Perspective
Globalisation of repair: 12 points of policy

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Abstract

Policy for the treatment of wounds, burns and lymphoedema in a world in which poverty and strife are prominent requires that those who intend to manage them should think globally. The author chooses 12 points for emphasis.

Introduction

When a national journal thinks internationally both local and global descriptions of macro and micro environmental issues are appropriate topics to be discussed.

Reasons for failure to repair include poverty and strife. These are leading macro themes and they have local equivalents of deprivation and harm within the wound.

Contemporary journals are replete with information about genomes, cytokines and growth factors while the major topics of past centuries such as pH, optimum temperature, or the early mediators of inflammation such as acetylcholine, histamine and kinins get little attention. In the 19th century in the Radcliffe Infirmary in Oxford there were "rubber nurses" training schedules of great repute used for those recovering from wounds. Ensuring oxygen supply remains of key interest, but ignored by the scientifically minded are the contributions to healing offered by other systems of medicine influencing oxygenation such as herbals, warming and yoga.

There is always concern about lack of funding. Approaches to resource givers may provide ample illustrations of the terrible consequences of wounds but perhaps too little emphasis on achievement such as the wonderful benefits their welcome, but too little, resource giving has achieved in the past.

The wound healer may demand of governments more attention to legislation on the prevention of accidents and also demand attention to improve access and remove causes of delay in early presentation of the wounded to carers with the required skills.

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Global impediments to healing

Poverty can result from the incapacity that is a consequence of being wounded. It can be a direct effect of the wound preventing income generation, or indirect because of the time taken to manage the wound or due to problems of access but also there is the rejection by society because of disfigurement. Income generation is a key to improving quality of life. It requires assessment of what activities or manufactured goods would be locally marketable and then providing the tuition to meet those needs. A recent visit to Ethiopia[1], where swollen feet due to not wearing shoes in an irritant soil revealed many outcast women, demonstrated community care.

Figure 1. Reversal of gross hypertrophy of tissues due to lymphatic filariasis using integrated medicine at the Institute of Applied Dermatology, Kerala, India.

On learning to care for their feet and then proving their capacity to reduce the swelling and improve the functions of the skin, the provision of microfinance schemes ensures uptake of jobs and return to the funder of a proportion of profit. The women involved not only have healthier feet but are better dressed and more smiling. In India, leprosy-focused charities find that giving a beggar a goat improves self-esteem as an owner, with another living creature to think about that can provide an income. **Policy point (1). Think always how will this wounded person generate an income.**

Strife and man's inhumanity to man is revealed in any of the Médicins Sans Frontières literature. The land mine and cluster bomb are man's inventions resulting in amputation, the problems of which need to be shared with the management of prevalent threatening disorders such as malaria, HIV/AIDS or tuberculosis and the epidemic of diabetes. **Policy point (2). Where there is strife, provision for the wounded must include immediate after care that does not ignore prevalent threatening endemic diseases.**

Bureaucracy impairs at many levels, the health service is over-managed in some places and can be ineffective. An example of bureaucracy interfering with wound healing is frequently seen in customs houses preventing import of much-needed goods. It is often linked to corruption. **Policy point (3). Planning to use donations must include management of potential corruption and bureaucracy that leads to their misuse.**

Mobile populations can be counted in millions. The arrival of immigrants escaping abuse is overwhelming on the islands of the Mediterranean and in Italy at the present time. It requires enormous organisation to manage people escaping from strife or climate change. They need protection from acquiring the consequences of overcrowding and malnutrition. There are many cultural changes they must experience which need help and understanding. Above all they need good listeners and interpreters. The shear size of the problem itself generates 'internal' carers and interpreters who can contribute provided the host countries are organised to facilitate care of this kind. **Policy point (4). Coping with mobile populations requires investment in understanding. Recruitment of interpreters is a priority.**

Under the heading of climate change one finds the provision of water fit for drinking. Emphasising that this is also needed for washing has brought about a memorandum of understanding between the International Foundation for Dermatology, the International Skin Care Nursing Group and Procter and Gamble. The latter has a humanitarian objective, now several years in place, to provide sachets of cleanser that make 10 litres of water fit for drinking within 20 minutes. Advantages include not just its availability but its low cost[2] and the economics of substituting it for bottled sterile water. There is also the desirability of not having to find firewood or diesel oil to boil it. **Policy point (5). Establish the provision of water fit for drinking; it will be needed for washing.**

Corruption is a very common cause of failure of access of supply to where it is most needed. I despair at paying *per diems* to persons invited to discuss how best they may benefit from substantial gifts, knowing that non-attendance prevents good planning and will happen without such payments. Altruism is an antidote to corruption. It is important to encourage it, but it will not happen without some award. I have found public thanks and certification of heroes and heroines giving their time to altruism is an inexpensive investment. Wound healing organisations should have awarding always on their agenda for all levels of care. **Policy point (6). Do not forget to thank. It is always appreciated.**

What happened in the past? Should it be obsolete?

