Research and Theory

Towards a National Injury Costing System?:Lessons from a Public-Private Injury Costing Pilot Study in South Africa

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ABSTRACT

South Africa has extremely high incidence rates of fatal and non-fatal injuries due to interpersonal violence, pedestrian–motor vehicle collisions, burns, falls and other unintentional causes. While the actual cost associated with these injuries remains relatively unknown, the estimated direct cost of the medical treatment, rehabilitation and administration of these victims may run into billions of rands. This public–private injury costing pilot study (hereafter the study) was conducted at a tertiary public health facility in Johannesburg, South Africa (hereafter the public facility). The study attempted to facilitate further costing capacity through skills transfers from personnel at a sentinel private health facility in Johannesburg (hereafter the private hospital) to selected personnel within the identified public facility, and through the determination of the partial baseline direct medical cost of the treatment of gun shot wounds, pedestrian–motor vehicle collision injuries, falls and burns at the public facility. Both the capacity building component and the actual study were complicated by a number of obstacles, including limited personnel, poor costing and billing capacity, underdeveloped billing documentation and recording procedures, and limited levels of investment in the general practice of injury costing in the public health sector itself. This article examines the practical challenges facing further attempts to describe the cost of injuries in South Africa. It concludes with several critical reflections on concerns associated with an uncritical pursuit of the roll-out of a national injury costing system, which may have a negative impact on

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service delivery to the very populations that encounter injuries as a public health sector priority.

INTRODUCTION

The release of the World Health Organization's (WHO) Economic Dimensions of Interpersonal Violence report (Waters, Hyder, Rajkotia, Basu, Rehwinkel, & Butchart, 2004) represented a significant step in an increasing worldwide public health drive towards effectively and rigorously quantifying the economic impact of violence specifically, and injuries more generally. The report noted that "[t]he great majority of the existing documented studies of the economic causes and effects of violence are from high-income countries, and particularly the USA" (Waters et al., 2004, p. 43). Furthermore, the report recommended that future research should "prioritise the documentation of the considerable costs of interpersonal violence in low- and middle-income countries" (Waters et al., 2004, p. 43).

Recognising the importance of such an endeavour in the context of extremely high incidence rates of fatal and non-fatal injuries due to interpersonal violence, motor vehicle collisions (many involving pedestrians), burns, falls and other unintentional injuries in South Africa (Norman, Matzopoulos, Groenewald, & Bradshaw, 2007), a multi-agency group of public health sector researchers conceptualised the implementation of a national injury costing project. The original aims of the project were the strategic presentation of an example of how rationalisation gains in trauma care resulting from injury prevention could be calculated, and a pragmatic demonstration of how this information could be used to influence health policy and planning for the primary prevention of injuries. Furthermore, the project aimed to build capacity in the area of calculating the economic impact of injuries among South African researchers in the field of injury prevention (see Bowman, Stevens, Seedat, & Snyman, Forthcoming). The over-arching impetus for the project was therefore to utilise injury costing methods and data as tools to promote a focus on primary prevention, and to encourage such reform within the public health sector's general approach to addressing the priority area of injuries.

LITERATURE REVIEW

The first phase of the project involved a comprehensive literature review of injury costing in South Africa. This review indicated that there has been scant research aimed at establishing the economic dimensions of injury in South Africa. Despite the relative fragmentation, specification and limited generalisation of the small number of studies that characterise this literature base, the review conceded that such endeavours constitute at least a starting point for quantifying the consequences of injuries in South Africa in economic terms

(Bowman, 2002). In fact, extant costing studies in South Africa have attempted to calculate the cost of a broad spectrum of general health problems and injury forms. These included national costing studies on medicines for treatment (De Beer & Broomberg, 1990; Kane-Berman & Taylor, 1990; McIntyre & Dorrington, 1990); motor vehicle collisions (CSIR, 2000; Olukoga, 2004); and injuries resulting from crime (CSVR, 2000; NEDCOR Project, 1996). Such relatively representative studies were complemented by a provincially restricted costing study of post-mortem procedures in the province of Gauteng (Gauteng Department of Health, 1999) and a city-wide injury study focussed on establishing the cost of homicides for the Cape Town Metropole (Phillips, 1998).

