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Collaboration, Innovation and Challenging Knowledge - the need for Specialist Practitioners for health care development.

Abstract: Against a background of fiscal and regulatory pressure to rationalise and justify healthcare interventions there is an underlying political message that greater cooperation and collaboration would improve healthcare for all. This article utilises the specific specialism of lymphoedema to illustrate the developments and improvements in care, which can be achieved by harnessing the knowledge and skills of not merely the multi disciplinary team but people with vision prepared to take a risk to improve patient care. It argues that it is the experienced specialist who advances care both by innovation and by working to achieve consensus to guide the less experienced generalist. Using specific examples of published research drawn from other specialities, leg ulcer management, varicose vein treatment and dermatology, it shows how this supports the practice of lymphoedema practitioners and that there is much to be gained by sharing knowledge and practice.

Keywords: Collaboration, specialist practitioner, working with industry, putting research into practice, lymphoedema, compression.

Main Article:

The continued development of evidence based practice and more recent Department of Health pressures to work collaboratively within, and outside of, the NHS have arguably generated a greater sharing of knowledge among nurses

and allied health professionals (DOH 2008; DOH 2009). Within nursing this tends to be embraced more readily by nurse specialists, consultant nurses, advanced nurse practitioners etc. The raft of job titles are too many to list here and merely add to the 'maze of semantic confusion' alluded to by Marshall & Luffingham back in 1998. The important factor is that whatever the employment title these are individuals who display a certain way of thinking that drives and motivates their actions. They tend to have inquiring minds, use creative and flexible approaches to their work and very importantly are willing to take risks (Woods 2000) whilst providing clinical and professional leadership. This leadership role requires 'vision', that is an ability to see things in a new way. This tends to encourage them to form alliances with other health care professionals in a bid to encourage them to see the possibilities presented by this vision and the potential of working together to achieve goals. This is currently reflected by the increase of articles from non-nursing professionals in nursing journals and conferences that focus on pushing boundaries and texts on multidisciplinary working which seem to have been the theme of the early part of this year.

This article utilises the specific specialism of lymphoedema to illustrate the developments and improvements in care which can be achieved by harnessing the knowledge and skills of not merely the multi disciplinary team but people with vision prepared to take a risk to improve patient care. Collaboration, as opposed to rigid demarcation of roles is advocated in a bid to foster collaborative relationships and eradicates the need for patients to see a procession of health

care professionals or indeed professionals being restricted in their areas of practice. Most health professionals would agree readily to the concept of sharing knowledge and searching for a consensus on practice. However those involved in such initiatives experience frustration, stalling and sometimes failure to reach consensus. One of the unspoken issues underlying the lack of anticipated progress could be that sharing involves challenging long held beliefs and long standing practice - deep seated "knowledge". The experienced nurse needs to perceive a totally safe environment to openly explore the myths or misunderstandings that may have built up over the years, such as those around compression therapy (Davies, 2007). Even when research brings new evidence to light the difficulties of changing practice to reflect the new information is well documented (NHS Centre for Reviews and Dissemination 1999).

A major piece of collaborative work evolving over the last few years is in the field of Lymphoedema (Box 1) with its influence resonating far beyond the specialty itself. This work has involved Lymphoedema specialist nurses, leg ulcer nurses, physiotherapists, occupational therapists, researchers, academics, patients and industry. The Lymphoedema Framework project has produced a Best Practice document (Lymphoedema Framework 2006), based on international consensus, and continues to produce practical published work. Although principally for health workers already managing lymphoedema or chronic oedema the principles and structure of the documents could be useful in other fields e.g. the template on setting up a new service (Lymphoedema Framework 2007). Crucial to any

project or initiative dealings with industry is transparency in all fiscal and other benefits involved otherwise cooperation would be swiftly withdrawn by core collaborators.

Box 1.

Lymphoedema is a chronic oedema caused by failure of the lymphatic drainage system. It is often noted in one or more limbs, but may involve the face, genitalia or trunk. It arises from congenital malformation of the lymphatic system, or damage to the lymphatic vessels and/or lymph nodes International Society of Lymphology (ISL) (2003). Disfigurement ensues and lymphoedematous areas are at an increased risk of infection and ulceration (Mortimer 2000)

The impact of a patient support group (the Lymphoedema Support Network), a professional specialist group (the British Lymphology Society), industry and an experienced research group (Morgan & Moffat 2006) working on the issue of lymphoedema individually and collaboratively has seen awareness of the condition and consequently management raised and discussed in more conferences, journals and text books than ever before. It is in this increased public gaze that lymphoedema specialists have had to define and justify or change their practice. Few areas of healthcare have such a diverse resource pool as lymphoedema. Its specialists have often developed an interest in the

subject in their own fields first; vascular, dermatology, leg ulcer management, tissue viability, as well as oncology and palliative care. Their registered profession can be nurse, physiotherapist, occupational therapist, radiographer, physician, surgeon and others. Most have progressed further by undertaking specific training in lymphoedema, often after years of experiential learning with lymphoedema patients in their original line of work. By now there are recognised courses in lymphoedema at many UK universities and other healthcare learning centres (see Box 2).

