

Benchmarking working time in health care: the case of Excelcare

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Abstract

In the 2000-2004 Enterprise Bargaining round between the Australian Nursing Union and the South Australian state government, it was agreed that public hospitals would be staffed according to Excelcare timings or benchmarks. Excelcare is a computerised workload produce that measures the number of hours and minutes needed to perform a range of nursing tasks for patients on a given ward. This brought into sharp relief disagreements between the various parties over Excelcare timings, but more importantly, it illustrates the unions' strategic use of the Enterprise Bargaining process to de-intensify nursing labour.

Efficiency strategies and Enterprise Bargaining

Various strategies have been adopted to improve efficiency, flexibility and productivity in the Australian public acute hospital sector. One strategy employed by the state (and encouraged by the trade union movement until the 1996 Workplace Relations Act) has been Enterprise Bargaining (EB). This has involved linking salary increases for nurses, hospital-employed doctors and ancillary staff to agreements for structural reform and workplace flexibility.

Knowingly or otherwise, workers commit to increased productivity through EB, although it does not appear to be the major vehicle for achieving efficiencies. More direct determinants for achieving increased productivity and efficiency are embedded in the Medicare agreements and include the benchmarks and targets linked to the various casemix formulas, and consolidated at the local hospital level through prospective budgets and funding for innovative re-structuring. At the level of the local hospital these benchmarks are lived out in day-to-day work regimes.

Benchmarks are achieved through intensifying the labour, working longer hours, or re-organisation of the labour processes through innovations based on scientific management or evidence-based medicine. This paper explores the various ways in which nursing costs are benchmarked giving particular attention to the nursing workload product, Excelcare.

The paper is divided into four sections. The first is a brief over-view of benchmarking and its application to the health care sector, specifically to costing nursing services. The second section outlines the computerised workload product, Excelcare, and indicates the way it is used by nurses and management at the hospital level. The third section describes the gains made by the Australian Nursing Union (ANU) in the latest EB round to re-determine staffing levels. The final section comments on the place of EB in the benchmarking process.

Benchmarking health care

The concept of benchmarking in Australia is not new although it has received considerable attention over the last fifteen years as part of the micro-economic reform process. Benchmarking can be seen as a sub-set of best practice, a quality assurance measure that initially dealt with the private sector, but in 1990 the Industries Commission included the public sector in its brief. This sector was seen to be particularly inefficient and best practice became a tool for reform along with benchmarking. The introduction of best practice and benchmarking was bolstered in 1993 with the Federal Labor Government's Australian Best Practice Demonstration Program established with generous funding and located in the Department of Industrial Relations (Morris 1996).

Despite cuts in funding under the coalition the benchmarking and best practice programs remain in both the private and public sector (Pocock and Wright 1997), particularly the practice of benchmarking. The key principles of benchmarking outlined by Morris (1996:18) are "... *identification of model performers and their imitation. The art of benchmarking usually involved more assiduous networking with suppliers and customers. Key objectives in this self-help paradigm were cost reduction and quality control as firms benchmarked performance against international best practice, undertaking remedial productivity enhancement if a performance gap was identified. In addition, flatter managerial hierarchies were called for by benchmarking pundits, along with greater productivity as a central goal ... in theory a cycle of perpetual effort ... in the search for the Holy Grail ... against the forces of inertia*". In the health care sector the two best examples are the GP Demonstration Programs in the mid-1990s and the National Hospital Demonstration Program (NDHP) that commenced in 1996 and is on-going. Both these programs illustrate the principles of benchmarking and best practice. The ideas for the type of reform or innovation come from professionals in the field, but the benchmarks are pre-set by the Commonwealth or state bureaucrats.

We can see best practice and benchmarking as a set of cultural practices introduced into the workplace that run alongside the structural reforms built into Medicare and particularly the introduction of casemix funding. For example specific benchmarks and targets for each state are established with each agreement, such as waiting times for elective surgery or reduction in waiting times in Accident and Emergency departments. In the 1998-2003 Health Care Agreement, under Clause 20 and 21 in Schedule C, the states are committed to continuous benchmarking and the collection and sharing of data to achieve this aim, and Clause 67 commits the states to a continuous process of efficiency. Clause C requires the Commonwealth, states and territories to develop indicators to measure waiting times along with a range of other issues (Commonwealth Department of Health and Aged Care 2001). These benchmarks and targets force hospitals to experiment with new ways of organising the work in order to achieve the targets that are invariably tied to funding.