In turn, a number of small-scale, limited-sample, hospital-based cost-calculation studies constituted the remainder of the South African injury costing literature. These studies included the calculation of the direct medical cost of treating children involved in motor vehicle collisions (Dickinson, Rodriques, & Bass, 1990); victims of railway-related injuries (Lerer & Matzopoulos, 1995); burn victims (Quarmby, 1999); poison-related injuries (De Wet, Van Schalkwyk, Van der Spuy, Du Plessis, Du Toit, & Burns, 1994); and firearm-related injury victims (Allard & Burch, 2005; Peden & Van der Spuy, 1998; Van der Spuy, 1996).

These studies utilised various methods for calculating the cost of injuries and may be divided into two broad categories. The first category may be loosely termed proxy methods, in which a range of financial proxies for, but not directly representative of, the actual cost of injuries were identified, collected and analysed. These included *expenditure analyses* (Broomberg, De Beer, & Price, 1990; De Beer & Broomberg, 1990; Kane-Berman & Taylor, 1990; McIntyre & Dorrington, 1990); *extracting costs from existing reports and other documentation* (Isjsellmuiden & De Beer, 1990); *estimating costs through activity budgets* (Gauteng Department of Health, 1999); and *health economic extrapolations* (Phillips, 1998). The second category encompassed a range of methods that relied on the allocation of cost to actual cases in the form of *retrospective costing using patient records* (De Wet et al., 1994; Dickinson et al., 1990; Peden & Van der Spuy, 1998; Quarmby, 1999); *prescription analyses* (Price, 1990); and *cost analyses using police dockets* (CSVR, 2000). While each of these categories has contributed to ascertaining the cost of injuries in South Africa, Bowman and Stevens (2004) have drawn attention to their limitations.

In many instances hospital spending is largely determined by budgetary allowances and thus may be skewed by a specific hospital's internal policy and fund distribution (Finkler, 1982). These internal decisions may distort or misrepresent the *actual* cost of injuries. In particular, budgets are frequently determined by retrospective expenditure patterns coupled with predicted inflationary trends, rather than based on accurate patient treatment

costing data. Even if total expenditure were broken down into specific treatment types, the figures could be distorted by a particular hospital's location, governmental allowance, cost sharing across several patients within the same facilities, and internal policy (Bowman, 2002). Therefore, the usefulness of a budget figure as an estimate of potential expense is limited because it does not describe the more detailed treatment-specific cost required to accurately calculate the case cost of treatment of particular types of injury. Thus, public health sector expenditure and budget measures may make for adequate broad preliminary cost indicators, but cannot be considered viable, comprehensive data for calculating the specific cost of injuries.

Although the retrospective allocation of cost to injury cases detailed in police dockets or patient records appears to be a more rigorous means of establishing at least the direct cost of injuries, the poor recording quality and information contained in these documents makes it extremely difficult to ascertain such costs (Hennop, Potgieter, & Jefferson, 2001; Prinsloo, 2004). Given the high rates of violence and injuries in South Africa, it would be fair to anticipate large numbers of victims being treated in the country's tertiary hospitals, thus affording a sizeable number of records for costing (Matzopoulos, Prinsloo, Butchart, Peden, & Lombard, 2006). Yet, the literature revealed that injury costing studies have been compelled to make use of very limited sample sizes (Bowman & Stevens, 2004).