Box 2. Examples of Lymphoedema Courses in the UK.

University of Glasgow. Lymphoedema: Diagnosis, Assessment & Prevention of Complications (available at H or M level) held in Glasgow or Newcastle.

University of Bradford The Management of Lymphoedema (level 2/3 or M)

University of Central Lancashire Advanced Certificate -Introduction to Chronic Oedema Management (level 3)

The Royal Marsden School of Cancer Nursing and Rehabilitation
Lymphoedema in Cancer Practice (5 day course)

See also website information for:

www.macmillan-lymphoedema-academy.org.uk

www.lymph.org.uk

Other course information available at

www.thebls.com/education/index.php

Although the Best Practice document pulled together the basic concepts of lymphoedema management it is, by its very nature, a very generic document. Whilst it deals very well with the basic concepts and skills involved, such a

document can never deal with the difficult, complex decisions made by professionals in a specialist clinic. Nor should one forget that, as with all published material, the evidence marches on, changing what we know ,how we practice and challenging our long held beliefs and assumptions There is a good standard of research developing in lymphoedema and allied matters e.g. Todd (2008) and the PATCH trial into cellulitis (www.patchtrial.co.uk).

Learning from looking beyond normal boundaries.

Practitioners can also find endorsement or deeper understanding of practices regularly undertaken in lymphoedema by expanding their horizons and looking outside of their specialism to recent published studies in, for example, leg ulcer management, varicose vein management and dermatology. Such studies can provide greater understanding to the practices of for example layering compression garments, the use of stiffer garments in lymphoedema and the use of firm padding to deliberately increase the pressure in a focal area under compression therapy.

Layering - functionally easy with the potential to improve effectiveness.

Lymphoedema practitioners have used the layering of compression garments for many years in order to achieve control of oedema within a limb (Lymphoedema Framework, 2007). Lymphoedema tends to require higher compression pressures to maintain control than venous conditions. The assessment of the arterial status is assumed as a pre requisite prior to the application of any

compression therapy (RCN 2006). There are three compression classification standards in common use in the United Kingdom which can cause confusion for garment supply. Prescribers therefore, need to understand the strength being described by each standard, for example, “class 2” in the traditionally used German standard (RAL-GZ 387:2000) gives a compression of 23 -32mmHg at the ankle, however the British standard class 2 (BS 6612:1985) provides only 18-24 mmHg, and French standard class 2 (ASQUAL) only 15-20mmHg (see Box 3). A lack of familiarity with the differences between the classifications used by various manufacturers can lead to under-treatment (Davies & Desborough, 2008). Many lower limb lymphoedema patients require RAL class 3 or 4. Layering may therefore be used to achieve these higher pressures when the patient is functionally unable to apply the stronger stocking or needs the flexibility of being able to remove one layer part way through a day, e.g. while resting. However, the actual amount of compression achieved when layering garments has been the subject of much guess work and pseudo-physics over the years. The compression that a garment exerts on a leg is always measured at the ankle. It is taken to be the resting pressure of the garment at a certain diameter (or circumference) of leg e.g. an ankle of 24cm. Thus a correctly fitted garment of RAL (German quality standard) class 1 gives 18-21mmHg compression at the ankle (imagine a blood pressure cuff squeezing around your ankle, when the mercury in the sphygmomanometer or modern equivalent has risen to approximately 20mmHg). In the stocking the pressure gradually eases off to half this pressure by the thigh.

When layering garments inexperienced fitters might think that a class 1 stocking on top of a class 2 stocking would make a class 3, but this is not the case. A RAL class 1 gives 18-21mmHg and a class 2 gives 23-32mmHg. If these pressures were added together the patient's ankle would actually receive between 41-53mmHg, which is higher than the 34 - 46mmHg of a class 3. A common assumption had been that the second layer of stocking would not apply its full resting pressure e.g. only giving about 70% of its normal pressure. Recent studies have not supported this view. Partsch & Partsch (2008) cite previous studies which show that the resulting pressure of two stockings applied over each other corresponds to the sum of the pressure exerted by the single stockings i.e. 20 + 20 = 40mmHg.

Box 3. Compression Classes in common use in the UK.

Standard	Class 1	Class 2	Class 3	Class 4
German RAL-GZ 387:2000 e.g. Mediven, Jobst	18-21mmHg	23-32mmHg	34-46mmHg	>49mmHg
French ASQUAL e.g. some Sigvaris products	10-15mmHg	15-20mmHg	20-36mmHg	>36mmHg
British BS6612:1985 e.g. Duomed, Activa	14-17mmHg	18-24mmHg	25-35mmHg	Not reported

applied over each other is higher than that of a single stocking exerting the same resting pressure. Greater stiffness will mean that when the patient stands or

flexes their calf muscle the pressure under the garment will raise higher than with a less stiff garment, hence giving the oedematous leg a greater pumping effect. This is then corroborated by their study on a 2 layer stocking kit designed to be used on leg ulcers. Lymphoedema practitioners understand the functional advantages of layering for patients who need higher compression pressures but who find applying strong stockings not only difficult, but in some cases impossible, even with application aids. The resulting greater pressure and higher stiffness values realised from layering could provide greater therapeutic effect whilst being practical for the patient and often the carers

Stiffness – defining working pressures in compression garments.

