Minimal Basic Care for persons affected by Leprosy

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Taking Leprosy into General Health Services. Should it be with Dermatology

- At one time leprosy services were managed by a specialist (vertical) profession. There is still governance from the members of the National and International Leprosy Charities some of which have focused also on TB and/or HIV/AIDS, lymphatic filariasis, malaria.
- General Health Services are mostly understaffed, overloaded, and underfunded.
- The Private sector, Traditional Medicine and the Charitable sector are large but do
- When speaking to Dermatologists about leprosy and saying there is a job for you to do! The following is needed.
  - Early diagnosis,
  - Treatment of the immunological reactions,
  - Management of disability

Are dermatologists qualified?

- Leprosy is in their curriculum
- Their textbooks are mostly excellent
- But they do not see enough to retain their memory
- However when in doubt they do take biopsies
- They are not expert neurologists.
- Many, but not all, are expert wound healers of ulcers{venous,diabetic,pressure etc etc}
What is the problem?

- To diagnose the one case that presents in one year. To diagnose early nerve damage and manage it well.
- This to be done by the General Health Services who have an Essential Health Package of low cost technology suitable for all Care of the Skin. They do NOT welcome and cannot cope with a separate package for each disease.

Not just skin Diseases but conditions needing Skin Care

Thus what is wanted is minimum basic care for persons affected by leprosy as well as by Diabetic foot ulcers, leg ulcers, pressure ulcers burns and many other conditions of the SKIN. Dermatologists and the new generation of Dermatology Nurses are the best trained to teach and deliver this.
An affordable one day course of management of a failing skin.

- It selects treatment that is of low cost and which is helpful for all skin ailments. It omits the complexities of specific named skin diseases. It aims to encourage self effectiveness, discourage the use of ineffective remedies and cosmetics, and to maximize the use of low priced therapies provided by government health services.

Let us focus on ESSENTIAL SKIN CARE

With affordable technology
The General Health Services are overwhelmed by:-

- Common skin infections, bacterial, fungal and parasitic, sexually transmitted infections /HIV/AIDS.
- General wear and tear of the skin
- Tropical diseases: leprosy, leishmaniasis, onchocerciasis.
- Absent skin: pressure, leg & foot ulcers (leprosy, diabetes, Buruli and Tropical)
- Eroded blisters: genetic, infective, autoimmune, drug induced
- Burns and trauma (road accidents and conflict)
- Skin swelling (oedema, from heart failure,dependency, inflammation, filariasis, podoconiosis, cancer and its treatment.)
• Whether it is the newborn, the dying elderly or a traumatic life event there will be someone looking at the skin, touching it and caring for it. There are wrong ways and correct ways of doing this.

The language of Skin Function

• The skin is the largest and most visible organ of the body and like other organs of the body (heart, lungs or liver) it has functions which can be helped to work well but which can fail and need repair.
THE FUNCTIONS OF THE SKIN:

• IT IS A BARRIER
• IT REGULATES BODY TEMPERATURE
• IT SENSES THE ENVIRONMENT
• COMMUNICATION: DISPLAY OR PRIVACY

1) IT IS A BARRIER

• to infections, irritants and allergens,
• Whenever it is penetrated, switches into repair and remove mode. (the epidermis makes and distribute chemicals to stimulate blood supply and to activate recognition and elimination of harmful foreign invaders (immunosurveillance).
• In its extreme form it is ‘Wound Healing’
The Repair Mode (as in Psoriasis* a model for skin wounding) replaces damaged cells, removes noxious agents, and stimulates the dermis with cytokines and growth factors.

*The Koebner phenomenon and contemporary cell biology using

2) It regulates the body temperature

- by sweating and by increasing or decreasing the blood flowing through the skin to maintain optimal body temperature for all functions including wound healing. (inflammation brings the skin up to body temperature) It is helped by the use of clothing, and control of adipose (FAT) tissue, the body’s natural insulation system. Sweat spread by body grease and trapped by hair evaporates, but not in Leprosy.
3) Sensing the environment

- By touch is exquisite in the skin of some animals and enhanced in the blind. Sensory loss is a feature of nerve injury to nerves in the skin and in the spine, and brain. It is lost in unconsciousness or impairment of awareness as well as in the neuropathy of leprosy or diabetes.
- It underlies both itch and pain.

