**Title: System, Society and Dominance Effects in the Adoption of Tele-health: A Tri-country Comparison**

**Abstract**

Although there have been many studies on low skilled call centre operators, research on professional workers in call centres is less common and cross-national research on such operations even rarer. This paper compares the labour process experiences of tele-nurses – certified nurses in call centre settings – across three countries: the UK, Australia and Sweden. Using cross-national, comparative ethnographies, and a system, society and dominance (SSD) theoretical approach, we explore the common problems tele-nurses face as well as distinctive societal differences in the ways in which this branch of e-health care is being established. The outcomes reveal both societal diversity and mounting pressures towards a globalizing conformity between the three countries with regard to working practices and the autonomy of tele-nursing work.

**Key words:** tele-nursing; e-health; professional call centres; system, society and dominance (SSD) analysis

**Introduction**

Across the developed world, health care provision accounts for an increasing share of overall workforce participation. In the UK, 1.5 million people currently work under the auspices of the NHS, accounting for 5 per cent of the national labour force. Overall, about 13 per cent of the workforce is employed in the provision of health care and social work, with the former accounting for the lion’s share of the sector. This represents a larger share of the workforce than that which remains in manufacturing industry (ONS, 2012). The other two national cases covered in this article impart a similar trajectory with over 12 per cent of the Australian labour force employed in health care and social assistance delivery and 16 per cent of the Swedish work force so employed (Australian Bureau of Statistics, 2012; OECD, 2011). Long before the onset of the global financial crisis and associated concerns with public debt, states have sought to gain leverage over outlays in health care. Such initiatives have had direct impacts upon the labour process of health care delivery (Ackroyd and Bolton, 1999; Adams et al, 2000; Bolton, 2004; Brannon, 1996; Lloyd and Seifert, 1995). In this article, we analyze one such development, namely the introduction of tele-health services, the associated labour process and its effects on nursing as a profession across three countries: the UK, Australia and Sweden.

Tele-health refers to the delivery of certain health care services – medical triage, patient information, self-care advice, and further pathways into the health care system - via remote, call centre operations. Previous research, much of it conducted in Sweden and the UK has arrived at mixed results as to the impacts of this new labour process on nursing skills and on the profession at large. Our chief interest in this contribution lies in advancing this discussion, focusing on the question of what happens when you relocate a professional workforce to a labour process (the call centre and the intensive utilization of ‘expert’ software) that was originally designed with other purposes in mind.[[1]](#endnote-1) Posed in this fashion, we are required to traverse three theoretical traditions in the following analysis.

First, nursing is generally recognized as possessing the hallmarks of a profession. It retains a distinctive cognitive structure (Larson, 1977) or abstract knowledge system that allows for the classification and treatment of complex problems (Abbott, 1988). Accredited training, licensing, and a code of ethics follow from this. So too, does the autonomy or control over work that is said to typify professional work, or as Freidson (1995, p.73) puts it, the ability “to do their work as they see fit on the basis of their own sense of knowing how to do it”. The question that concerns us here is whether or not such autonomy is challenged by the utilization of expert decision-making technology in combination with the call centre type workflows. This issue has obvious implications for the retention of professional status. But it also entails entering the ‘hidden abode’ (Marx, 1971) of production, or the labour process, a realm that is often overlooked within the sociology of the professions literature. So, secondly, a study of the labour process of tele-health involves inspecting control over work, how it is specified and accomplished and with what implications for professionalization. Shifts in control, with subsequent implications for autonomy, skill and ultimately professionalization are considered in the following pages.

Thirdly, we recognize that ‘one size may not fit’ or accurately portray all possible variations in the development of this new labour process. For this reason we have adopted a system, society, dominance (SSD) framework (Smith and Meiksins, 1995) as a template for organizing our data. A cross-national, comparative approach, such as the one undertaken in this article may be used to shine a broader light upon place-bound developments, thereby placing such debates within a more comprehensive context. To date much of the literature on tele-health has involved one-off studies in Sweden and the UK’s NHS-Direct. Little, if any, comparative research on tele-health has been conducted.[[2]](#endnote-2) A comparative SSD framework allows us to partially remedy this limitation, by exploring in a more nuanced way the common pressures applied to tele-nurses, the distinctive practices and identities sustained due to societal differences and the dominant discourses that have been applied across this emerging branch of nursing practice.

To summarize: professional nurses employed in tele-health are the subjects of our research. The labour process that they are now engaged in is the object of the analysis. An SSD framework provides us with the macro-comparative approach that we bring to this project. The paper seeks to draw attention to the ways in which this branch of e-health is changing the practice and profession of nursing while at the same time providing a greater understanding of the factors underpinning variations in the workforce outcomes resulting from tele-health.

**Tele-health**

Tele-health is realized through the deployment of integrated technological suites, or what we will be referring to as ‘systemic solutions’ (see below). This infrastructure consists of: decision support software that may assume the form of computer generated algorithms, or more general guidelines, which are used to generate case dispositions for patients who contact tele-health centres; and call centre functionality, including the automated stacking and distribution of calls to waiting nurse consultants as well as the automatic generation of data on performance and efficiency with the use of metrics such as call waiting and call handling time.