Two factors may account for this. Firstly, using patient records or police dockets as sources of costing information is complicated by challenges to the accurate recording of information necessary to conduct cost-calculations, as well as by inefficient filing processes of patient records in many public health sector facilities and police stations (Matzopoulos et al., 2006; Prinsloo, 2004). Secondly, sourcing and then allocating stock prices and personnel costs associated with the full spectrum of health procedures typical of the treatment of severe injuries is inordinately labour intensive and expensive. This expense is accommodated for within private health sector user-cost, and is accomplished technically through automated billing software and scanners that keep an ongoing record of each item of stock used in the treatment of an injured patient. Personnel time is also recorded by these systems and both stock and time are automatically cross-tabulated against real costs in the generation of a bill at the time of the patient's discharge or death (Bowman, 2002). Such technology is not routinely available in public health sector facilities. In addition, patient bills cannot be considered entirely reliable indicators of the overall cost of treatment (Finkler, 1982). Nevertheless, this approach appears to be the most feasible mechanism for generating the cost of injuries in South Africa, although these methods are generally restricted to the private health sector (Bowman, 2002).

In short, attempts at establishing the public health sector cost of injuries using proxy measures have had to sacrifice accuracy for broad-based representativeness, while studies that made use of the retrospective allocation of real costs to records have conceded representativeness and generalisation in favour of costing accuracy. In addition to the internal inaccuracies and limitations of the figures generated by the costing studies in the literature, the lack of any standardised method for costing injuries lessens the possibility of obtaining an accurate cost of injuries comparability.

RATIONALE FOR THE PILOT STUDY

An examination of the literature together with preliminary discussions with personnel in the public health sector, revealed two interrelated challenges to the accurate and timely costing of injuries in South Africa. The first challenge was one of capacity. Injury costing requires an additional skills set within the public health sector, is expensive and labour intensive, and as such has not been prioritised in the resource-depleted and demanding context of the public health sector. The second related challenge referred to levels of receptivity to the day-to-day implementation of costing methods within the public health sector. This was of course anticipated, given the perception among many health personnel that they would in part be directly responsible for this implementation, and therefore reluctant to engage in it as an additional performance area in an already challenging work environment. Within the context of the South African public health sector, heavy caseloads, limited resources and poor remuneration are some of the fundamental conditions under which health personnel work, and so limited receptivity to the idea of costing as an additional duty for administrators, doctors and nurses could be considered a fairly reasonable response (Frank, 2006; Marais, Van der Spuy, & Röntsch, 2002; Matzopoulos et al., 2006).

Based on these challenges, the researchers noted the importance of developing a systematic and standardised method for ascertaining the direct cost2 of injuries prior to making any attempt to describe the more difficult indirect and human value costs resulting from violence and injury. Such expertise was already located in the private health sector, where cost and billing information has been prioritised under state-of the-art billing systems for well over two decades. In contrast to the public health sector, the imperative for costing in the private health sector, where profit margins are integral to financial sustainability, is embedded in its everyday practices. This indicated the potential for a public-private sector partnership (Bateman, 2008; Moorman, 2002). Given the costing expertise in the private health sector, a customised transfer of skills, technical infrastructure (such as billing sheets), and expertise from private health sector facilities to their public health sector counterparts was embarked upon.

2 Direct and indirect costs represent the two most used categories of injury costing. Direct costs may include the cost of legal services, incarceration costs for perpetrators of violence, and direct medical costs (i.e. all pre-hospital, hospital and outpatient costs). Indirect costs may include productivity losses, lost earnings and psychological costs (Waters et al., 2005).

Illustrating the prevention utility of costing practices and data in the long-term, in part called for increasing personnel receptivity to costing in the public health sector. While recognising that this perhaps also implied motivating for an additional cadre of personnel in this sector, such as costing administrators, the research team approached this problem pragmatically. Given that such a cadre of personnel was unlikely to materialise without sound evidence for the utility of costing practices, it was decided that existing staff members would be approached to participate in the study. These staff members were paid for any additional work done during the course of the study, as it was hoped that this would offset any reluctance to engage in additional work-related tasks that were not core to their job descriptions.

In light of the above, an exploratory injury costing pilot study was therefore conceptualised to explore the potential for direct skills transfers from the private health sector to the public health sector in South Africa. This article reports on this process, the resultant outcomes, and potential consequences.

AIMS OF THE PILOT STUDY

The aims of the injury costing pilot study were:

To facilitate the costing capacitation of health care workers in the public health sector through a costing expertise skills transfer process from health care workers in the private health sector.

