It is more than two decades since mandatory continuing education (MCE) was introduced in the United States and barely a decade since some professional associations adopted MCE in Australia. The value of MCE as a means of maintaining or improving professional competence remains unclear. Despite being no clear cut evidence of enhanced competence, no profession having adopted MCE has returned to a policy of voluntary continuing education. In Australia there appears to be a drift of health professions into mandatory continuing education. If MCE is adopted by the physiotherapy profession, what will the reasons be? The challenge is to clearly establish the links between continuing education, professional competence and health outcomes.

Mandatory continuing education (MCE) was introduced in the United States for certain professions in the late 1960s and early 1970s. It was implemented by some states as a means of strengthening the renewal of licence process. All licensed or registered practitioners in the relevant profession were required to participate in designated amounts of continuing education in the hope that such participation would enhance their performance. After two decades, the value of MCE as a method of maintaining or improving professional competence remains controversial at best, and the MCE movement in the United States, particularly with respect to the health professions, has slowed significantly.

If the evidence is unclear for the maintenance or improvement of professional competence as a consequence of MCE, is the evidence any clearer for voluntary continuing education (VCE)? Again, the answer is no.

What was it then that provided the springboard in the United States for the adoption of MCE and for linking it with renewal of licence or re-registration? To set the scene, it is necessary to go back to the concept of professional obsolescence to consider how early writers viewed this concept and its measurement.

Professional obsolescence and its measurement

In 1972, Dubin proposed the half-life concept (a term drawn from nuclear physics) as a useful measure for estimating the extent of obsolescence in various professions. He described the half-life of a professional's competence as "the time after completion of professional training when, because of new developments, practising professionals have become roughly half as competent as they were upon graduation to meet the demands of their profession" (p.487). That is, he linked obsolescence with new developments and new knowledge.

It is two decades since Dubin cited estimates of the half-life of professional knowledge to be five years only for medical and engineering graduates and 10-12 years for psychologists. Streatfield, as recently as 1990, stated "In engineering depending upon the particular discipline, the half-life is estimated to be between three and six years.... the rate of technological progress is such that within a few years of completing a course, engineering graduates find much of their hard won knowledge is obsolete."

Rosenow, who was at the time Vice-President of the American College of Physicians, estimated the half-life of medical knowledge as five years, based upon the results of a 700 item objective test of medical knowledge taken by members of that College. (His findings were reported in an unpublished paper cited by Dubin in 1972). If his findings are considered in conjunction with the tremendous growth of health science information as gauged simplistically by...
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the increase in size of Index Medicus (a 100 per cent increase in two decades since 1970) and the half-life concept then invoked, the conclusion must be that after 10 years, a medical practitioner who fails to learn new knowledge and skills may be only 25 per cent as effective as he or she was at the time of graduation. It is very likely that a similar formula can be applied to physiotherapy (Kirkby and Bate 1989).

Underlying all of these estimates of obsolescence is the assumption that a practitioner who does not keep up with new knowledge, new skills and new research findings becomes obsolete at the same rate as the knowledge increases. However, not all knowledge is of equal value to the practitioner. A plethora of clinical and research papers in the manipulative physiotherapy area may have only marginal relevance for the physiotherapist working in the cardiorespiratory or neurological fields. In this example, the hounds of obsolescence may be nipping at the heels of the orthopaedic manipulative physiotherapist whilst the knowledge and skills of physiotherapists in other areas may or may not remain relatively up-to-date (Grant 1992).

Mandatory continuing education – the answer to professional obsolescence?

As early as 1967, the National Advisory Commission on Health Manpower of the United States recommended that professional societies and state governments explore the possibility of periodic relicensing of physicians and other health professionals. It recommended that re-licensure be granted either upon certification of acceptable performance in continuing education programmes or upon the basis of challenge examinations in the practitioner's specialty. Furthermore, the Commission advocated that "professional associations and regulatory agencies take steps to assist practitioners to maintain competence" (Rizzuto 1982, p. 37).

