	2	3	4
Reviewed expected Hauora Māori learning outcomes	○	○	○	○
Undertaken self-directed learning about Māori health	○	○	○	○
Accessed Māori health statistics related to a particular area of study	○	○	○	○
Drawn on literature about health inequalities in NZ	○	○	○	○
Used ideas or concepts from Hauora Māori for completing assignments and other course work	○	○	○	○
Discussed Hauora Māori issues with class members	○	○	○	○
Discussed Hauora Māori issues with teaching staff	○	○	○	○

CONTINUED

The following items seek your views about Māori health and related topics. Please indicate your agreement or disagreement with the following statements by filling in the bubble with the appropriate response number.

STRONGLY DISAGREE 1 DISAGREE 2 UNDECIDED 3 AGREE 4 STRONGLY AGREE 5

	1	2	3	4	5
Improving Māori health should be a social priority	○	○	○	○	○
Māori people enjoy the same level of access to health care as all other New Zealanders	○	○	○	○	○
Health care in New Zealand is delivered fairly to all ethnic groups	○	○	○	○	○
Special provisions made for Māori in mainstream health services privilege one ethnic group over all others	○	○	○	○	○
Most Māori patients in hospital are there because of poor lifestyle choices	○	○	○	○	○
Achieving good health is as important to Māori people as it is to people from other ethnic groups	○	○	○	○	○
Māori patients are often unwilling to adhere to medical treatment or advice	○	○	○	○	○
Involvement of whānau in health care decision making should be minimised due to privacy concerns	○	○	○	○	○
Māori patients' use of traditional medicines is dangerous and medical practitioners have an ethical responsibility to discourage their use	○	○	○	○	○
The best way to identify Māori patients in hospital is to ask the ethnicity of those with Māori names or who look like Māori	○	○	○	○	○
It is important to pronounce Māori names correctly	○	○	○	○	○
Māori cultural support workers in hospital are an important part of the health care team	○	○	○	○	○
In my future practice I will ensure all patients receive equitable care by treating everyone the same	○	○	○	○	○
As a doctor, my future role in improving Māori health will be limited to treating sick patients in a hospital or clinic	○	○	○	○	○
Self-reflection is an important element of professional medical practice	○	○	○	○	○
Health practitioners should be subject to formal objective assessments of their practice	○	○	○	○	○
My culture has an influence on the way I interact with patients	○	○	○	○	○
When I first meet a Māori patient, I have no preconceived ideas or stereotypes about him/her	○	○	○	○	○

Post-attachment questionnaire

Student Post-Attachment Questionnaire
Assessing Hauora Māori in Medical Students in Clinical Settings

In the Year 4 General Medicine attachment, about how often have you done each of the following? Mark your answers in the circles. Leave blank if the item does not apply.

NEVER 1 SOMETIMES 2 OFTEN 3 VERY OFTEN 4

	1	2	3	4
Reviewed expected Hauora Māori learning outcomes	○	○	○	○
Undertaken self-directed learning about Māori health	○	○	○	○
Accessed Māori health statistics related to a particular area of study	○	○	○	○
Drawn on literature about health inequalities in NZ	○	○	○	○
Used ideas or concepts from Hauora Māori teaching	○	○	○	○
Discussed Hauora Māori issues with class members	○	○	○	○
Discussed Hauora Māori issues with teaching staff	○	○	○	○
Engaged with Māori patients and whānau	○	○	○	○
Sought advice from academic staff or clinical teachers when working with Māori patients	○	○	○	○
Thought critically about the quality of care that Māori patients are receiving	○	○	○	○
Reflected on other health professionals' interactions with Māori patients and whānau	○	○	○	○
Reflected on your own interactions with Māori patients and whānau	○	○	○	○
Identified possible barriers to Māori patients and whānau achieving optimal health outcomes	○	○	○	○
Intervened or suggested possible actions to enable Māori patients and whānau to achieve optimal health outcomes	○	○	○	○
Participated in a whānau meeting for a Māori patient	○	○	○	○
Familiarised yourself with Māori health agencies relevant to the attachment	○	○	○	○
Engaged with DHB, hospital or another provider's Māori health services (e.g. Kaiatawhai services)	○	○	○	○

How many Māori patients did you see during this attachment? ☐

CONTINUED

The following items seek your views about Māori health and related topics. Please indicate your agreement or disagreement with the following statements by filling in the bubble with the appropriate response number.