4) Communication and display

“The look good feel good factor”, “love at first sight” or colour prejudice. It is a form of Communication that requires the balance of Privacy versus Display with which every mother presents her child for viewing, and on which every courtship depends, and of which leprosy is the prototype.
Planning with parents their life with a disfigured child, at home, at school, in the playground, for first employment and for marriage.
STIGMA

• Skin failure includes the unwelcomeness of the disfigured of which leprosy and elephantiasis or the severely burned are well recognized prototypes. They are feared and suppressed throughout the animal kingdom. And on stage or screen one leg one eye or a scarred face are used even to depict the “baddies”.

Restoring Barrier Function

• Control of scratching and other traumas.
• Maintaining nutrition.
• Harmful invaders through entry points are managed by water, emollients
• Full range movement including the skin.
• Off-loading
Washing:

- **Water quantity, length of soaking, pH, temperature**

WASHING

- Washing hands requires water free of bacteria at body temperature (cooled after boiling is best but patients with neuropathy need to be aware of the risks of scalding.) Plastic bottles filled with rain water and exposed to the sun for 12 hrs will become pasteurized. There are several technologies for filtering water.

- Cold water, so often recommended, delays healing of wounds. Exposing a wound to the air may allow so much evaporation and cooling that return to body temperature is delayed for several hours and many wound healing processes slow down to ineffective rates.

- Inflammation has a function of warming a wound for the very good reason that most healing takes place optimally at a temperature of 37 C.
• Testing the temperature of water with the elbow is a more reliable test of too cool or too hot than even the normal hand. Tissues that cannot respond to heating by vasodilatation are more likely to be damaged by even warm water. Diabetics and Leprosy patients and all those who do not flush after inducing blanching by pressure are notably vulnerable.

• How much and what soap?: Water poured from a container with a spout onto hands using soap is effective if enough is poured to remove the soap on the hands. Less water may be used in this way than in a communal bowl.

• Wet wrapping is one way to moisturize the skin. A thoroughly damp cloth placed over the skin is covered by a lesser damp cloth.
Soaping

- There are numerous traditional plant soaps. Advantages include acidification of the skin, and it prolongs the washing process. Washing techniques should make water run from the hands to the elbow rather than from the elbow to the hands.
- Alcohol wipes are now distributed in many hospitals because they kill bacteria on the surface of the skin. Some Muslim communities have objections to alcohol use.

- Emollient spreads and retains water and reduces its loss as a droplet. To some extent sebum is distributed to prevent droplet loss when sweating and to facilitate evaporation and hence cooling. Excess droplets of sweat are retained by the hair of the scalp and eyebrows.
- In leprosy both sweat, sebum and eyebrows are reduced.
• One advantage of the ancient prescription of a teaspoon of common salt in a pint of water, is that like seawater, soaking does not remove so readily the fats that make up the barrier in the stratum corneum.
• NB Seawater has more salt than this.

Urine as water in drought conditions

• It must be used when fresh. Bacterial contamination can release irritant ammonia after only a few hours. This can be reduced by acidifying with lemon juice or vinegar (Teaspoonful to a Pint of fluid.)
• Mixed with honey and Neem extracts it has bacteria free activity.
• Urea is good for the barrier function of skin. It encourages uptake of moisture by dry scaly skin and is added( up to 5%) in many commercial moisturizers and higher (10-40%) concentrations descale (keratolytic)
• It is traditionally used for dissolving herbals.
Immobilization versus rest

• Immobilization is necessary only when there is an acute episode of injury (bleeding) and/or a sudden onset of increased inflammation (recognized by an increase in swelling, pain, redness or local heat).
• In the neuropathic ulcer these signs will only be recognized by those patients and carers who have been taught to look for them as requiring urgent attention.
• The same is so for an acute infection such as cellulitis or an injury such as a snake bite. Rest with elevation localizes the injury and prevents systemic spread of the products of injury.