Existing research exhibits a lack of consensus as to the overall effects of decision support and call centre technologies on the profession of nursing, although, broadly speaking, two competing scenarios have been advanced. On the one hand, certain aspects of tele-health may be empowering. Information and decision support technologies are *new tools*, the deployment of which permits a broad based, generalist form of practice. In other words, there is a broadening of theoretical knowledge associated with the generalist nature of tele-nursing along with a consequent expansion of job scope (Knowles et al, 2002). Knowledge extension, along with the development of interviewing, active listening and pedagogical proficiencies (self-care promotion and education) lead several researchers to posit the development of new skill sets in association with tele-health (Pettinari and Jessop, 2001; Kaminsky et al, 2008). In augmenting existing skill levels, several analysts (Greatbatch et al, 2005; Holmstrom, 2007; Purc-Stephenson and Thrasher, 2010) stress the point that the new tools are used in a facilitative manner, as an aid rather than as a means of technical control (Edwards, 1979; Callaghan and Thompson, 2001) . Decision-making autonomy continues to rest with the human agent, who is now aided by powerful information databases (Mueller et al, 2008). New technologies are used with existing knowledge but in a fashion that extends overall skill requirements (O’Cathain et al, 2003) and this, in turn, results in broader, more varied work that may be associated with the increased levels of job satisfaction and lower levels of staff attrition that have been reported in previous studies of tele-health (Snooks et al. 2007; Peck, 2005).

If indeed these are the ascendant workplace trends associated with the adoption of tele-health, one can posit broader implications for the profession of nursing. In this scenario, tele-health can be viewed as a potentially new ‘professional project’ (Larson, 1977). As such, it would be associated with a separate stream of nursing education and accreditation that is claimed by the profession vis-à-vis other possible contenders (Abbott, 1988). Given that nurses currently represent the apex of professional presence in tele-health facilities (generally there are no attending physicians) such a project could have considerable traction provided the labour process trends identified above turn out to be accurate representations of working realities. In other words, tele-health could provide a new support for claims to professional health care status on the part of the nurses who administer a new technology that regulates access to various levels of health care (Korica and Molloy, 2010).

From the extant evidence, alternative interpretations are also possible however. While other health care professionals (e.g. physicians) are generally not co-present in tele-health centres, their material artifacts certainly are. Here we point to the fact that in many instances a medical establishment (doctors employed/contracted by health informatics companies) has been charged with the design of the decision support technologies that some tele-health systems utilize. Given that the use of such tools may be a requirement of the job, some have argued that this is to impose a medical model onto nursing practice (Berg, 1997; Hanlon et al, 2005). Further to this point, other researchers have suggested that the use of decision support tools promotes a ‘check list’ type of rote medical encounter (Holmstrom and Dall‘Alba, 2002) in which nurses mainly perform a ‘gate-keeping’ function with little autonomy to deviate from the algorithms (Collins-Jacques, 2004; Ernesater et al, 2009; Holmstrom, 2011). As in other call centre settings, work is performed on an individualized basis with little opportunity for the type of collaborative team work that is common place in clinical settings (Faltholm and Jansson, 2008; Hanlon, et al, 2005). These aspects could lead to a thinning out of professional identity (Wise et al, 2007) as has been observed in other crafts, which have become overly reliant upon ‘smart’ technologies (Sennett, 1998, 2008).

Whether decision support tools are used in a reflexive, empowering manner or in a constraining fashion is dependent upon how workers act to use them and what they actually do. In this respect, the realities of a call centre work environment also have some bearing. Researchers have observed the stressful nature of dealing with long call queues and the pressures of turning the calls over in a timely manner (Holmstrom, 2011; Holmstrom and Dall’Alba, 2002; Wahlberg et al, 2003). Two contending rationalities, one management driven, the other, reflective of professional concerns can be seen at work. A scenario, which features para-professional call handlers equipped with precise medical algorithms substituting for professionally qualified nurses, can therefore not be entirely ruled out in this second synopsis.

Two ideal typifications may thus be culled from existent research on tele-health. One portrays empowerment potentially leading to new professional avenues of development in the field of nursing. The other emphasizes new forms of technical control (Edwards, 1979) with the potential to de-skill and substitute/de-professionalize existing workers. Freidson (1994) has rightly warned against over-simplification and dichotomization when it comes to studying the future of professional work, while an earlier generation of research demonstrates that it is possible to construct the utilization of new technologies in health care, as elsewhere, in quite diffuse ways (Barley, 1986). Undertaking a comparative analysis in three national tele-health settings (Australia, Sweden and the UK) allows us to move beyond stylized dichotomies and hone in on the interplay of determinants that are influencing the nature of nursing in tele-health.

**Methodology**

The research for this analysis is based on qualitative, ethnographic case studies in the three countries. While the researchers conducted fieldwork separately, common concerns and foci, make this contribution more than one of pure meta-analysis. Labour process issues of control, the division of labour, the exercise of autonomy and the implications for professionalization were canvassed across the case studies.

In the case of the English and Swedish studies, two sites each, encompassing both urban and regional facilities were included in the research. For Australia, this was not possible as one totally centralized operation serves the whole state jurisdiction. The British National Health Service Direct (NHS-D) research entailed a total of 38 interviews across the two sites with nurses, their managers and clinical directors. The Swedish study entailed a total of 65 participants including nurses and their managers at Healthcare Direct (HD), as well as professionals in allied health services, ICT experts and politicians who participated in the establishment of the service. The Australian investigation focused, in the first instance, on a group of 12 new tele­nurses, who the researcher, as a participant observer, accompanied through a two-week training program at the Health Call Centre (HCC). These nurses were re-interviewed seven months later, along with nurses and team leaders who had been at the call centre for longer than one year. The latter interviews were conducted in six focus groups, four that were composed of tele-nurses and two that were made up of team leaders. Each focus group included between four and six members while use was made of the same interview protocol during each of these stages. As in the other two cases, interviews were also conducted with managers at the centre.

