

How a national sports injury body could work in Australia

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Background

Sports injuries are a substantial cost to the health system in Australia. Financially, the burden may now be close to \$2 billion in direct costs¹. Sports injuries also have a negative impact on the amount of exercise that Australians undertake. Currently almost half the population (47 percent) do not meet the minimum amount of physical activity for preventing those diseases associated with inactivity². Those who are injured are often unable to exercise and, in addition, fears of injury and/or injury costs are barriers to Australians who are considering taking up exercise. Most importantly, there is increasing evidence that some sports injuries are preventable if managed systematically by government³. The basic template for systematic sports injury prevention was described by Van Mechelen in 1992. This involves four stages as shown in Table 1

Advancements on the Van Mechelen paradigm have been described, including a Translating Research into Injury Prevention Practice (TRIPP) paradigm (Table 1)⁴. However, the basic Van Mechelen formula is behind the successful approach of the New Zealand government body the Accident Compensation Corporation (ACC, <http://www.acc.co.nz/index.htm>) which has demonstrated cost savings from such an injury prevention approach³.

On this basis, there is a strong argument for Australia to implement a Federal government body with responsibility for monitoring and preventing sports injuries^{1,5}. What is less clear is how to deliver such a body in a way that makes it functional, rather than an overseeing committee with little power or influence on sports injuries. We can look to New Zealand and identify that their system for monitoring, compensating and preventing sports injuries is superior to Australia's position, given our lack of any comparable system¹. There are some other useful international comparisons, such as Switzerland and Finland (which have national government owned insurers), Quebec in Canada (with has a regulatory board), the USA (which has some national injury surveillance registers) and Norway which has recently implemented a national knee reconstruction register⁶.

However, New Zealand is logically where we should look to first, given our proximity, cultural and sporting similarities, the fact that their ACC system has been functioning successfully for over 20 years and also that it has recently demonstrated cost effectiveness of injury prevention programs in sports that are commonly played in Australia³. New Zealand also has a much greater proportion of government health spending on public health and prevention than in Australia

(7.4% compared to 2.1%)⁷ and is not showing the same rate of increase in obesity being exhibited in Australia⁷. As certain sports injury rates in New Zealand also appear to be lower than Australia⁵, there is a strong argument to use the New Zealand system as a benchmark for comparison.

Comparison with New Zealand system

A quick glance at the current Australian and New Zealand system leads to the view that it would be difficult to import the New Zealand ACC structure in its entirety (Table 2). Sporting bodies might find some advantages with this option, but there would be plenty of opposition to such a proposal in Australia from powerful lobby groups including the following:

- Sports insurers, who would instantly lose all of their business overnight to a government monopoly.
- Private health insurance companies, who would lose one of the major incentives for younger members to join (that, currently, operations for sports injuries are able to be performed in a more timely fashion in the private system)
- Some health care providers may also object if the fee schedule for a sports compensation system was lower than their standard charges. The ACC, like the Workers Compensation systems in Australia, funds patients 100% for their health care, but caps payments. Workers Compensation bodies in Australia keep the peace with health care providers by making their capped payments very generous. However, the Australia public would be unlikely to fund generous payments to all providers out of general revenue, with health care providers unlikely to be happy with capped payments that weren't lucrative.

Table 1 – TRIPP framework (developed from Van Mechelen)

| Stages of injury prevention (TRIPP) | Van Mechelen stage |
|---|--------------------|
| 1. Injury surveillance | Stage 1 |
| 2. Establish aetiology and mechanisms of injury | Stage 2 |
| 3. Develop possible preventive measures | Stage 3 |
| 4. 'Ideal conditions' scientific evaluation of preventive programs | Not included |
| 5. Describe implementation of preventive programs into 'real world' | Not included |
| 6. Monitor success of intervention | Stage 4 |