To access only the latest literature on medicaments and devices and leave unread the literature of the past is an investment in the more costly. The *British Medical Journal* during the 1914–18 war had much information on the horrific and highly prevalent war wound[3]. Florence Nightingale's *Notes on Nursing*[4] not only reads well but has much that when acted upon will provide benefit.

A description of the seaport hospitals in the Napoleonic wars draws attention to the thousands of sailors with leg ulcers which healed by ingesting lime and lemon juice. Could it be a benefit we have forgotten in the hospital diet of today?

Go back 2000 years and read Chinese or Indian literature and one will find benefits, A publication from Kerala on Indian systems for managing lymphoedema showed that it is possible to do systematic reviews even of Ayurvedic literature written in Sanskrit[5]. Figure 1 is an example of the benefit derived from such when integrating herbals, yoga and biomedical physiological principles.

The Institute of Applied Dermatology in Kerala is rich in insights into integration. Yoga is better than manual lymphatic drainage, adding synchronised breathing to promote emptying of the lymphatics into the great veins and to control the autonomic nervous system's affects on lymphatic contractility. It also provides the posture and the movements maximally draining the lymphatic system. It justifies further integrated research with the leaders of the field (Figure 2).

Modern literature includes a document on wound and lymphoedema management published by the WHO[6]. In it

Table 1. Basic principles of wound management (Macdonald)[6].

Manage systemic conditions
Protect the wound from trauma
Promote a clean wound base and control infection.
Maintain a moist wound environment
Control peri wound oedema

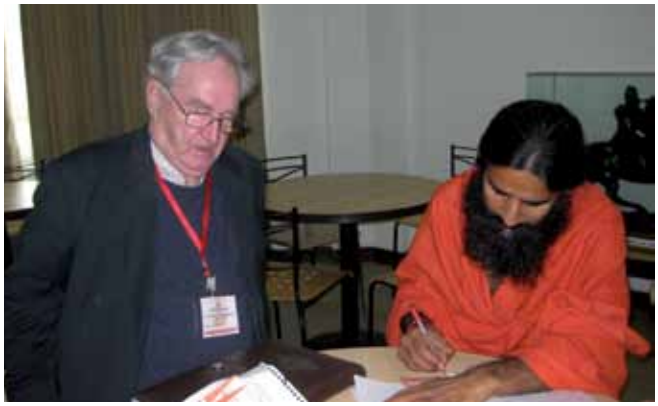

Figure 2. Planning to integrate research into yoga. Swami Ramdevji Maharaj, the Guru of Yoga, meets with Terence Ryan January 2011 at First International Congress 'Yoga for Health and Transformation', Patanjali University, Haridawar, India.

John Macdonald describes five principles of wound healing. Tables 1 & 2 describe lymphoedema management. In both we recommend mobility. It is not new; it is as ancient as Asian medicine. In the hospital, named the Radcliffe Infirmary, Oxford,where I learned my management of wounds, there were "Rubber Nurses" throughout the 19th century[6]. They were essentially masseurs and Dr Gardener who introduced manipulation of the tissues for several illnesses was regarded as an innovator, when in fact the first *Encyclopaedia on Arts and Sciences* written for the lay public in 1806, claimed, based on 18th century studies, that movement of the tissues helped drainage. Globalisation, which is a contemporary theme, provides opportunities to become familiar with literature that is 2000 years old but the contemporary reader mostly relies on literature that is no more than a decade old.

There are themes from the past which have been largely forgotten. The skin, in which after all most chronic wounds are found, has a literature devoted to the acid mantle.

The optimum temperature for most cellular activity of the human body is 37 degrees. As we demonstrated, the temperature of a wound drops far below this during a dressing change and may take several hours to recover[8].

I have written how the skin is not the static organ seen in photographs and histology slides[11]. It is in actual fact constantly on the move and atrophies if static and lacking mechanical strain. It benefits from being warm but survives longer than other tissues in the cold. It has developed on its surface a protective immunosurveillant barrier in collaboration with its bacteria that prefers an acid environment.

Table 2. Basic principles of lymphoedema management (Vaqas and Ryan 2002)[7].