To generate an estimation of the direct medical cost of patients presenting with gun shot wounds, pedestrian–motor vehicle collision injuries, falls and burns, at a tertiary public health facility in Johannesburg, South Africa.

To reflect on the lessons learnt from the capacity-building processes, as well as the costing data collection and analysis processes, in considering the potential roll-out of a national injury costing system.

METHOD

RESEARCH TEAM CAPACITATION WORKSHOP

A methodology workshop aimed at capacitating the research team (i.e. national and international injury prevention practitioners, trauma specialists, injury costing specialists, and pathologists) at the conceptual and operational levels was facilitated by a nursing operations manager (who was a private health care costing specialist) from the identified private hospital. Together, these stakeholders developed the foundations of an injury costing protocol to inform an overall method for possible installation at public health

facilities. Participants agreed that the system would be tested at the public facility for possible refinement. The system was initially to be used as a skills transfer mechanism that would then evolve into a formal injury costing system. The impact of such a skills transfer workshop would ultimately be measured by the quality of the data yielded by the implementation of the injury costing study to be piloted at the public facility. Any difficulties in the installation and subsequent data collection and analysis phases of the study would therefore reveal the broader challenges to both creating a culture and practice of costing in the public health sector in South Africa, and installing a national injury costing system. Further consultation with costing experts, who included a finance operations manager, a chief administrator and a stores clerk from the private hospital, was organised to develop both the capacitation material for the participating staff members and to refine the protocol for the costing system to be piloted at the public facility. At this initial workshop, a set of broad inclusion-exclusion criteria for patient participation in the study was set by trauma experts from both sites. The costing was thus delineated as *prospective*, with presenting patients being charged according to charge sheets and procedures developed in the private health sector, but modified for the public health sector. This modification was necessary due to differences across the private and public health sectors, which included the practice of varied medical procedures, the availability and use of different pharmaceutical products, (e.g. branded products versus generics), etc.

SKILLS TRANSFER WORKSHOPS

Two 3-day workshops were held at the public facility in order to sensitise health personnel to the imperatives of costing and the technical requirements for data collection in the study. These workshops were facilitated by the co-ordinator of the research unit at the public facility and a costing expert from the private hospital, with particular skills in the development and implementation of health care cost-calculation models. The objectives of the workshops were to: (a) illustrate the importance of injury costing in the public health sector; (b) transfer existing private health sector costing expertise to the public health sector; and (c) stimulate research expertise pertaining to the economic impact of violence and injury on South African society. A limited number of public health sector administrators, researchers, medical doctors and nursing staff participated in the workshops and were thus exposed to the basic skills required to conceptualise, implement, sustain and evaluate an injury costing system within public hospital settings. Extensive efforts were made to "market" the concept of billing, as this component of health care management is currently not adequately represented in South Africa's public health system.3 The public facility was no exception in this regard. Nursing staff proved to be most receptive to participating in the data collection component of the study, and were also considered to be appropriate

3 It is important to note that the South African Patient Administration and Billing System is operational in public sector health facilities in different provinces, but limited information on its efficacy in relation to accurate injury cost-calculation could be ascertained from the literature.

participants, given their ongoing contact with patients during their stay in hospital. This meant that they were more likely to be attuned to any costs incurred through the use of consumables during the treatment period. They were also given the incentive to follow the protocol strictly, through payment from the study's research budget.

RESEARCH PROCEDURE AND SYNOPSIS OF PILOT STUDY RESULTS

The study was implemented in January 2004 after ethical and administrative permission was obtained from the directorship of the public facility. As a training health facility that is attached to a Higher Education Institution, the ethical guidelines for research on human subjects were aligned with those of the Higher Education Institution, and the public facility therefore managed the ethical clearance for all requests that were received to conduct research within this milieu.

A total of 55 patients were enrolled in the study (see Table 1 below), comprising 1 burn injury, 12 fall injuries, 21 gun shot wounds, 14 pedestrian–motor vehicle collision injuries, and 7 unknown injury types.