So the era of MCE in the United States was ushered in, and gradually professional groups, either as a result of pressure from the legislature in different states or from within the chapter membership, found mandatory continuing education included in the practice act in their state. But the momentum slowed. In some professions, as may be seen from Table 1, there was widespread acceptance, in some moderate acceptance, but in others there was little movement in this direction.

By June 1990, the APTA State Licensure Guide reported 12 states (less than one quarter of all states) where completion of continuing education courses was a condition of renewal of the physical therapy licence - in other words a system of MCE. Finley (1988) evaluated MCE in the health professions in the United States in order to "guide the Florida Chapter in making a decision concerning whether the MCE requirement for relicensure should be added to the State practice act" (p. 375). It is interesting to note that the 1990 APTA Guide did not list Florida amongst the 12 states with this requirement.

MCE would seem to have face validity as an antidote to professional obsolescence. It would also seem to have face validity as a method of maintaining or improving professional competence. However, results from studies undertaken to date are conflicting at best (Brennan 1990 and 1992, Finley 1988, Mays 1984, Meservy and Monson 1987, Phillips 1987, Sibley et al 1982, Thurston 1992).

Mandatory continuing education in Australia

A review of the latest information on the mandatory continuing education issue in Australia is instructive because it makes it possible to monitor not only the pace and direction of change but also the reasons for such change.

Unlike the situation in the United States, there were no professional associations with MCE in Australia in the 1970s and early 1980s. In 1985, the Australian Society of Accountants adopted a requirement for a specific number of hours of professional development (Singh 1990) and in 1987 the Law Society of New South Wales ushered in MCE (Nelson 1990).

Interestingly, the Manipulative Physiotherapists Association of Australia (MPAA), a special group of the Australian Physiotherapy Association, at its Annual General Meeting in 1983, had voted overwhelmingly for the introduction of a MCE points systems linked to maintaining membership of the MPAA. Since membership was possible in the first instance, only by successful completion of formal

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**Table 1: Trends in mandatory continuing education in the USA 1977-1988 (modified from Brennan, 1990)**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Dentist</td>
<td>8</td>
<td>9 (1)</td>
<td>10</td>
<td>14</td>
</tr>
<tr>
<td>Engineer</td>
<td>0</td>
<td>1 (1)</td>
<td>1 (1)</td>
<td>1 (1)</td>
</tr>
<tr>
<td>Psychologist</td>
<td>8 (6)</td>
<td>12 (9)</td>
<td>16 (8)</td>
<td></td>
</tr>
<tr>
<td>Physical Therapist</td>
<td>3</td>
<td>3 (1)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Medical Practitioner</td>
<td>17 (11)</td>
<td>20 (4)</td>
<td>18 (4)</td>
<td>22</td>
</tr>
<tr>
<td>Social Worker</td>
<td>6</td>
<td>10</td>
<td>18</td>
<td>23 (4)</td>
</tr>
</tbody>
</table>

**Note:** First digit - Numbers of states with mandatory requirements.
Second digit in parenthesis = Numbers of states with enabling legislation passed.
In Australia, the big questions nationally included whether the initiative of the accountants and lawyers would lead to a rush to adopt MCE, what reasons would be given for maintaining VCE or adopting MCE and whether Australia would follow the United States in linking MCE to relicensure, that is make it a condition of the right to practise.

In 1992, Brennan reported on a survey of professional occupations around Australia. Results from 62 professional associations formed the basis of data analysis. (Individual professions were not identified, as the purpose of the research was to seek a general picture of policy choices across professions). A number of professions had multiple listings, for example, in the health practitioner group, there were a number of specialist medical associations as well as the Australian Medical Association. Thus it needs to be understood that the 62 professional associations did not equate with 62 different professions.

Brennan (1992) found clear evidence of a movement towards MCE from no involvement in the early 1980s to 19 associations by 1991 (or 31 per cent of those surveyed).