Benchmarks and report cards

In 1994 the Australian Health Ministers' Conference (AHMC), an annual meeting of the various state and territory Ministers of Health, agreed to the development of a national set of performance indicators and benchmarks for the health care sector. Their initial focus was on the 755 public hospitals that treat 3.8 million patients annually and consume 25% of the health care budget (Senate Inquiry 2000). The working party charged with establishing and defining appropriate benchmarks worked closely with the National Hospital Outcomes Program, a group established as part of the 1993-98 Medicare Agreement; and with a range of other national committees or funded projects, including the National Hospital Demonstration Program (NDHP).

The Australian Institute of Health and Welfare, using existing data sets submitted by the various states and territories, produced the first report (National Health Ministers' Benchmarking Working Group, NHMBWG 1996). Subsequently five other reports were produced as well as Annual Report Cards on each state's performance in meeting the Medicare Agreement benchmarks (The Australian Health Care Agreements Annual Performance Report 1998-99; Commonwealth Department of Health and Aged Care 2001; NHMBWG 1996; NHMBWG 1999; NHMBWG 2000). Responsibility for the benchmarking reports is now with the Queensland Department of Health, although in the earlier reports the Australian Institute of Health and Welfare collected much of the data as did the NSW Department of Health.

Part of the Institute's brief has been to negotiate with the various state health authorities to establish uniformity in data collection in order to establish national benchmarks. This is an on-going process and has resulted in a commitment to standardise data across the country, to the collection of a minimum data set, and to the development of the National Health Dictionary. The process has been consolidated under the 1998-2003 Australian Health Care Agreements (formerly Medicare agreements). Under Schedule C, each state is committed to the collection and standardisation of a variety of performance indicators which are published each year and indicate where a state stands in terms of what it agreed to, and what it achieved (Commonwealth Department of Health and Aged Care 2001).

In the 1996 report the Institute published sixteen indicators of hospital quality performance for acute public hospitals in Australia using the framework of *efficiency*, *productivity*, *access* and *quality*. Efficiency was defined as the relationship between the cost of various inputs and the output produced (NHMBWG 1996: 21). The measures used by the working group are, the cost per casemix-adjusted separation, the cost of treatment of outpatients and the average length of stay (ALOS) for the top twenty Australian National-Diagnosis Related Groups (AN-DRGs) (NHMBWG 1996, p18). In the Australian Health Care Agreements Annual Report Card 1998-9 (Commonwealth Department of Health and Aged Care 2001) this last indicator has been reduced to the top 10 DRGs. The first benchmark, cost per weighted casemix separation, is perhaps the most complex and requires the costing of professional services as well as equipment. One of the indicators is the cost of nursing services through the determination of nursing service weights. How cost weights are determined varies, but the model used to cost nursing services is a fascinating study in constructing a value-neutral idea of work-time, cost and staff numbers. The 1996, 1999, and 2000 benchmarking studies estimate that nursing care equates to around 28% of the average DRG cost (NHMBWG 1996, 1999, 2000). This benchmark was partly derived at through studies using Excelcare (Diers 1999; Horsell 1996).

Time and nursing service weight

Australian nurses worked closely with the Commonwealth in the mid-1990s to convert the time it takes to do a nursing task into a timed nursing weight for a specific DRG (Diers 1999). Major work was done in the mid-1990s by Hovenga and Picone with the PAIS (Patient Assessment Information system) nursing intensity model in NSW, and in South Australia by Horsell using Picone and Diers' framework with Excelcare (Diers 1999, Horsell 1996). The Commonwealth government funded the first nursing service weight study under the direction of Picone for AN-DRG version 1 using NSW and SA data (Diers 1999). The processes used by Picone in NSW and Horsell in South Australia were similar (Parkes, Picone and Challenger 1994, Horsell 1996).

In both instances they brought together expert nurses to determine the resource intensity of each DRG. This required them to divide all DRGs into five bands based on nursing intensity or the time needed to care for a patient in a particular DRG. The NSW study was a replica of the nursing intensity study done in the USA by Thompson and Diers in 1987 and involved eight metropolitan hospitals in Sydney. The PAIS classifies patients into bands or categories according to the relative use of nursing resources by assessing them on each day of their stay and assigning a time value to the amount of nursing care required (Ferguson and Picone 1994). In the South Australian study each DRG was allocated a nursing service weight calculated by aggregating Excelcare data routinely gathered from nine of the sixteen public hospitals over a six-month period from September 1995 to April 1996 (during the spring and summer months). While this was seen to have an inherent weakness in not capturing high volume psychiatric and respiratory case data, which peak in winter, the study did incorporate the seven major public and two regional hospitals.