Table 1: Injury type by number of cases (***n*** = 55)

Injury Type	Number of Cases	Percentage of Cases
Burn	1	1.8
Fall	12	21.8
Gun shot wound	21	38.2
Pedestrian–motor vehicle collision	14	25.5
Unknown	7	12.7

The protocol was limited to identifying the most basic of direct medical costs associated with the treatment of injury patients. This partial approach was adopted based on capacity constraints within the study, but was also undertaken to determine the potential for future costing initiatives based on the successes and or challenges associated with such a basic costing protocol. As such it focussed only on consumables utilised in the hospital setting. Initially, the intent was to track each patient at every point of care anticipated by the trauma entry and management process. This included the emergency room, theatre, intensive care, and trauma ward components, but later only included the intensive care and trauma ward components because of capacity constraints. Pre-hospital care costs as well as out-patient treatment costs were therefore also omitted from the study, as were personnel and bed costs. Once a patient had been identified for inclusion in the study,4 all consumables

4 All patients, 18 years of age or over, presenting with gun shot wounds, as victims of pedestrian-motor vehicle collisions, with fall injuries, and patients under 16 years of age presenting with burns, admitted to the public facility for the period January to May 2004, were eligible for inclusion in the study.

per patient were discarded into large plastic bags, and then costed manually by an appointed costing expert according to the adapted costing protocol of the private hospital. The costing occurred in the presence of a health care worker employed by the public facility, thus providing for that worker's costing capacitation. Each patient's file therefore contained a cost figure for the public facility treatment of the selected injury type. While a more comprehensive detailing of these results is available elsewhere (Bowman, Stevens, Seedat, & Snyman, Forthcoming), a synopsis is provided below.

The direct medical treatment cost of the 55 patients presenting at the public facility for a 5-month period beginning in January 2004 was R233 292.76. However, as noted above, this figure only reflects consumables utilised, and excludes bed costs, personnel hours and other related costs (e.g. transportation, pre-hospital care costs and out-patient treatment costs).

Seven of the 55 cases of injury were costed where the specific injury-type could not be established. These 7 unknown injury types were excluded from the final injury cost-calculations, resulting in the total direct medical cost of consumables for the 48 patients included, being R222 070.37.

When calculating averages, the single burn case was also excluded from the average direct cost-calculation of consumables utilised, as it could not generate an aggregate cost for the treatment of burns. The average direct medical cost of consumables utilised in treating the remaining 47 cases per injury type in both the intensive care and trauma wards, was R6 395.65 per gun shot wound, R3 885.97 per pedestrian–motor vehicle collision injury, and R2 747.83 per fall.

What became apparent from the above results was the restricted sample size and limited quality of the overall data set. Certainly the lack of costing skills and infrastructure, and the underdeveloped organisational culture pertaining to costing practices, both posed obstacles to the effective implementation of the study. While these obstacles severely limited the quality of information produced by the study, careful scrutiny of their forms and causes serves to illustrate the broader constraints of developing an injury costing system in South Africa. The following section addresses these shortcomings systematically.

DISCUSSION: REFLECTIONS AND LESSONS

The limited culture and practice of billing and costing in the public health sector was the biggest obstacle to the smooth implementation of the study. This obstacle was marked by considerable resistance to intra-organisational change and required a huge effort to

overcome. The capacity building component involving exposure to, and advocating for, costing thus met with limited success. While this obstacle was anticipated, it had far-reaching effects on personnel receptivity.