In addition to the interviews, the respective researchers carried out direct observational analysis as well as archival research into the establishment of the respective tele-health systems. In all three instances workplace observations were made of the proceedings of telephone conversations, and of workplace meetings, while informal discussions were undertaken with nurse advisors (NAs) during work breaks in order to complement the interviews. This fieldwork provided a deeper understanding into the demands of tele-health work.All interviews across the cases were tape recorded and fully transcribed, prior to undergoing thematic coding. Although the initial research was conducted separately, the researchers were working within the same time envelope and examining the same workplace issues. Comparative, secondary analysis of our original data and research was undertaken jointly utilizing a common SSD framework. Working from an SSD perspective, general systemic, societal and dominance effects were identified in each of our data sets as per Table 1.

The SSD framework is used to account for similarities and variations in the labour process, and its effects on nursing, as it has developed in Swedish, Australian and English tele-health systems. It considers systemic influences as those that emerge from capitalism as a global system. These *system* effects create standardising or convergence pressures. For the purposes of this study we identify systemic features with the invariant features of tele-health, namely its delivery through call centres with the aid of decision, or so-called ‘expert’ support systems. The tools of tele-health are global; in many cases large communications companies and health informatics firms have created these technologies for a global market (Collin-Jacques and Smith 2005).

Societal influences, on the other hand, refer to the fact that forces and relations of production are embedded in concrete social formations with their own unique histories, institutional rules and norms and cultures – in this case Swedish, British and Australian societal contexts.

Thirdly, ideologies from an economically dominant society (or organisation) can posit ‘best practices’ that actors in other societies consider imitable or hegemonic. These discursive practices produce ‘dominance effects’ that are influential beyond the particular society diffusing and influencing policy in many societies. One only has to think of global performance standards, supported by ‘best practice’ human resource management techniques, to see how these have spread around the world despite societal and institutional differences between countries. Importantly, dominance is different from system, as there is rotation of influence as different capitalist societies compete as rivals and evolve diverse dominance effects. Regarding the development of tele-health, two major dominance effects have been influential. These consist of the new public sector management paradigm (NPM) and its concomitant emphasis on the central role of HRM in performance managing workforces. This approach has gained traction globally (Pollitt and Bouckaert 2011, p. 12; Ferlie and Fitzgerald 2002) as a means for organizing the delivery of public services. In this instance the UK, as well as being at the centre of NPM, also evolved a developed tele-nursing practice that our other cases (Sweden and Australia) measured or judged themselves against. Accounting for points of commonality and divergence in the labour process across the three tele-health systems allows the researchers to assess in a more complete fashion than is the case in singular case studies the effects which this new branch of e-health is having on the nursing profession.

**Systemic Influences in the Establishment and Practice of Tele-health**

By systemic influences we are referring to the use and adaptation of material artifacts and associated practices that make tele-health possible; in this instance to a specific bundle of new information and decision support tools that includes the technologies of the call centre and the decision support tools that permit sight-unseen patient encounters to be conducted. Tele-health, by definition, involves these two features. The first, the call centre, is a labour process that has been ‘imported’ into health care. The second, decision support software has been developed internally within this sector. Taken together, they constitute globally available ‘systemic solutions’ to the ‘challenges’ that confront publically provided health care. These technologies are common to tele-health where ever it is located.

Thus, in all three countries, tele-nurses utilize software systems to provide over the phone consultations. As indicated in Figure 1, nurses in the UK’s NHS-D are required to use CAS (Clinical Assessment System) in their tele-consultations. CAS is based on algorithms that lead nurses to ask the caller one automated question at a time. Nurses can either ask a leading question with “yes” or “no” as an answer or query callers about the symptoms that have triggered the call. As previous research points out, this rigid algorithmic system restrains clinical knowledge by preventing the nurse from seeing the “whole picture”. It restricts autonomy and with a high frequency of similar calls it can make jobs seem repetitive and routinized. Our interviews and observations in the call centre confirmed the inflexibility of CAS.

I suppose that you’re restricted in a certain way, because you’re taught during the training that you have to respond in a particular way. You’re supposed to work methodically through the assessment and through the algorithms, not skipping over anything, you’re supposed to read the rationale. That can be quite difficult, because I mean obviously people work at a different pace, they read at a different pace, and sometimes the rationale is a huge page … and you don’t necessarily have time, well you don’t have time to read through it all, you can only sort of skim very briefly over certain parts of it, but you’re very, very conscious that you have to be reacting according to how you’ve been taught and what’s expected of you. (NHS-D Nurse Advisor)

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**Figure 1 about her**

Like their counterparts at NHS-D, nurses at Australia’s HCC make use of decision support algorithms and, as in the former case, this software was purchased, ‘off the shelf’ from an American vendor. Once a call is passed up from a call handler to a nurse, the Clinical Decision Support Software (CDSS) *must* be activated. Callers are asked for their principal symptom. Using this information the nurse enters into what is considered to be the most appropriate algorithm. At this point, a ‘stem and branch’ logic takes over. Set questions are used to eliminate various possibilities until an appropriate disposition is reached. Importantly, nurses can decide what algorithm to enter, but not whether the use of such protocols is the most appropriate course of action in every case. The algorithms read like scripts. While nurses are encouraged to bring their existing clinical knowledge into each call, for example, by probing further into responses that callers have rendered, ultimately the intended meaning, if not the literal script, must be presented and the appropriate boxes checked on the computer generated call records.

Contrary to the UK/NHS-D and Australian/HCC experiences, in Sweden decision support consists of guidelines, not algorithms. Guidelines are ‘a more narrative description of the assessment steps’ (Mayo et al 2002) consisting of lists of available questions for different symptoms and problems that tele-nurses *may* elect to use during a consultation as well as medical information and disposition advice. Rather than being provided with set questions as progress is made going through the algorithm, Swedish tele-nurses enter the kinds of questions that they have asked at the end of the interaction. There is no standard transcript that must be followed during the patient encounter.