Promote lymph flow by breathing and movement
Reduce venous overload
Manage inflammation overload (infections and irritants)

Forty years ago repair literature referred to mediators of inflammation such as acetylcholine, histamine or kinins. They were followed by prostaglandin. One reads little of these today but they have not become less important. Oxygen supply as a theme has not faded and leading advocates such as Thomas Hunt should be read[10]. **Policy point (7). There is wisdom and relevant advice in past literature and it should be read.**

Funding

In recent years, the industry built around wound healing, burns and lymphoedema has been generous with its funding. Wound healing organisations with a global outlook will be looking for low technologies and will find today's products from the industry mostly too expensive. The management of lymphoedema in Kerala has described the costs of a system of integrated therapy using yoga, washing, Ayurvedic herbals and Biomedicine's bandages, when affordable. Much of what industry provides is unaffordable and at the end of six months none of the most modern dressings and bandages will have been purchased (they may have been donated). Gauze-based dressings and long stretch bandages exceeding their shelf life after repetitive washing will be depended upon. There are no trials which have demonstrated more rapid healing with gauze.

After examining the cost and prevalence of non-healing wounds one will call for funding but in vain. The billions of dollars spent on Malaria, TB and HIV have made some impact but there is no end in sight. The small fraction of funding which could be devoted to chronic skin care will not provide governance with more comfortable buildings, vehicles and pocket money. And so wound healing organisations must invest with their little resources in no cost therapies such as washing, moving, elevation and other self-help remedies. They should be focusing on the best ways of providing locally available, sustainable and low-cost care.

There is a long tradition of providing information to donors about the burden of disease. It will be illustrated with the worst cases. In recent times emphasis on capacity to benefit has allowed such donors to believe that the resources they provide are not being wasted.

It is not enough to show pictures of the consequences of injury and disease. Donors like their funding to benefit. A Task Force of the International Society of Dermatology on *Skin Care for All: Community Dermatology* has produced a series of articles as guidelines to skin carers on the theme of capacity to benefit[12]. **Policy point (8). When asking for funding, always**

emphasise the benefit that will be achieved based on past examples.

Accident prevention

In the UK and Australia legislation has made the most significant difference to the prevalence of burns and to road injuries. Some of this is about what to wear such as non-inflammable dresses around a bonfire or crash helmets on the motor bike. Others are about safe practice, such as the Highway Code, safer roads and restricting fireworks to controlled sites.

There is a pyramid of care with governance at the top and the public at the bottom. Hospitals lie in the middle above primary care centres. Wound healing organisations lie high up directing best practice to those below, but they have an equal responsibility to inform and place demands at the top. On the agenda of this journal there should be a 'think tank' on legislation because it can do so much good. **Policy point (9). The knowledge you have should be fed to governance and management who are more ignorant than you the expert. They can do more than you to make the rules for prevention.**

Access and delay

Lack of access to best practice, systemic illness and defects within the wound are headings for examining the causes of delayed healing. Lack of access is the commonest global cause of chronic wounds. One can give many examples but snake bites is one. It is not just delay in reaching best practice, but lack of best practice when one gets there. For snake bites, best practice guidelines not including some no longer recommended interventions are of recent origin. The tourniquet and scarification were commonplace only a decade or two ago. Immobilisation, antivenom and reassurance have become key points. In practice, antivenoms are useful if the snake has been identified and the patient is brought swiftly to a centre providing them. As discussed in a recent workshop on collaboration with traditional health practitioners (THP)[13], the THP is often good at snake recognition and reassurance. THPs should learn about antivenom availability and, if indicated (many snakes are not poisonous), should speed the journey to a centre. Their practice of scarification should cease. Antiseptics, antibiotics and anti-tetanus immunisation and not topically applied dung can be advantageous.

Information technology has increasing potential to reduce the expense of travel by road and air. Even witch doctors have mobile phones and the capacity to photograph wounds. It is extending the range of the expert, from family practitioner to THP and from tertiary hospital team to primary health centre. **Policy point (10). Speed of access to best practice requires long distance investment in collaboration.**

First aid

There are tremendous advantages to having a population skilled in first aid. For one thing they have been shown to have fewer accidents. They are much less likely to be killed at the site of someone else's accident and they are familiar with the priorities of management. Wound healing organisations may not be set up to teach first aid, but they can be its advocates. **Policy point (11). Be an advocate of first aid teaching for all.**

Climate change

Australia's experience of the sun, bushfires and floods has provided a wealth of information for best practice guidelines. Good legislation and a well-educated public have been a consequence. Management of climate change can be contributed to by the healer of wounds in two ways: hazard alleviation and reduction of the burning of fuel. Wearing hats in the sun, crash helmets on bikes, not planting trees close to homes and conserving water are examples. In Africa, water cleansing not by boiling and in Nepal digital photographs of wounds sent by mobile phone or the extended use of Skype are examples **Policy point (12). The wound healer should plan to manage climate change.**

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