Table 2 – comparison of New Zealand and Australian systems

| Characteristic | New Zealand system currently | Australian situation currently | Desired Australian situation (?) |
|---|---|---|---|
| National surveillance of all sports injuries by a single body | Has been implemented for >20 years | Very little data kept with no monitoring of this data | Highly desirable in the longer term. However, if a single government payer was not implemented, the more cumbersome option of paying multiple bodies (Medicare, sports insurers, private insurers, sporting bodies, public hospitals) for their data would be required. |
| Preventive programs to lower the rate of sports injuries | Already in place for 8-9 major sports with some very effective ³ | Haphazard at best and non-existent in many cases | We must move in this direction, but as per the Van Mechelen ⁸ and TRIPP ⁴ paradigms, successful injury surveillance is a crucial stage towards this. |
| Full government compensation for immediate treatment of all health care costs associated with sports injuries | Already in place for all sports. However, covers 'acute onset' injuries only | No Federal government compensation other than Medicare (+indirectly through public hospitals and private health rebate) | Full compensation may not be affordable or necessary (given that it is not currently taken for granted by Australians). However, partial compensation may be affordable (and in fact a necessary incentive to obtain sports injury data) |
| Full government compensation for lost wages when unable to work due to a sporting injury | Already in place for all sports. At an extreme, this means that someone totally permanently disabled by a sporting injury could receive lifetime compensation payments of up to NZ\$14 million ^{5,9} . | Not available. Lump sum insurance payments for total and permanent disablement (e.g. quadriplegia) from sport are currently not greater than A\$300,000 ^{5,10} | Similarly this may not be considered affordable. However, partial compensation, if affordable, may be an incentive towards encouraging physical activity. Such a government body must also contribute to solving the inadequacy of current insurance payments for total and permanent disablement from sport. |

- Plaintiff law groups, who would fear that any move towards a no-fault universal sports injury compensation system would also be accompanied by the New Zealand style restrictions on right to sue for negligence involved in sports injuries.
- Fiscal conservatives in the Federal government who saw government support of sports injury insurance as substantially a form of 'middle-class' welfare would also need convincing that such a system was cost effective.

The potential objectors listed above makes the problem of implementing a national sports injury insurance scheme in Australia somewhat analogous to the much bigger issue of the entire health care system in the United States. From the outside, it is easy to point the finger at the USA's inefficient privatised health system and insist that they should implement a nationalised government system to replace it. However, with the pre-existing massive private health infrastructure in the USA, starting from scratch with a government system appears to be close to impossible to achieve. Many Americans, along with

their associated lobby groups, would be certain to object to the job losses, tax increases and waiting lists that would be part of a government monopoly system, despite the potential advantages of better health outcomes for much of the population.

It is not constructive just to assert that it would impossible for the New Zealand system to be translated over to Australia and therefore to conclude that nothing better could be done in this country. Table 2 lists the advantages of the New Zealand system showing which features should be a high priority for implementation in Australia and those which may be considered less feasible or affordable. An important aspect of Table 2 is the concept that a 'partial compensation' model may be a 'middle ground' which could make a national system acceptable. A Federal government contribution towards sports insurance claim payments and private hospital episode payments, payable only on receipt of episode injury data, solves many problems in one hit. It is a government contribution towards those playing sport (and hence a 'rebate' for

the physically active), it forces recording of basic injury data details and it would put sports insurers and private health insurers 'on side' with the new system. In a similar fashion, the government would need to add an additional rebate within its own Medicare system to facilitate collection of data (for example, a 'bonus' rebate per attendance payable on receipt of diagnosis, sport and basic mechanism information). The amount per episode needs to be calculated as a trade-off of cost vs. compliance (i.e. what is the minimum cost to government which would lead to acceptable compliance by data providers). It may be sensible to trial such a scheme in a pilot region (e.g. ACT) to gauge whether a small co-payment is enough to capture the majority of data or whether more generous payments are needed.

An alternate option would be to make sports (and perhaps other non-traffic and non-work) injuries ineligible for Medicare payments, but to create a parallel Federal government system. This system could differ from Medicare in that (1) rebates were slightly more generous, giving an incentive for this

system to be used over Medicare with a qualifying injury, but (2) rebates were only paid on receipt of basic injury data. Finally, consideration would need to be given to partial government funding of paramedical presentation for sports injury, such as physiotherapy, podiatry and exercise physiology. The most effective model for this in Australia would probably be in a similar vein to physiotherapy rebates after 'chronic care' plans have been completed by the GP, using GPs as a gatekeeper for appropriate referrals (for limited visits).