It requires some kind of almost subtle intuition (fingertoppskänsla) for the contact with patients and that is important and when you don’t have it, it becomes a real challenge ( HD Nurse Advisor)

Meanwhile, the available decision support has been created and elaborated for the Swedish context. Nurses have flexibility and autonomy to direct the conversation in line with their professional training. The work is not standardized, either in the form of scripted prompts nor by use of explicit questions. Instead the guidelines aid the tele-nurses in navigating the conversation, whilst providing reminders and advice about important indications.

As indicated in Figure 1, the use of medical software is a requirement in all three tele­health systems. At NHS-D, nurses can alter computer-generated recommendations, based upon their professional judgment. A certain level of deviation from the computer dispositions is taken as a positive sign that nurses are using their clinical knowledge (2nd Author et al. 2008). NHS-D managers clearly pointed out this element:

… we accept that these are nurses and are allowed and expected to use their critical skills, so we do see this range of raising the outcome or lowering the outcome and we’d expect to see somewhere around 15% - 20% changes. If it’s lower than that, then people aren’t thinking, they are just sticking to the system, so there has to be some variation. (NHS-D Manager)

Nurses at HCC, on the other hand, cannot downgrade a computer disposition without receiving team leader approval. This requirement makes the alteration of computer-based outcomes a rare event. Computer over-rides are viewed as exceptions rather than meaningful displays of clinical acumen at the Australian centre.In Sweden where tele-health guidelines are a product of the national health care system, periodic revision of the software by its users to better reflect existing practice is taken for granted. Where software is leased from or subject to patent protection by multi-national companies as is the case in Australian and British tele-health, altering the software to reflect patients’ needs is much more difficult. Our evidence suggests that algorithms in the UK are periodically revised through examination of the most common over-rides, but nurses play a largely passive role in this process. In Australia, the tele-nurses indicate that they have few opportunities to change or revise the existing algorithms, while in Sweden NAs provide evidence-based medical content updates to the IT consultants who are responsible for the software.

Overall we can point to the diffuse effects that the use of medical algorithms is having on the profession. On the one hand, it is conducive to the exercise of a broad nursing practice, allowing nurses to provide advice beyond particular specializations. But, at the same time, some nurses object to the form of practice that such tools promote. According to Australian interviewees who utilize medical algorithms,

They [patients] are not served by that algorithm system because it’s taking their symptom out of the context of their life, which is against all modern nursing thought (HCC Clinical Nurse)

So it’s like a medical model is dominating rather than as nurses we have our own intuitive practice. Nursing is an art ... Somehow we are being shifted into following the medical model (HCC Clinical Nurse)

Clearly, these comments reflect concern that the ‘cognitive structures’ (Larson, 1977) that define nursing as a professional practice are being overwhelmed by the deployment of software that embeds a different knowledge paradigm. The use of guidelines rather than algorithms may attenuate some of these effects in Sweden’s HDsystem.

The second *systemic* feature of tele-health is service delivery through a call centre format. In each of our cases the software allows for the electronic and remote capturing of data including the length and frequency of calls and time spent in waiting and post-call modes. These systemic features reinforce the objective facility for management control through technology. As a NHS manager recounts,

NHS-D is unlike any other part of the health service that I’ve ever worked in, in that we are incredibly data rich. I can tell you almost anything about this organization, there is so much data out there and the problem is that unlike working in a ward, here I can tell you to the second how long it takes to do various functions and its grown into *an industry* and to some extent that’s a response to the need to get into *capacity improvement and productivity*, we need to understand what’s going on. (NHS-D Transformation Manager, our emphasis).

In the UK, participants reported that a standard phone consultation lasted 8-10 minutes, this being an accepted benchmark. Similarly, in Sweden, tele-nurses testify how they checked their *‘production’* in order to comply with required performance:

You feel the pressure that you shall handle the 6-8 consultations per hour. It means that you like to check your statistics in the middle of a shift to know how much you have done and if you need to work a bit extra. (HD Tele-nurse)

It is a tricky and stressful combination to listen, write … and be fast. At the beginning, all your concentration is focused on finding your way in the system and getting used to the classification of symptoms (HD Tele-nurse).

Yes, it might be a state of stress. But I try not to think about it. It has to be good … when I have a call I have to conclude it, I cannot break in the middle of it because there are others waiting. But it is frustrating because they need help too and it might be something serious … someone who needs help quickly … then unfortunately the callers in line have to wait … and sometimes people are very angry (HD Tele-nurse).

As at NHS-D and Healthcare Direct, average call-handling times at Australia’s HCC are also in the order of 10 minutes on average – and potentially complex. As stated by a nurse trainer during the induction period for new recruits, tele-nursing jobs at the centre would be ‘busy’, even ‘hectic’ as compared to ‘cushy’. This was vouchsafed in interviews with the nurses.

The longer you are here and employed they expect you to be getting your time down well and truly under that 10 minutes. Constantly under 10 minutes! The most important thing though is the quality of calls, so if your quality is going to be compromised by speed then there is no purpose, but when we have new staff coming we tell them not to worry about their timing, just make sure you are getting quality calls... Now very few of my calls were 10 minutes and under and I hardly ever get told off. I think they have given up. (HCC Tele-nurse)

These comments are echoed almost perfectly by a nurse at NHS-D and in the process illustrate the systemic features of the tele-health model that we are pointing to.