• As with sports injuries early (perhaps a day later) low amplitude movement and elevation hastens recovery and reduces swelling. After an early resting period, it is helpful to encourage gentle movement of injured parts as well as full movement of uninjured parts of the body. Most animals do this by licking a wound, gradually increasing its frequency and intensity.
• Mobilization of neuropathy cannot be guided by the degree of pain and a period of rest may have to be followed by gently increasing the range of movement, adding weight bearing in a graded programme.
• Active full range movement is useful to maintain joint suppleness and to improve circulation. Passive movements should be substituted where active movements are not possible, in order to sustain joint mobility. If a dropped foot cannot be flexed actively a cotton bandage can be looped under the ball of the foot (with knee slightly bent) and the foot pulled up passively.
• Skin atrophies with poverty of movement vis the elderly Shin permanently splintered by the tibial bone

• Where there are many wounds and swollen legs communities become immobile and limbs dependent. Thus in Colonies of persons affected by leprosy leg ulcers are common.
Elevation reduces exudates.

- Elevation and leg movements are the most effective means of controlling venous disease. But in the dependent position compression of the veins by bandages and/or muscle movement against an inelastic sleeve are desirable. The more layers of bandage applied the more compression is provided. Three layers are probably optimal; the deepest dresses the wound, the outer bandage keeps everything in place.
- Dressings, bandages and movement should be a collaboration to reinforce the effectiveness of each.

Walking

- Walking is good for the lymphatic and venous system, provided it is not a shuffle and there is ankle movement by raising up on one's toes. The foot is designed to withstand such forces and has layers of pressure dispersing fat cells and both elastic and stretch resisting fibres distributed to strengthen the foot.
- (In a deformed foot, or one with diminished blood supply, these are less protective and in persons whose gait is defective the stresses are unevenly distributed)
• One of the roles of the patient and carer is to study the most effective footwear and aids to improve the gait. Pressure relief of the site of incipient or actual ulceration requires a knowledgeable team that includes the shoe maker the patient and the carer.
• Trainers and canvas shoes are available cheaply in most towns world wide. They are often suitable footwear.
• In a hot climate, sweating and fungal infections are less of a problem if holes are made above the sole of the shoe at the instep to aerate when walking.
• Offloading prevents ulcers (“bed sore”, diabetic, leprosy, spina bifida)

WHO’s Operational Guidelines
Global Strategy for further Reducing Burden and sustaining Leprosy Control Activities (2006-2010)

• “Most people do not require specially made footwear-the right shoes found in the market can be just as effective, Sports shoes or running shoes are often very appropriate; alternatively , sandals or shoes with a firm under-sole and a soft in sole may be used.”
SKIN FAILURE: Thermoregulation: Surviving cold

- Lowering of body temperature is a common terminal event. Too often the value of a blanket is underestimated. Too often also it is not realized that the earth is cold and the destitute need to lie on some form of insulation. Even a large garbage bag filled with abandoned plastic bags can be lain on to provide some insulation. Wind is a potent cooler and any covering preventing draught will reduce cooling. The Flexed position conserves heat.

Cold and shivering, dehydrated and malnourished, a mother exciled from her home because of leprosy
• Overheating is best managed by evaporation of sweating and washing with the limbs extended. It is aided by fanning and shade from the sun.

• Shade is the use of the tree, umbrella and a hat.
• Protection against flies is also helpfully linked to the use of covering.
• Mosquito nets are also helpful against flies, blackflies and other biting insects.

Skin Failure of Perception: Neuropathy

• Lack of awareness of pain underlies two of the commonest causes of ulceration, pressure over bony prominences such as the heel, hip, sacrum and elbow of those confined to bed by unconsciousness or paraplegia, or so ill that they are unaware of discomfort, as with the diabetic or leprosy associated foot ulcer.
• The most essential management is offloading. Those affected must shift their position very frequently. Lie on soft cushioning (eg Foam rubber at least 9” thick) or have the weight bearing area shifted away from the incipient ulcer.
• Prevention of injury requires that the patient avoids it. It is especially important to teach the significance of impaired sensation. The injury that causes pain to normal skin and consequent withdrawal must be demonstrated as not causing pain and immediate withdrawal in tissue that has lost the sensation of touch and pain.