Those who had moved to MCE, or were intending to do so, cited reasons which collectively might be described as pragmatic. Survey responses in support of MCE cited evidence that no profession which had adopted MCE had returned to a policy of VCE. So, despite the fact that there was as yet no clear cut evidence of enhanced competence, MCE was deemed to have some beneficial effects. Other reasons given related to MCE being a practical response to problems faced by the profession; eg image problems; competition with other professions; and a response to the challenges of professional change. Further, it can be deduced that MCE, as a method of self-regulation, could be perceived by some observers as evidence of the ability of a professional association to provide leadership, set standards and demonstrate its accountability and effectiveness.

The greatest move towards MCE, as far as can be ascertained from Brennan’s survey, was in the “minor occupational group 3 – health diagnosis and treatment practitioners”. Twenty-two associations in this category were represented in the survey. Five already had a mandatory continuing education policy and another four were reported as reviewing their VCE policy within the next three years. As explained earlier in this paper, this minor group contained several even smaller groups which were specialised sub-groups of a larger professional body. Brennan suggested that, in these cases, MCE might be linked to the purpose of achieving or maintaining control for that group over an area of professional territory, in that “providing evidence of compliance with specific MCE promotes a special claim to work exclusively in that territory.”

No professional association can claim 100 per cent membership. Therefore, could the adoption of MCE be related to a move to increase membership? Those associations surveyed which had adopted MCE reported that increased membership did indeed occur, but was a result of MCE rather than a reason for its adoption. The prospect of increased membership may, however, influence policy decisions in the MCE direction for those professional associations reviewing their continuing education.

The adoption of MCE by professional associations in Australia, unlike in the United States, was not linked to registration or re-registration (Brennan 1992). An analysis of responses in the case for VCE revealed in some cases a laissez-faire attitude toward continuing education – that is, continuing education was part of an association’s programme but the respondents were not sure why, or what it was supposed to achieve. However, other associations held to the VCE option with conviction. The two major reasons given by the pro-VCE groups were that “the ultimate responsibility for competence resides with the individual practitioner” and “participation in MCE does not guarantee competence”. By comparison, the two most common reasons for adopting the MCE policy were “to keep up to date should be part of the practice of every professional, not just a few” and “pre-service training is less and less capable of training practitioners for the changing nature of professional practice.”

The major conclusion which can be drawn from Brennan’s work is that the choice for any professional association in developing a policy of continuing education is a difficult one. The decision to continue with a VCE policy or adopt a MCE policy has implications well beyond simply whether or not a more competent practitioner might be the result. Such a decision has implications for a whole range of significant policies for a profession (Brennan 1993).

At the annual general meeting of the Manipulative Physiotherapists Association of Australia in 1987, the results of a survey of the first four years of MCE were presented (Magarey 1987). Eighty-six per cent of 355 members around Australia responded to the survey; 97 per cent of these were supportive of continuing with the MCE scheme. Amongst the comments in support were: “....promotes an active and vital interest in manipulative therapy, helps members improve and develop new skills”; “....a healthy principle, we are leading the way for the profession”; “....good public relations for the MPAA” and “....not the ideal model yet but probably the best possible and practical”.

This survey has recently been followed up by a survey of manipulative physiotherapists in New South Wales. This was undertaken by the Physiotherapists Registration Board of New South Wales (1993). Seventy-nine per cent of 160 therapists surveyed, responded. There was again overwhelming support for the concept of MCE with 85 per cent responding favourably (McCormick and Marshall 1994). Eighty per cent considered that MCE had enhanced their clinical
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practice. In response to a question about the ease or difficulty of obtaining MCE points, the national survey in 1987 had shown that 84 per cent had "found it easy to obtain avenues of continuing education to gain points" and this was confirmed in the New South Wales survey with 78 per cent finding "no difficulty in obtaining MCE points". It is interesting to note that most surveys of professional associations which have adopted MCE show an approval rate of around 76 per cent, and approximately 72 per cent of respondents are of the view that MCE makes them better practitioners (Phillips 1987).