Stiffness is further explored in a recent dermatology paper by Karin Van Der Wegen-Franken et al (2008). This paper explores the correlation between static and dynamic stiffness indices in stockings. Generally speaking static stiffness is defined as the amount of increased pressure a garment exerts when it is stretched by 1cm over its usual fitting size. Dynamic pressure has been described slightly differently by researchers but generally refers to the increase in pressure (usually distal to the calf muscle or proximal end of the Achilles tendon) when the calf muscle is flexed. The difficulty in research is to reproduce and measure the pressure changes accurately when the leg is moving. The researchers in this study describe a novel measuring device which they argue produces more realistic results than previous studies. The results show that some fabrics have much higher stiffness values than others, even within the

same compression class. This supports the experiences of lymphoedema specialists using flat knit (seamed) garments or stiffer round knit garments on the legs of patients with long-standing lymphoedema. Practitioners have noted for some time that the results gained with stiffer garments tend to be audited as performing better. The fear expressed by some nurses that the patient will not manage a stiffer garment is not necessarily borne out in practice, (consider how much easier it is to put on a tight pair of jeans than a new pair of tights), the patients say they can get a good hold of the stiffer garment to pull them on.



(Photograph reproduced by permission of medi UK Ltd)

Fig.1 Firm padding used to soften hardened tissues in Lymphoedema.

Firm padding to soften tissues by increasing focal pressure.

Advanced lymphoedema bandaging and compression hosiery training days usually include a demonstration of using firm padding over areas of skin

hardness (“fibrosis”) in long standing lymphoedema (fig.1). This is based on Laplace’s law regarding the increased pressure exerted over an area of smaller radius than that of a larger radius; the change of radius produced by inserting a pad, proportionally changes the pressure. Very few researchers have measured the actual pressure produced under different types of padding and related it to venous or lymphatic effect. Partsch & Mosti (2008) recently looked at the interface pressures under a firm pad (of a very particular shape and construction) temporarily applied to the inner thigh under stockings/bandages after great saphenous vein stripping or endovenous ablation. The paper gives the rationale for such localised compression and provides the resulting measurements of thigh compression, both with and without the pad. The results are interesting to lymphoedema practitioners and others who use padding for purposes other than protecting bony prominences under bandages. Their results showed for example that a stocking giving a mean 35mmHg resting pressure (in supine) at the ankle would normally exert approximately 17mmHg pressure at mid-thigh level but with the pad in place resulted in a localised pressure of 66mmHg pressure mid-thigh. Far from being cautious of such high localised pressures the authors rationalise that this is exactly what is required in this circumstance. It may well be the reason for the success experienced in softening hardened tissues in lymphoedema. It does however serve as a stark warning to those who teach bandaging that imparting an understanding of the density or firmness of padding is just as important as its placement. It is worth noting that the pad utilised was of a more rapid change of radius and firmer than the pads regularly utilised within

lymphoedema. Further study in this area could produce interesting results with lymphoedema patients and perhaps other clinical areas.

Influence on Healthcare Practices

Whilst such published studies may not change the practice of many a specialist in their field it can by its very nature encourage expansion of boundaries and innovation for practitioners with vision. While the ideal of using evidence based practice in all patient interventions is the aspiration, the reality is often more difficult. Patients challenge practitioners with increasingly complex scenarios further compounded by an ever increasing array of treatment modalities. The evidence supporting each modality is often either theoretical or tested in non-complex patients. The reality is patients with multiple co-morbidities coupled with their associated pharmacological or therapeutic treatments, not to mention the multiple 'human factors' affecting outcomes.

Nurses and allied health practitioners need more than laboratory tests and randomised controlled trials to shape practice. The production of best practice guidelines, algorithms and formularies will indeed help to standardise care and provide the generalist nurse with a greater degree of confidence. It should be remembered however, particularly by healthcare commissioners and the managers of generalist nurses that those guidelines are written with the assumption that there is a specialist (nurse/AHP/physician) to refer up to when the problem is not "standard". These are the visionaries who are often the catalyst to change, people prepared to push the boundaries of practice to ultimately improve the quality of care provided to patients with intractable

conditions which have a major impact on their quality of life. The innovations that happen in the management of complex or rare case patients by skilled practitioners are often the first step to developing the health care practices of the future.

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Key Phrases

- Cooperation and knowledge sharing between specialists and disciplines is even more important in times of fiscal constraints.
- Ethical collaboration with industry and research partners is possible and can be beneficial to the public at large.
- The role of the Specialist Practitioner (nurse/AHP) remains vital to the future development of healthcare provision.
- Lymphoedema is a specialism which draws its expertise from a wide spectrum and therefore, as patients become more complex, has much to offer as a model to other areas of healthcare.