NHS Direct seems to be run a bit like a business. They’ve started sticking up graphs now with our call times and the amount of calls. And it’s just like you can’t, you can’t, I know there are some calls you can get through really quickly that are straightforward, but you can’t, you can’t, with Mental Health calls, or elderly people, you know you can’t put a, you know “I must get this person off the phone in seven minutes, or nine minutes, or whatever”. (NHS-D Nurse Advisor)Clearly, time discipline is a reality of tele-health work in all three national systems. Nurses report greater levels of micro-time accountability, than is experienced in hospital nursing, ‘being tied to a workstation’, with little ability to take non-rostered breaks or freedom to move around a ward over the course of a shift. However, several other poignant features are also highlighted in these remarks. Yes, there is the time discipline associated with a call centre labour process, but this is subsumed under a *professional duty* of care to patients and *professional definitions* of self. In each of our cases, safety ultimately trumps throughput. As a result, technical control through call centre metrics is moderated and disciplinary sanctions for missed targets are absent.

As Figure 1 indicates, NHS-D and HCC have considerably more elaborate divisions of labour than are found in Sweden’s HD. The NHS-D design assumes a call-handling role prior to actual contact with a nurse. The provision of basic health information is also made a separate function apart from nursing. Australia followed a similar path. There, in accordance with the Babbage principle of strictly assigning tasks on the basis of the skills required to carry them out (Braverman, 1974, p.79), a nurse’s main duty is to triage. If the caller presents a symptom they are immediately passed on to a nurse. Call handlers deal with other calls such as those requiring health care information. These divisions of labour are in contrast to Sweden’s HD, where registered nurses who are specially trained for consultations on the phone carry out all aspects of tele-health. No division of work between nurses and other job categories occurs. The rationale here is that a professional is needed in the first instance to make an adequate assessment regarding the urgency of the care-seeker’s requirements. The effects of the more elaborate division of labour in the UK and Australian systems is pointedly referred to be an Australian tele-nurse who describes her frustrations in the following manner:

There are plenty of times where, well I feel, god, I haven’t helped that person at all. … Like this whole thing about information calls … if they were ringing for information, giving them the information, but we’re under pressure, no you must find out what the symptom is and give them a triage and push for a triage (HCC Nurse)

As a result of the division of labour that has been introduced into HCC and NHS-D some nurses are left questioning the value of the work they are doing in ways that could undermine a ‘professional project’ (Larson, 1977).

As a result of these factors, we can say that HCC and increasingly NHS-D function more like call centres although, as noted above, parallels with a ‘call centre industry’ should not be overstated. We may conclude this section by drawing attention to both the unique features of each country practice, but also to the growth of systemic commonalities. Tele-nursing in Sweden is not so narrowly defined as in the UK and Australia. The use of guidelines as opposed to algorithms allows for more flexibility in the way that work is carried out. Meanwhile, a truncated division of labour in the Swedish case makes for a more holistic approach. But, it is also the case that nurses in all three cases register the experience of time pressures in the work that they do. . An analysis of societal influences, to which we now turn, will aid our understanding of these initial findings further.

**Societal Distinctiveness**

Societal influences include the disparate pathways into tele-health that are governed by different political and legal regimes and, of course, their distinctive histories. NHS-D as a 24-hour tele-health help-line was a key part of the Labour government’s 1997 proposals to modernize the NHS in England (DoH, 1997). This new service was created in response to growing problems of access to and the cost of the NHS (DoH, 1997; DoH, 2003). UK government departments made increasing use of call centres to deliver public services - with 13 public sector call centres in 1989 increasing to 133 by 2002 (NAO, 2002). An initial project team visited the US, but decided that the American private health insurance system did not fit the UK model of health care delivery; in other words the societal effects in the two countries were different in important ways. NHS-D was launched in March 1998 at three pilot sites and expanded rapidly so that, by October 2000, 22 call centres had been established covering the length and breadth of England. From 2005, a Virtual Contact Centre allowed calls from anywhere in the country to be routed to anyone of 30 call centres. This was helpful for cutting waiting times. These new developments are in line with NHS-D’s overall centralization strategy.

Since its creation NHS-D has provided nurses with the opportunity to pursue a managerial career. Although, the introduction of NHS-D was viewed as the government portraying nurses as ‘autonomous practitioners’ who were well placed to play a central role in revitalising the health service (Nolan 2002), this did not fully take place in practice. For instance, in its initial phase, operational managers were nurses who had to play a double role: checking the targets of the call centre (managerial role) and insuring the safety of the phone conversations (clinical role). In 2003 the position of ‘operational manager’ was redefined as a strictly managerial position concerned with verifying that the quantitative targets the NHS sets are being attained by the nurses. A new post of ‘clinical manager’ was created to oversee the clinical standards of telephone conversations. The redefinition of operational posts as non-clinical has opened up these positions to non-clinicians in competition with nurse advisers. In reality the career opportunities for nurses are strictly limited.

Sweden’s Health Direct developed at about the same time as NHS-D, with Australia’s system coming on line somewhat later. Although both Swedish and Australian authorities carefully studied NHS-D, this was done in different ways and with different initial outcomes. In the Swedish case, we witness a slower and more fragmented process of tele-health development. In 1997, a national project was set up by the Swedish Association of Local Authorities and Regions (SALAR) to evaluate the potential of a national tele-health service. As part of this process, representatives from the government, SALAR, the National Board of Health and Welfare and nurses in charge of existing tele-health services in the counties visited NHS-D in England. On the basis of this study health care officials deemed that algorithms did not fit the envisaged service, while service standardization was considered to run against both the inherent uncertainty of health care provision and the satisfaction of care-seekers’ needs and demands. These decisions did not obviate the need for evidence-based practice, which was to be carried out by registered nurses alone, specifically trained for tele-health consultations. Consequently, no division of work between nurses and other tele-health functions (e.g. call handlers) occurred. Moreover, the management of tele-health remained under the purview of the nursing profession.