The comments of those manipulative physiotherapists who did not support the MCE scheme (3 per cent [eight respondents] in the national survey and 19 per cent [16 respondents] in the New South Wales survey) are instructive. Those who supplied comments uniformly recognised that continuing education was important and would have attended continuing education courses or conferences anyway and therefore saw no need for it to be made mandatory.

So, to date, we have anecdotal evidence that no professional association which has adopted MCE has returned to a policy of VCE. In the MPAA surveys, those who did not support MCE clearly viewed continuing education as vitally important but eschewed mandating it. Phillips (1987), in writing about the history of continuing education in the United States, suggested that the reason why the MCE movement by the health professions had slowed was that these professions had a long history of commitment to VCE. Because of this, relatively few additional American states had introduced MCE legislation in the health professions in recent times.

### Changing the emphasis in continuing education

Professions have increased their involvement in and commitment to lifelong learning with or without mandates. However, in the most active of continuing education programmes or initiatives (whether MCE or VCE) nearly all available energy has been expended on inputs and process and not on outcomes. Particularly in the case of MCE, much energy has been expended in establishing a suitable range of courses, monitoring standards, keeping records and identifying preferred providers. There has been little emphasis placed on the evaluation of outcomes (Brennan 1990, Craig 1984, Finley 1988). Putting it simply, too much emphasis has been placed on programmes which count participants rather than assess learners.

Few studies have formally assessed change in practice by physiotherapists following a continuing education programme. Mays, in 1984, reported a change in practice both at two weeks and at six months following a continuing education programme which comprised a three day neurodevelopmental approach to gait training. Three methods were used to document change: the self report (where each participant recorded at specific times, information requested by the investigator), the record-audit (where patients’ records were independently reviewed for specific information) and the direct observation method (by an independent therapist). Whilst the self-reporting method revealed a significant change in practice by the physical therapists in the study (p<0.01) neither the record audit nor the direct observation method did so.

It is particularly interesting that it was the self report method which revealed a significant change in practice, because this is consistent with perceptions by therapists themselves, as described in the surveys conducted following the inception of MCE amongst manipulative physiotherapists in Australia. However, many studies have been unable to establish that continuing education has been effective in producing a more competent practitioner. Why, then, do some programmes seem to have an impact and others not?

Stein (1981) reported on eight studies of programmes that produced changes in performance by physicians. Five elements were found to be common in all of these studies.

- **Specified audience** – each physician in the learning process was clearly defined
- **Identified learning need** – each physician had expressed a desire to learn something and could identify a specific need, a gap between present and optimal performance
- **Clear goals and objectives** – it was clear to all involved what was to be learned
- **Relevant learning methods, emphasis on participation and a clinical setting** – methods of learning were primarily participative, involving small group discussion and/or clinical procedures
- **Systematic effort to evaluate** – assessment of the value of the learning experiences was decided when the programmes were developed and based on clear definitions of learning needs. A variety of techniques were used.

To this list of elements can be added greater use of self-assessment and peer assessment in a nurturing environment for learning, motivation and overall competence.

Houle in 1980 predicted an ever increasing involvement in continuing education. He stated: "It seems likely that, in the years just ahead, continuing education will mature in size and grow in size until it becomes at least as important as initial training has come to be. This increase in significance will be enhanced by an ever greater concern for quality assurance... (p. 267)."

### Conclusion

It is now time to return to the question: continuing education – does it make for a more competent practitioner?

Clear cut evidence that continuing education, whether VCE or MCE, makes for a more competent practitioner still eludes researchers. However, despite this lack of evidence there appears to be, at least in
Australia, a slow inexorable drift by professions into mandating continuing education. The reasons appear more political than educational, yet the success of any continuing education policy will be determined in no small part, by the practitioner's evaluation of its pertinence to his or her professional practice.

It is salutary in this context, to remember that the students who enter classrooms today will be practising well into the 21st Century, and to also remember that most members of the Australian physiotherapy profession still have 30 years of professional life ahead of them.

The challenge for individuals, for professional associations and for universities moving into continuing education is to clearly establish the links between continuing education, professional competence and outcomes.

References