Excelcare data (actual time it takes to do a task for a patient) allows the collection of each minute of care of each patient across the three shifts. This can be rolled up into the total time the patient is on the ward and compared with the number of nurses rostered on a shift (required time), the number of nurses employed but on days off, holidays or study days (indirect times) and the actual length of stay (LOS) of the patient. The cost of the actual nursing hours can then be compared to the total LOS. In the Horsell (1996) study some health units or services were not included such as Hospital in the Home and Intensive Care Units (ICU) because of their low but extended, or high intensity use. In other cases high intensity measures were universally applied whether or not a hospital employed this method of nursing.

For example for DRG 287-291, coronary by-pass graft (CABG) surgery, the highest resource utilisation was assumed for all hospitals – that is, ICU or one to one nursing for the first 24 hours. Differences in practices, or nursing models of care were not factored into the weights since they are not factored into Excelcare timings. Data for the nine hospitals was then checked against Health Commission data and rolled up into separate DRGs (Horsell 1996).

Those DRG episodes of care where the LOS was 3 standard deviations outside the ALOS were trimmed. From the remaining episodes of care, nursing beta values were devised. In devising a beta value 'actual nursing minutes' were used and were defined as *the increment of nursing time of one more day of stay* (Horsell 1996: 15). Each DRG was then assigned a service weight by summing all the beta values. This enabled the determination of service weights for each DRG and an aggregated weight for nursing services to be benchmarked at around 28% of the average DRG cost. In the early years of the introduction of casemix funding these nursing weights were continuously refined as the Commonwealth Casemix Development Program brought together data from various other studies. This was seen as necessary given that there is little standardisation of nursing resource costs across the nation. Other funded studies included the NAIP (non-acute inpatient Casemix project) in Perth, Adelaide and Melbourne, an intensive care study in Adelaide, a domiciliary casemix study in the Central Coast Area of NSW and three separate studies of costs for outpatients and emergency departments (Ferguson and Picone 1994). All these studies allocated intensity measures to each DRG and apportioned a timing in order to calculate a national cost weight for nursing. At first sight this seems a reasonable attempt at deriving an equitable, if complex benchmark. However, when the product is examined at the local level, its capacity to facilitate equitable but lean production is evident.

Benchmarking nurse staffing levels at the local level using Excelcare

Excelcare is one of many workload measuring systems available to hospitals (Urbanowicz 1999). There are variations in these systems – some focus on dependency levels, and others involve the timing of units of care or measure patient acuity. However, the basic approach is one where the workload and staffing is calculated by multiplying the range of nursing tasks by the number of minutes required, and by the number of patients. Weights are apportioned to each task/indicator and the average time for completing these tasks is built into the computing system. The underlying assumption is that shift-by-shift reporting of the timings allows management to reorganise staffing to cope with changes in the intensity of the work, and to develop refined benchmarks for staffing. Excelcare was introduced into the fifteen major public hospitals in South Australia in 1992 following a trial of the timings and an agreement from the Australian Nursing Federation to do so.

The ANF always assumed that hospitals would staff according to Excelcare timings. A rostering system, ProAct, was also introduced at the same time allowing for accurate staffing on a shift-by-shift basis. Over the last seven years there has been a steady increase in complaints by nurses on the wards of under-staffing according to Excelcare calculations. When nursing staff complain about the inadequate numbers of staff rostered on any one shift, demonstrating that the ward is understaffed according to the Excelcare calculations, managers respond by saying that the benchmarked Excelcare time allocation is too generous. The difference between ward staff benchmarks, which are the Excelcare benchmarks, and management benchmarks can be gauged from the data in Table 1 which are taken from one ward in a large tertiary hospital in 1998. The column headed Difference indicates the staff shortage for each of the three shifts based on Excelcare. The staff shortfall over the three shifts in any twenty-four hours can be gauged by examining June 6th. The total difference is $4.7+2.2+2.7=9.6$ effective fulltime staff.