Our manager, she is a registered nurse with long clinical experience from different medical fields and organizational settings, she has a large contact net and knows how to describe tele-nursing to politicians, administrators, and other professionals at different care-levels, pointing out our needs as well as our excellence (HD Tele-nurse)

The Swedish fact-finding mission concluded that tele-health had potential to address two serious problems: improving efficiency; and enhancing access to health care. However, a fully-fledged national service was not yet desirable due to the fact that conditions varied between Swedish counties, where there was decentralized responsibility for health care (FCC 1998). As a result, existing sites are bound together in a network, sharing the same technical system of health guidelines and database with health information. This permits load shifting between busy and not so busy centres. The national Healthcare Direct (HD) system is, in effect, in charge, responsible for certified guidelines, training and quality assurance. Additionally, HD follows-up the pace and extent of changed patient behaviours, i.e. shifts in the pressure on primary care and visits to emergency departments resulting from investment in tele-health (FCC 2003: 74-75).

In the Australian case, the state had already undertaken investments in a large, whole-of-government, call centre and the policy decision was taken to simply ‘add’ tele-health on to the existing call centre infrastructure.[[3]](#endnote-3) As in the case of Swedish tele-health, the UK’s NHS-D was studied intensively, but this time, by a non-clinician manager, who was placed in overall charge of tele-health. The influence of NHS-D was immediate. According to the project manager, later to become the first Director of the future centre,

The UK health system has a lot of similarities with us. I think Australia took the concept of what NHS-Direct was about and could make similar comparisons to the pressures on the health system and therefore how a triage and information service might be able to take some of that pressure off and re­direct it (HCC Manager)

NHS-D provided a basis for both emulation and differentiation that was formally spelt out in a *business* plan for the future HCC. This document provided a detailed mapping of managerial and clinical roles whereby an existing government call centre would supply not only the technical infrastructure, but also management, front line call-handlers, and a quality advisor to the new tele-health operation. The department of health, meanwhile, would furnish the clinical staff, including a nurse manager, and training and quality assurance staff. The dominant position of non-clinical management was reaffirmed from the beginning with the Director of Nursing at the centre reporting to the Service Manager on all day-to-day operational issues. As in the case of NHS-D, but unlike the Swedish service, tele-health management was divorced from nursing practice.

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Study of NHS-D These arrangements had a number of immediate effects on the organization of work and job design at HCC. Despite similar concerns to those voiced in Sweden about the importance of local embeddedness, tele-health was centralized as a separate floor in the existing government call centre facility. By doing this the full ‘economies of scale’ offered by call centre technology could be realized, something that Australian managers considered unachievable in the original decentralized NHS-D and by implication in Sweden’s system of regional centres. With one inclusive centre, ‘scientific’ rostering could be used to maximum advantage, whereby staffing requirements could be set against projected call volumes as determined by Erlangian queuing theory. This would obviate the need for call-backs or out-bound calls as occurred in NHS-D, which were considered inefficient

As a result, from the beginning, HCC functioned more like a call centre than its counterparts in the UK and Sweden. However, as this section has demonstrated, societal distinctiveness is continually being moderated through international demonstration effects – cross-national, inter-organizational study, learning, appropriation and adaptation – of perceived ‘best practices’. This is evident in the careful study of NHS-D, undertaken by both Swedish and Australian authorities as well as in the later moves towards greater centralization through the creation of a unifying call grid at NHS-D and HD whereby calls could be moved around the system of centres to the first available nurse regardless of her physical location. Such cases of cross-national study and appropriation are examples of dominance effects to which we now turn.

**Dominant Practices**

Dominance effects reference those discursive practices that recommend ‘best practice’ utilizations for ‘new ways of doing things’, including specific ways in which available technologies should be used. They are managerial prescriptions, commonly accepted, and hence hegemonic, for organizing work effort. In this analysis we identify two dominance effects which are closely connected: firstly, in the new public sector management discourse (NPM), which attempts to bring current practices and metrics from the private sector into public sector provision; and concomitantly, the discourse of human resource management with its emphasis on performance evaluation, which is set against pre-defined targets and metrics. HR is one of the means by which the new public sector management paradigm is put into practice. Taken together, they represent a new type of managerialism that is taking hold in public sector professional services provision and which has widely been suggested to have Anglo-American origins (Pollitt and Bouckaert, 2011).

The introduction of the concept of tele-health has been accompanied by attention to financial discipline, productivity and risk assessment. It has also brought with it opportunities to transform certain aspects of health care delivery and the attendant work of nursing practice. At NHS-D, examining

the whole area of productivity as well, if you take the sort of priorities we are looking at there, we are also now starting to look at what people are actually doing when they are working in the call centre i.e. when are they available to take calls, when they are doing other things, recognizing that they do other things both nurses and call handlers when they are working, quite legitimately, looking things up, discussing cases etc. and there is also a section where we are not so sure about, but it’s still significant, where we don’t know what they are doing, so it’s about managing that whole process as well, and that comes back to the bigger call centres and being able to manage that promptly rather than expecting people to just do it. (NHS-D Transformation Manager)

This quote highlights managerial thinking about the utilization of labour time, which is directly lifted from the dominant approach to call time management in the general call centre industry. It reveals the penetration of these dominant values into the public sector and tele-health in particular.

A managerialist shift is also pervasive in our other two cases. Australia’s HCC design grew out of a critique of NHS-D and concerns that in its original, decentralized guise, it was not enough like a call centre. Clearly, in the *business case* that was put forward on behalf of developing a tele-health centre, rationalizing the use of health resources played the major role in the initiative, displacing earlier concerns with the creation of greater public access to health care. Citing American and UK studies that showed “cost savings as a result of nurse tele-triage services that are provided outside usual business hours”, tele-health was advanced as an alternative to utilizing more expensive, hospital-based services; it could take pressure off of existing hospital departments by reducing the number of patient presentations (HCC, 2004). For deficit conscious governments, this was an attractive proposition.