Weaknesses of the New Zealand system

Table 3 lists some of the weaknesses of the New Zealand system, with a view that some of these structural weaknesses could be prevented when designing an Australian system from scratch. One of the biggest strengths of the New Zealand system is that by generously funding sports injury, the New Zealand government is providing a government support or 'rebate' for sports and physical activity. Just as all Western governments now heavily tax smokers, it would theoretically be sound for governments to 'tax' inactivity, as inactivity is closing in on smoking as the greatest preventable cause of disease in Western society^{11,12}. However, the New Zealand system, by rebating on an injury-by-injury basis, is giving relatively higher rebates to the riskier sports. The theoretically-perfect sport or exercise which provided all of the health benefits of physical activity but with a zero risk of injury would therefore receive no rebate under the ACC system. By contrast,

sports which are so likely to cause major injury that their net health risks exceed their benefits are those which are most generously funded under the ACC model. It is perhaps not coincidental that 'extreme' sports seem to have greater popularity in New Zealand than in other countries.

The realistic model for Australia: implementation in stages

A premium model, with semi-fixed government contributions for all active individuals, would give stronger incentives towards participation in the safest sports. By capping government contributions to riskier sports, such a system could reduce the amount of government funding required, compared to the New Zealand model, and arguably gives greater incentive towards participation in safer sports. Those individuals who are regularly active in sports that are proven by claims received data to be highly safe (for example, power walking, indoor cycling, swimming, golf, pilates) may have their entire premium and injury payments funded by the government system, as a reward for participating in exercise with excellent risk-benefit profile. Generous government contributions (but perhaps not 100%) could be awarded to sports with a 'healthy' profile but low-medium risk (for example, tennis, surfing, touch football, basketball, cricket). Contributory payments could be made to high risk sports (for example, rugby league and union, skiing, horse riding) which would still require substantial individual funding of injury episodes and/or premiums,

with a strong incentive for these sports to devote major resources towards lowering injury rates to move downward in injury incidence to a more generous level of government funding.

However, in the short-term the Australian government may not be in a position to commit substantial funds to sports injury surveillance and prevention. A model which is more likely to be embraced by our government is spelt out in Table 4. This involves implementation of sports injury surveillance and prevention in stages. Stages 1 & 2 may be acceptable to the government at comparatively low cost, with the expectation that stage 2 may be able to lead to demonstrated prevention of injuries in the medium term. Areas that are suggested as priorities for stage 2 include spinal injuries in sport, dental injuries in sport and knee ACL injuries. The New Zealand experience suggests that spinal injuries in rugby are somewhat preventable^{3,9,14} and it would not require a great deal of government funding to expand Australia's existing spinal cord registry¹⁵ to include an annual assessment of injury incidence rates in the major high-risk sports. Dental injuries have been shown to be highly preventable under the New Zealand model¹³. Knee ACL injuries are one of the strongest risk factors for knee osteoarthritis, which is one of the most prevalent chronic medical conditions in Australians¹⁶. Norway has recently successfully instituted a national ACL register⁶ based on a similar model to international registers on joint replacements. It is noteworthy that the recent report on Osteoarthritis in Australia¹⁶ highlighted both regular

Table 3 – strengths and weaknesses of the New Zealand system

| Strengths of the New Zealand system | Weaknesses of the New Zealand system |
|--|---|
| <ul style="list-style-type: none"> • Excellent data collection for all sports injury episodes • Generous compensation for those injured during activity (a government 'rebate' for the active, providing an incentive for physical activity and sport) • Strong incentive for the ACC to fund prevention programs to reduce claims • Prevention model is able to be applied, although with some limitations • Cost effectiveness of preventive programs can be tested | <ul style="list-style-type: none"> • Weak collection of exposure data (best estimate is number of active participants in each sport, but no record is made of participation time for each individual) • Very little measurement of intrinsic or extrinsic risk factors for injury in the ACC model (for example ACC does not receive data to detect if there are more injuries than expected at a certain playing venue) • As sports and players don't pay premiums themselves (or even contributions to injury episodes), there is little financial incentive for the sports themselves (as opposed to the ACC) to reduce injuries • 'Acute' injuries are funded by ACC model but not 'overuse' or gradual onset sports injuries, providing an incentive for players to falsify mechanism data in order to gain funding. |