• Questions should be asked about feelings of numbness, burning feelings like electric shocks or insects crawling on the skin.
• Both the recumbent patient and the seated examiner must be positioned comfortably while examining. A normal healthy part of the body should be touched and the patient, with eyes closed, asked whether they can feel it and point to the site touched. This can be first practiced with the eyes open. Specialists use a 10g monofilament but a ball point pen is most commonly available. Repeat at several sites and indicate on a drawing of the affected limb, where the skin was tested and where sensation is present or lost.
The patient should be trained to avoid injury and to inspect daily for signs of injury. The family and friends can identify risks and plan how to avoid them. Training to care for wounds in numb skin includes recognizing the cause of an injury and then avoiding and protecting against it in future. It also includes knowing and mapping the sites of numbness and identifying risks such as pressure points and activities or inactivities tending to cause excess pressure, burns or pricks. Numb skin needs to be kept supple by washing, drying, oiling and gentle massage.

1) Wash and oil, 2) keep moving (if possible through a full range of all the movements the body is capable of.) The theme that injuries must be prevented, signs of injury looked for and treated early is applicable to the hand as it is to the foot in diabetes and always has been in leprosy management. Income generation especially needs expert advise based on viewing every activity of the affected hand.

Gripping is the most basic function of the hand normally assisted by sweating and slight thickening of all the components of the skin, (epidermis fibres and fat.) The skin surface of the hand with nerve injury is dry, and when calluses develop it cracks, and is less supported by elastic fibre and fat pads.
Flexed fingers that cannot straighten actively, should straighten passively while the skin is being oiled.

- Instructions on hand care should include
  - a) Watch where you put your hands.
  - b) Use thick cloth holders to avoid burns.
  - c) Use gloves when working with the hands with sharp objects or requiring hard usage.
  - d) Inspect for blisters.
  - e) Stop for rests
  - f) Change your employment to avoid risks if possible.

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**STIGMA, COMMUNICATION FAILURE, BEING UNWELCOME**

- Fear and lack of understanding of death, disease and disability, lead people to taunt the disfigured, assault them, or run away and hide from them.
- Beliefs surrounding the illness are powerful factors.
• To ensure being welcome and to improve self esteem it is important to find alternative ways of being admired and wanted. For a disfigured child at school properly managed success at work and play is the skill of a good teacher. Carers of all kinds can also learn such skills and especially if they involve families and the community, carers can improve the quality of life of the disabled.
• Begging is one way to generate income but it does not enhance self esteem nor are the earnings very great and sustainable. Beggars trained to care for and given a goat may change from a perpetual supplicant to a proud owner within a community.
Proud owners of a goat no longer supplicant

- Improving self esteem, learning how to generate income, improving access to community support are aspects to be considered. It includes assessment of capacity but also of the needs of the community. Making goods that no one wants is not the best way to earn income.
• Listen to the patient’s story and opinion, increase awareness and understanding but reduce anxiety. This may need to be a lengthy process and repetitive. It should be extended to family members and carers. It aims to encourage self help but also explains what needs to be done to bring satisfaction to the patient, the carer and the community.

• In studies of stigma, four themes consistently emerge
  • 1) Family rejection and the break up of family relationships. Banning from a family wedding.
  • 2) Shame and disgrace (and even abuse) attached to something regarded as socially unacceptable.
  • 3) Dependency, safety and refuge found at a charitable home. For example ‘this organisation treats me with respect and affection and takes care of my wants.’
  • 4) Shared spiritual beliefs (including preparing for a better journey after life,) are associated with seeking social support and improved mental health.
• The carer of persons that look different must encourage acceptance; people are worthy of respect dignity and appropriate treatment.

• Tackling discrimination and human rights by talking to police, politicians and employers will help, as well as forming pressure groups of family, patients and their doctors. Finally make contact with the media such as the local paper or provide a talk for the radio. A clear message is often

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**Nutrition**

• The skin needs protein, iron Vit B Vit A vit C. The following show school children who have been trained to care for the soil and even slum dwellings can grow (vitamins)
One of the most powerful tools for change- the children
Cost of Dressings and Bandages

The following show usage and local generation of much needed dressings at low cost.
In need of cheap dressings
Support Government Essential Health Packages by teaching all to use what Governments make available.

- Basic drugs for a skin programme in Malawi. Benzyl benzoate, Whitfields ointment, iodine and povidine iodine, chlorhexidine, paraffin gauze, vaseline, gauze, crepe bandages, calamine lotion with or without sulphur, gentian violet, coal tar, chlorpheniramine and promethazine, silver sulphadiazine, prednisilone, a full range of antibacterials for oral intake.