Similarly, in Sweden, the adoption of tele-health has been widely influenced by the logic of new public sector management and its adherence to the principles of professional management, efficiency and the role of the market. Employing a ‘purchaser/provider’ model, governments’ main role is to allocate resources through market based tendering and procurement policies, while providers assume administrative/management functions for service delivery. In line with the decentralized structure of Swedish health care, tele-health is open to private, for-profit and not-for-profit actors to compete for the publicly funded contracts. Regardless of who is actually supplying the service, the rationale for investment in tele-health is similar to our other cases. By taking pressure off of hospital based accident and emergency departments, tele-health can be a significant source of cost savings, commencing with staffing by nurses rather than physicians. Putting this rationale into effect, HD became the ‘gateway’ into the Swedish health care system. Patients could no longer simply present at hospitals after `normal business hours’. Instead they had to go through their tele-health centre in order to determine whether a hospital visit was warranted.

As a result, the quest for the realization of ongoing efficiencies associated with call centre labour processes in general seep into the operation tele-health. At the Australian centre, the challenge for management involved

*having to meld a health care industry with a call centre industry*, constantly having to meld a workforce ... to make it make sense to them is a constant blending and melding of these two industries and about how they drive for efficiency or how they drive for policy, how they drive for safety and it’s not always too compatible ... looking for that compromise position all the time, trying to get the best of both worlds (HCC Manager, our emphasis).

The workforce ‘melding’ to which the HCC manager refers has primarily been sought after through technical means, namely in training in the use of and adherence to the medical algorithms that are employed in tele-health. Competent performance means remaining ‘in tune’ with the algorithms. Thus the nurse must justify professional disagreements between herself and the machine in a setting where conformity is the expected norm. Such deference to ‘expert’ software in daily work activity could certainly be theorized as having corrosive effects on professional standing over time.

Technical control through the use of and measurement of deviations from computer algorithms is not evident in Swedish tele-health. Perhaps as compensation for this, as indicated in Figure 1, we do find a greater adherence to the protocols and practices of what is considered to be ‘*best practice’* human resource management. This includes the use of both ‘hard’ call centre type metrics, as well as professional and material incentives. At the HD centres, a balanced scorecard approach is used to continuously evaluate nursing performance. Nurses are assessed not only in terms of the quality of the service they deliver, but also in accordance with more standard call centre metrics, such as ‘talk time’ and overall job cycle duration. These `production’ statistics are displayed in the call centre, just as call satisfaction levels are continuously being measured. Also in keeping with the tenets of contemporary HR prescription, a component of remuneration is tied to individual performance metrics. Individualized and incentivized salary structures that reward the attainment of performance targets as well as willingness to work irregular shifts and specialized educational qualifications are replacing seniority as a determinant of take home pay in Swedish tele-health.

Accompanying these ‘hard’ measures we also find an emphasis on professionalism in Swedish tele-health, which has been designed in collaboration with nurses in practice and at Swedish universities with the deliberate intention of following the nursing process (Wahlberg 2004; Holmstrom 2011). The professional association for tele-nurses in Sweden TRIHS has developed and is spreading a template defining the competence needed for tele-nurses’ work (TRIHS 2012). While Healthcare Direct offers introductory and advanced training, specialist training in tele-health is offered for registered nurses at the universities providing competence equivalent to a formal university degree in tele-nursing. Taken together, these developments signal that in the Swedish case tele-nursing is making a bid for professional status. In the UK and Australia there are no equivalent professional organizations or opportunities for accredited training in tele-health. Rather, at both NHS-D and HCC, tele-health is associated with a short period of on-the-job training (ten days in Australia) that focuses almost entirely on gaining familiarity with the algorithms and the call centre. This makes a professional project much more difficult to achieve.

**Conclusion**

This article has sought to advance our understanding of tele-health and its implications for the profession of nursing. To this effect, we have used a SSD framework to aid in our comparison of the labour process in tele-health in three different national settings. The turn to tele-health is a system-wide trend for the transformation of healthcare delivery that represents a common ‘solution’ (the use of call centres and ‘expert’ software) to perceived problems (budget deficits, ‘inefficient’ public services) many of which have been targeted by the new public management paradigm.

. In all three cases, but especially the UK and Australia, there existed powerful demonstration or dominance effects of a sizable commercial call centre industry – with spill overs of personnel (in the forms of non-clinical operations managers) entering the public health systems in both countries, and a generalized ‘discourse’ of NPM advocating a privileging of private over public management practices. The division of labour in the UK and Australian cases was borrowed from the hierarchical practices of the professional fragmentation strategies embedded within the principles of NPM, where skilled occupations are controlled or checked through the creation of new sub-professional entrants whose pay and conditions are lower and who function to hold-back upward professional aspirations. Call handlers initial role in filtering the call sets up the possibility of enlarging this non-clinical function and using NAs more sparingly, a possibility that now appears to have been brought to fruition with the recent dis-establishment of NHS-D and its replacement by the emerging Call-111 service in England.

To date no research has been published on the operation of the new service, but its genesis can be related to the systemic forces identified earlier in this analysis whereby a call centre paradigm overwhelms a professional service model, with medically trained staff at the front line being replaced by non-professional staff subject to *technical control* in the form of computer based algorithms. There has been widespread criticism of the new service for increasing not decreasing pressures on A & E departments and more seriously, for imperiling callers due to the slowness of response times and incorrect dispositions. The direction of travel that NHS-D has taken was predictable, and the loss of power by nurses could have been prevented if the Swedish practice of treating ‘tele-nursing’ as a new branch of nursing that requires professional controls and training had been adopted. By contrast in Sweden where nurses provide the first and only point of contact with the system, a classic fragmentation strategy has been inhibited and a new professional project stream launched.