Table 4 – possible stages of implementation of a national sports injury body

| Stage | Additional responsibilities of national body | Specifics | Relative cost |
|-------|--|--|---|
| 1. | Creation of a body with responsibility for sports injury prevention and monitoring. | National board reporting to sports and/or health ministry. | Minimal and recommended immediately ^{1,5} . |
| 2. | National monitoring and prevention programs for a specific small number of conditions for which successful prevention programs have already been demonstrated. | (1) spinal injuries in sport ³ ; (2) dental injuries in sport ¹³ ; (3) knee anterior cruciate ligament (ACL) injuries ⁶ . | Moderate, although New Zealand has already demonstrated cost effectiveness ³ . |
| 3. | Local implementation of a pilot for monitoring of all sports injuries (and then further prevention efforts arising from this monitoring). | Perhaps ACT would be a good size jurisdiction for such a pilot. | More substantial. Would be an appropriate investment if stage 2 has proven effective. |
| 4. | National implementation of monitoring of all sports injuries. | Expansion of stage 3 pilot. | High, so appropriate when stage 3 has proven cost effectiveness. |
| 5. | Full government compensation for all sports injuries (both organised sport and casual activity). | System already in place in New Zealand. | May be appropriate later when funded national physical activity targets are in place. |

exercise (to avoid obesity and muscle weakness) and avoidance of joint injury when playing sport as important ways to prevent osteoarthritis. It is clear from this example that in promoting exercise, which is critical, Australia must not neglect sports injury prevention.

If successful prevention of injuries from stage 2 (and the resultant decrease in costs to Medicare and the public hospital system) can be demonstrated, further stages may be approved for funding.

Link with physical activity promotion

A further advantage of getting better data on the activities that individuals are participating in (despite its cost) would be that this information could drive greater government action on promoting physical activity. A national sports injury system should have the triple aims of: (1) enrolling as many members of the public on to a register of regular participation of sports and exercise in some form (2) encouraging individuals to choose sports with relatively safe benefit-risk profiles in terms of disease prevention through fitness compared to injury risk (3) encouraging the sports themselves to make as many interventions as possible to improve their own benefit-risk profile in order to further recruit participants to the sport.

Although not related to the core aims of such a body (i.e. injury surveillance and prevention) because of the potential

to record realtime sports and exercise participation statistics, such a body could assist with exercise promotion objectives. For example, a potential vehicle for promoting participation in physical activity could be the Federal government's private health insurance rebate. Currently this rebate is 30% of all premiums paid for young and middle aged citizens but up to 40% of all premiums paid for older individuals. The 40% benefit for the elderly is extremely generous and perhaps a 'sop' to the grey vote, when it is remembered that the enforced principle of community rating is already a massive subsidy to the elderly. Community rating means that all members pay the same premiums regardless of risk, so the elderly (whose true risk-rated payments may be over ten times higher than some younger members) are very generously looked after even prior to the bonus 10% extra rebate. Perhaps the 10% bonus for the elderly could be phased out and replaced with a 30 vs 40% distinction based on proof of low patient risk through modifiable factors. To be eligible for the 10% further bonus on the rebate, a member may need to prove that he or she: (1) is a non-smoker (2) has maintained health body weight (e.g. BMI <30) (3) undertakes regular physical activity. Such a policy would further encourage healthy behaviour and would provide justification for physical activity statistics to be collected for individuals that could be used to judge eligibility under part (3).

Conclusion

Irrespective of the final powers and structure of a national sports injury surveillance and compensation system, establishment of a working party should be a new Federal government priority⁵. Such a working party could:

- Debate the possible systems that could be implemented in Australia.
- Assess funding models for the various options.
- Assess likely beneficial effect (or otherwise) on physical activity levels in Australia based on the various models.
- Receive submissions from interested stakeholders, such as national sporting bodies, the private health and sports insurance industries, Sports Medicine Australia and health provider organisations such as the AMA and APA.
- Make recommendations to the Ministers for Health and Sport.

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