STRONGLY DISAGREE 1 DISAGREE 2 UNDECIDED 3 AGREE 4 STRONGLY AGREE 5

	1	2	3	4	5
Improving Māori health should be a social priority	○	○	○	○	○
Māori people enjoy the same level of access to health care as all other New Zealanders	○	○	○	○	○
Health care in New Zealand is delivered fairly to all ethnic groups	○	○	○	○	○
Special provisions made for Māori in mainstream health services privilege one ethnic group over all others	○	○	○	○	○
Most Māori patients in hospital are there because of poor lifestyle choices	○	○	○	○	○
Achieving good health is as important to Māori people as it is to people from other ethnic groups	○	○	○	○	○
Māori patients are often unwilling to adhere to medical treatment or advice	○	○	○	○	○
Involvement of whānau in health care decision making should be minimised due to privacy concerns	○	○	○	○	○
Māori patients' use of traditional medicines is dangerous and medical practitioners have an ethical responsibility to discourage their use	○	○	○	○	○
The best way to identify Māori patients in hospital is to ask the ethnicity of those with Māori names or who look like Māori	○	○	○	○	○
It is important to pronounce Māori names correctly	○	○	○	○	○
Māori cultural support workers in hospital are an important part of the health care team	○	○	○	○	○
In my future practice I will ensure all patients receive equitable care by treating everyone the same	○	○	○	○	○
As a doctor, my future role in improving Māori health will be limited to treating sick patients in a hospital or clinic	○	○	○	○	○
Self-reflection is an important element of professional medical practice	○	○	○	○	○
Health practitioners should be subject to formal objective assessments of their practice	○	○	○	○	○
My culture has an influence on the way I interact with patients	○	○	○	○	○
When I first meet a Māori patient, I have no preconceived ideas or stereotypes about him/her	○	○	○	○	○

CONTINUED

The following items relate to teaching and assessment of Hauora Māori on the Year 4 General Medicine attachment. Please indicate your agreement or disagreement with the following statements by filling in the bubble with the appropriate response number.

STRONGLY DISAGREE 1 DISAGREE 2 UNDECIDED 3
AGREE 4 STRONGLY AGREE 5

Learning outcomes	1	2	3	4	5
The expected learning outcomes for Hauora Māori in this attachment were clearly stated	○	○	○	○	○
The assessment tasks were well aligned with the expected learning outcomes	○	○	○	○	○
The assessment tasks covered all of the stated Hauora Māori learning outcomes	○	○	○	○	○

Assessment by clinical supervisors					
Assessment of Hauora Māori was fair and appropriate	○	○	○	○	○
The assessment gave me enough opportunity to demonstrate competence in this area	○	○	○	○	○
The assessment assessed qualities that will be important for my future practice	○	○	○	○	○
I had a clear idea of what was expected of me in the assessment	○	○	○	○	○
The grading criteria for the assessment were clear	○	○	○	○	○
The assessment process helped guide my learning	○	○	○	○	○
Feedback on assessment was useful	○	○	○	○	○

Other assessment task (Case History or Reflective Commentary)					
The assessment task gave me enough opportunity to demonstrate competence in this area	○	○	○	○	○
The assessment task assessed qualities that will be important for my future practice	○	○	○	○	○
I had a clear idea of what was expected of me in the assessment	○	○	○	○	○
The marking criteria for the assessment were clear	○	○	○	○	○
The assessment task was set at an appropriate level of difficulty	○	○	○	○	○
The time spent preparing for and undertaking assessments was appropriate	○	○	○	○	○
The assessment challenged me to do my best work	○	○	○	○	○
The assessment encouraged me to undertake self-directed learning	○	○	○	○	○
The assessment process prompted me to engage with Māori health learning	○	○	○	○	○
Feedback on assessment was useful	○	○	○	○	○

CONTINUED

STRONGLY DISAGREE 1 DISAGREE 2 UNDECIDED 3 AGREE 4 STRONGLY AGREE 5

General	1	2	3	4	5
Overall, assessment of Hauora Māori on this attachment was fair and appropriate	⬭	⬭	⬭	⬭	⬭
Teaching provided on this clinical attachment was helpful in preparing for the assessment(s)	⬭	⬭	⬭	⬭	⬭
Teaching provided elsewhere in the programme was helpful in preparing for the assessment(s)	⬭	⬭	⬭	⬭	⬭
This clinical attachment enhanced my understanding of Māori health	⬭	⬭	⬭	⬭	⬭
This clinical attachment helped me to develop skills for working with Māori patients and whānau	⬭	⬭	⬭	⬭	⬭

What did you find useful about the Hauora Māori assessments in this attachment?

How could this assessment process be improved?

Any other comments?