To an even greater degree, the centralized organization in the Australian case meant the tele-health system functioned more like a call centre than its English and Swedish counterparts, which initially were more fragmented. The late development of the Australian case, and the greater non-clinical role in the start-up meant that call centre industry norms had greater traction. In both Australia and the UK, nurses were recruited from diverse specialisms and through limited on-the-job training brought up to speed as tele-nurses. The training was generally brief, and the focus was on gaining proficiency in the use of medical algorithms. Both systems rely heavily on procured software programs, which embed a knowledge paradigm that is owned by another profession (physicians). ‘Expert’ software, in tandem with the accouterments of the call centre restrict the autonomy that nurses can exercise in their work so that professional control is increasingly relegated to the margins of the labour process.

In Sweden, these systemic and dominance effects have been resisted to a greater extent through the continuation of a specialist professional culture of nursing in the e-health field. Here nurses were involved at the outset in the establishment of tele-health and the adoption of its protocols rather than simply being recruited *ex post facto*. This and educational programs that specifically addressed the new occupation of tele-nursing created greater national institutional barriers to dominance effect rationalizations given common systemic influences across the three cases. In NHS-D we now find an expanded role for call handlers at the expense of professional nurses, while in Australia traditional features of nursing practice (patient education and advocacy) have been pared back with the introduction of tele-health. . In Sweden, a more thoroughgoing, invasive set of HR practices substituted for the technical control offered up by the generic algorithms that were in use in Australia and the UK. While the systemic and dominance effects that we have pinpointed in this article, are still present in Swedish tele-health, they have, to date, been mitigated to a greater extent, by the professional project that has been constructed around tele-health development.

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**Figure 1 Systemic, Societal and Dominance Effects in Tele-health**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **Systemic Influences** | **Societal Influences** | | | | | |
|  | **England (NHS-D)** | **Sweden (HD)** | | | **Australia (HCC)** | |
| **Call Centre Technologies** | | | | | | |
| System wide integration | * Yes: started decentralized moved towards centralized grid. | * Partial: started decentralized moving towards greater centralization. | | | * Yes: one centralized facility from start-up. | |
| Division of labour | * Extended division of labour * Call-handlers * Nurse Advisors * Health Information Advisors. | * No: registered nurses perform all function | | | * Yes: nurses + call handlers for triage and information calls respectively | |
| Call backs & call follow-up | * No provision for call backs/follow-up | * Call backs/follow-up routinely made | | | * No provision for call backs/follow-up | |
| **Decision support software** | | | | | | |
| Structure | * Mandatory use of computer generated algorithms | | | * Mandatory use of decision system based on guidelines | | * Mandatory use of computer generated algorithms |
| Over-rides | * Downgrading/upgrading computer dispositions. NAs can decide independently if downgrading is required. | | | * Professional decisions and use of guidelines to assess urgency | | * Downgrading/ upgrading computer dispositions, but   team leader approval required for downgrading |
| Ability to revise | * Indirect NA influence. Algorithms revised by looking at the most common over-ridden algorithms. | | | * Nurses are a part of the training and revision of the system. They give input into revision/ change of existing guidelines | | * Limited input into  revision/change of  existing algorithms |
| **Dominance**  **Influences** | | | | | | |
| **New Public Sector Management** | | | | | | |
| Ownership | * National gov’t | | * Shared county & state gov’t | | | * State gov’t |
| **Management**  Structure | * Nurses, medical staff who opted for a managerial career; * Public sector manager; * Managers with private sector experience, some of them have managed call centres. | | * The entire workplace staff consists of registered nurses, including team managers and head of units. | | | * Public sector   manager with call centre experience in charge of overall day to day operations |
| **Human resource management strategies** | | | | | | |
| Performance targets | Loose guidelines   * no overhead call display boards * no publication of   individual call statistics | | Overall guidelines   * overhead call display boards * publication of individual /group call statistics | | | Loose guidelines  no overhead call  display boards  no publication of individual call statistics |
| Performance evaluation | ‘Light’ regime of evaluation.  Quality assurance; qualitative evaluations of calls.   * Checks on the use of the  software algorithms with  certain level of deviation  taken as positive indicator. | | ‘Light’ regime of evaluation.   * Quality assurance; qualitative evaluations of calls. * qualitative evaluations of documentation. Balanced scorecard methodology * Incentivized   component of remuneration | | | ‘Light’ regime of evaluation   * quality assurance; qualitative evaluation of two calls per   month   * focus on standardization   through use of algorithms |
| Training & Development | * three years formal training for a registerable qualification * three years’ clinical experience * Initial tele-nursing training * frequent in-house training | | * university qualification in tele-health available * registered nurse with adequate specialization & several years   clinical experience   * induction course followed by several days of on-the-job training * on-going training & educational seminars | | | * RN registration * 5 years clinical experience required * 2 weeks on-the-job training * frequent in-house seminars |

1. Call centres and the labour process associated with them first made their appearance during the 1990s in the financial services sector. See Taylor and Bain, 1998 and Author 1, xxxx. [↑](#endnote-ref-1)
2. For example, the recent volume by Kumar and Snooks (2011) contains individual country chapters, but no comparative analysis. [↑](#endnote-ref-2)
3. In Australia, health care falls under the jurisdiction of the separate states rather than the national government. [↑](#endnote-ref-3)