Table 1: Excelcare Project figures, 4 to 7 June 1998

Date	Shift	EN	RN	Total projected time	Projected staff needs	Actual staff rostered	Difference
4	1	34.06	40.38	74.44	9.3	8	1.3
Thu	2	22.45	40.59	63.44	7.9	6	1.9
	3	17.11	30.36	47.47	5.9	N/a	?
5	1	37.22	41.11	78.33	9.79	5	4.79
Frid	2	N/a	N/a	N/a	N/a	N/a	N/a
	3	18.10	31.21	49.31	6.16	3	3.16
6	1	35.04	43.25	78.30	9.7	5	4.7
Sat	2	23.15	42.23	65.38	8.2	6	2.2
	3	16.37	29.30	46.07	5.7	3	2.7
7	1	31.31	41.48	73.18	9.1	7	2.1
Sun	2	20.59	42.33	63.32	7.9	6	2.9

Enterprise bargaining and Excelcare

These discrepancies ensured that Excelcare became the subject of the most recent EB round with the ANF gaining a commitment from the Department of Human Services (DHS) to staff according to strict Excelcare timings. Under the 2000-2004 agreement the DHS guaranteed 200 extra nursing positions immediately for public hospitals, but more importantly agreed to staff according to Excelcare timings, or any tool that would replace it. Section 8.6 (iii) (a) of the EB agreement states that “... *Hospitals to staff in accordance with Excelcare ... and (ii) Following implementation of the new system in August 2002, health units are to staff according to the staffing plans generated under the new system*” (Industrial Relations Commission 2000).

The agreement was implemented immediately. The new product is due to be introduced in 2002, but all hospitals were committed to staffing according to Excelcare timings immediately the agreement was signed in 2000. Claims in 2001 that there were insufficient funds to do so, and ironically not enough nurses, are a breach of the agreement and the subsequent disputes and closure of beds illustrative the power of the EB process to determine benchmarks at the local level. Telling nurses that Excelcare is too generous is now no longer an option.

Using computerised benchmarks to determine EB workload agreements

The determination of a nursing service weight by the Commonwealth as equivalent to 28% of the average DRG cost was not done in an arbitrary fashion. It represents an attempt to use the processes and technology available for creating equity in resource allocation. This is always a difficult task where issues of length of stay or hours of care are involved. Computers and mathematical formulas are presumed to give credibility to the derived numbers and to establish them as a value-neutral allocation of the target to be achieved. However, the Excelcare timings used by the Commonwealth were derived partly from hospitals in South Australia where there have been disputes over these timings since 1995 when casemix funding was introduced and the collapse of the State Bank resulted in real budget cuts and fewer nurses. Nurses on the wards made claims of under-staffing based on their knowledge of the tool and the increased acuity of the patient load now further exacerbated by shortened length of stay. Nurse managers responded with claims that the tool was too generous in its timings and allocated fewer staff. It was these timings and staff allocations that formed the basis for the Commonwealth study.

One could presume that this situation would prevail unless nurses were able to re-negotiate their workload and the benchmark. The opportunity to do so came through the process of EB. Critical literature on the impact of Enterprise Bargaining agreements initially suggested that workers were worse off simply because agreements shifted the ground for salary increases. No longer granted to workers as part of their share in 'capitalist' profits, each salary increase or improved benefit has to be directly linked to increased effort (Morris 1996).

There was little in the early literature to suggest that EB agreements might reverse the trend to lower levels of productivity and efficiency, although within the framework of benchmarking and best practice the issue of quality always made this theoretically possible (Morris 1996). What was also evident in the early rounds was that the focus was on salary increases, not working conditions. This was despite the fact that the allowable matters made it possible to negotiate issues of working time.

In the South Australian case the acute shortage of nurses, along with nurses' deep knowledge of the benchmarking product, has enabled them to re-negotiate the benchmark and to de-intensify their labour. In negotiations between hospital managers, the DHS and the ANF, it has become clear that this new benchmark requires an increase in the budget. It is reasonable to assume that in signing the agreement the DHS was committed to these increases and to the realisation that nursing services are either more than 28% of the DRG costs, or that the DRG cost needs to increase. Subsequent disputes and the closing of beds in some hospitals suggest otherwise. Despite this the benchmark has now been re-determined according to Excelcare timings or the tool that replaces it. Enterprise Bargaining has been the vehicle for determining the new benchmark, rather than the Commonwealth or hospital management.

The process for determining the cost of nursing services with the new product may well involve engaging in the mathematics of working time, but in doing so state health authorities will be held accountable for adhering to these formulas. Determining benchmarks for costing health care services is now a matter of balance between what the government will pay and what the profession is prepared to accept. It is no longer simply a determination decided by government. However we should not assume this is the end of the saga, but watch to see what happens to the mathematics of working time.

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