COSTING AS A NECESSARY PART OF ORGANISATIONAL CLIMATE

The underdeveloped culture and practice of itemised billing for individual patients was the greatest threat to the study. Capacitation in the required techniques for effective injury costing did not translate into personnel receptivity of the concept and process. In an already under-resourced and overburdened South African public health sector, additional data collection protocols were perceived as unnecessary and time consuming. The very utility of gleaning information about costs of injuries needs to be more forcefully embedded in the everyday practices of the public health sector. A macro-system advocacy approach to injury costing is thus required to encourage personnel receptivity to measuring injury costs on the ground. The micro-transfer of costing skills is insufficient to give personnel the incentive to accommodate the requisite costing techniques and systems into their everyday job descriptions. An additional level of administrator, whose primary job description is that of costing, may also need to be advocated for. Such a macro-oriented education, marketing and advocacy campaign will require genuine skills transfers and information dissemination initiatives. These should include public-private, goal-oriented partnerships aimed at the national roll-out of a public health injury costing system, and cross-sectoral collaborations that stress the successes of economically quantifying health burdens. Such successes have been illustrated in the South African HIV/Aids prevention sector where the calculation of baseline societal costs and subsequent illustrations of prevention and treatment benefits have been employed strategically to leverage support, to advocate, and to lobby for better quality and access to health-related information, prophylaxis and anti-retrovirals (Bowman & Stevens, 2004).

Illustrating the utility of costing cannot be accomplished effectively by the social and health sciences alone. It requires the active interdisciplinary involvement of health economists, lobbyists, researchers and safety promotion practitioners, as well as the political will to provide financial and institutional capacity to support injury costing as a national health mandate. In many cases, this will require the development of comprehensive health information systems through which treatment costs can be established. This may be far from a health imperative for South Africa, but the short-term expense involved in such research and development could bolster the scientific rationale for prevention, which has also been shown to translate into long-term savings in health expenditure. Significant advocacy and education in the field of injury cost-calculation is therefore required to increase personnel receptivity to a national injury costing system, perhaps in the form of a national *injury costing campaign*.

COMPLEX INJURY PATTERN PRESENTATIONS

Dual or multiple injuries created difficulties for the pilot system and will need to be accommodated in a future national injury costing system. Dual or multiple injuries quite obviously escalate the cost of treatment. The pilot system was not, however, equipped to determine the discreet cost of treatment for those patients who incurred dual injuries (e.g. from both a gun shot wound and a fall). In these cases, the primary temporal mechanism was selected for immediate cost-calculation according to the protocol of the pilot system. A number of patients were admitted for gun shot wounds and falls, as well as other combinations of injuries. In these cases, a complete injury costing profile was difficult to calculate. In addition, the urgency of the needs of unstable patients at times complicated the collection and, consequently, the cost-calculation of consumables. This was also compounded by the fact that a comprehensive trauma injury severity score was not utilised as part of the study inclusion-exclusion criteria.

PATIENT ATTRITION AND DECANTING

Internationally, trauma patients are frequently lost to follow-up (LTFU) (*Gabbe, Cameron, Hannaford, Sutherland, & McNeil, 2006;* Gabbe, Cameron, Williamson, Edwards, Graves, & Richardson, 2007). As is the case with many African tertiary hospitals, the public facility's policy prescribes that due to a shortage of tertiary beds, patients must be actively decanted to the most appropriate levels of care, often outside of the institution. This resulted in many of the post-stabilisation cost of injuries incurred by patients eluding the pilot study's cost-calculation protocol. Future studies should, therefore, include decanting destinations in order to more accurately establish the comprehensive cost of trauma-related injuries. Rehabilitation and other follow-up patient procedures also constitute a significant proportion of the cost associated with the care of the injured. Again, injured patients do not necessarily return to the tertiary hospital for these procedures. Due to the geographical limitation of the study, the cost of these procedures could not be included in the final cost-calculation for each patient.

This limitation was most pronounced in attempting to enrol burn patients in the study. The public facility did not have a stand-alone burns unit and it was therefore difficult to enter sufficient numbers of burn patients into the system. Additionally, current South African public health sector hospital protocols demand pre-hospital triage. In most cases, low-priority burn patients were triaged to other centres and disciplines. This made it difficult to capture the actual number of burn patients that were admitted to neighbouring facilities.

COST ITEM OVERSIGHTS

The costing of several items was not adequately accommodated for within the system. The most obvious example was oxygen, which is a standard consumable that is utilised in most

trauma treatment. In addition, several items were not consistently costed at the same rate – the most notable of these being various types of intravenous fluids. Future costing protocols will of necessity have to capture these items more rigorously and accurately.

FURTHER CRITICAL ISSUES FOR A NATIONAL INJURY COSTING SYSTEM

While this article has illustrated some of the demerits of this particular injury costing pilot study, it has also yielded valuable lessons to consider in the conceptualisation and implementation of a national injury costing system. These point to the importance of public-private partnerships in facilitating skills capacitation, in clarifying methodological issues, in managing infrastructural and technological challenges, and in considering policy imperatives and resource allocation practices. However, while cost-calculation practices can certainly act as a strategic leveraging mechanism to strengthen advocacy and lobby arguments for greater prevention praxis, there is nevertheless a need to be cautious of uncritically transposing such practices onto the South African public health sector in the context of global health reform. This section addresses broader social concerns around the implementation of a national injury costing system.

One of the central features of current global health reform involves a global impetus in the development of mechanisms for translating injury burdens into compact economics in pursuit of the new universalism – a policy that embraces cost-effectiveness as a critical measure of the effective delivery of high quality health services to everybody, rather than the provision of the most basic care to the poor (WHO, 2000). However, despite containing an internally coherent logic as a conceptual framework that has the potential to aid global, national and regional health decision-making and planning (Bowman & Stevens, 2004), health costing is by no means ideologically neutral, and thus may imply unforeseen deleterious effects on the very populations that have been identified as already socially marginalised and at risk of injuries. For example, Werner and Sanders (1997) have argued that health costing approaches came to prominence through particular policy strategies of the World Bank as it intervened in third world health policy. These strategies targeted the improvement of (i.e. reduction in) government health expenditure through facilitating the private sector's involvement in health, as a component of structural adjustment programmes geared towards stricter fiscal discipline associated with heavily indebted third world economies. In so doing, associated cost-benefit, cost-effectiveness and cost-recovery calculations were encouraged as new fiscal technologies to be utilised (Sanders & Meeus, 2002) in order to assist in making developing economies more attractive to foreign investment. In many cases, an uptake in these technologies has resulted in greater user-charges in the private health sector and has also undermined comprehensive public health service delivery in favour of cheaper selective primary health care that cannot always respond to the acute and chronic health needs of disadvantaged populations (Bateman, 2008; Shisana, Rehle,

Louw, Zungu-Dirwayi, Dana, & Rispel, 2006). Encouraging the privatisation of health care for greater fiscal discipline has exacerbated this problem. In short, health costing as a basic form of health commodification may further disadvantage the very populations that are most in need of cheap access to comprehensive health care (Bowman & Stevens, 2004).

This potential threat to the overarching prevention aims of the injury prevention sector must be addressed critically if the case for the implementation of a national injury costing system is to be made convincingly. Of course, greater health equity is potentially possible through the use of cost-calculation models and practices, as the recent achievements of the Treatment Action Campaign (TAC) have shown in South Africa. This campaign utilised cost-benefit technologies to champion access to anti-retroviral treatments for a cohort of HIV/Aids sufferers who would otherwise have lacked the financial resources to access them (Bell, Devarajan, & Gersbach, 2003). Establishing the baseline cost of injuries is in itself a political technology, and the data generated from it must therefore be viewed as politically precarious. Once this has been consciously acknowledged, the development of a national injury costing system need not simply act in the service of unbridled health commodification, but has the potential to be strategically appropriated and deployed as an integral component of a greater prevention drive to ensure better health for all.

CONCLUSION

Despite the relatively low data yield of this pilot study, it has illustrative value in so far as it highlights the challenges facing the implementation of a national injury costing system in the public health sector in South Africa. From a pragmatic stance, the most pressing challenge for such a system is the development of personnel receptivity to injury costing practices that can be accompanied by appropriate human resource and institutional capacitation, and appropriate policy decisions in the direction of supportive resource allocation. Thereafter, the scientific and system-specific challenges of implementing a national injury costing system can be addressed. However, in advocating for such a system, there must also be critical engagement with the politics of health care costing in order to prevent costing systems that may impact negatively on the very populations intended as their beneficiaries being appropriated into health reform policies.

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