Supplement 1: Key differential diagnoses for bacterial skin and soft tissue infections (SSTIs)

This supplement complements the recommendations in the ACE Clinical Guideline "*Bacterial skin and soft tissue infections – diagnosis and antibiotic prescribing"*. It aims to summarise the key differential diagnoses for bacterial SSTIs. Please note that this list is non-exhaustive and aims to capture the most significant differential diagnoses in local practice. Information is drawn from available literature and local expert experience. Clinicians may refer to DermNet® for pictures of the diagnoses and differential diagnoses below.

Table 1. Examples of differential diagnoses for impetigo

Diagnosis	Differential Diagnoses	Distinguishing features
Impetigo[1]		Weeping and golden yellow crusts.
	Candidiasis[2, 3]	Macerated erythematous papules/plaques with satellite pustules. Usually on the groin or back.
	Infected/Impetiginised eczema	Physical features of impetigo on a background of eczema.
	Infected scabies[4, 5]	Itchy excoriated papules in the web spaces, scalp, genitals and skin folds. Features of impetigo / secondary bacterial infection.
	Staphylococcal Scalded Skin Syndrome[6]	Superficial blistering skin condition with widespread redness and peeling.
	Tinea[7]	Annular scaly rashes. May be on the feet, groin, face or scalp.

Table 2. Examples of differential diagnoses for ecthyma

Diagnosis	Differential Diagnoses	Distinguishing features
Ecthyma[8]		Deeper infection compared to impetigo and causes ulceration of the skin.
	Arterial ulcers[9, 10]	Tend to occur in the lower limbs. Occur due to inadequate blood supply to the affected area. Peripheral pulses may be absent, and the limb may be pale and cold to the touch.
	Decubitus ulcers (bedsores)[11]	Ulcers as a result of prolonged pressure. Usually occur on the back, sacrum or heels.
	Diabetic ulcer[12, 13]	Usually multifactorial causes (neuropathic/peripheral vascular disease) and located on shins and feet. May be superinfected.
	Ecthyma gangrenosum[14-16]	Most frequently caused by *Pseudomonas aeruginosa*. Necrotic ulcers with greenish exudate and sometimes haemorrhagic bullae. Typically occurs in immunocompromised individuals.
	Frictional or traumatic ulcers	Ulcers or erosions resulting from friction or trauma, e.g. from tight bandages or restraints.
	Malignant ulcers[17, 18]	Cancers on the skin (mainly non-melanoma) may arise from chronic wounds; basal cell carcinoma may ulcerate (rodent ulcers).
	Pyoderma gangrenosum[19, 20]	Chronic ulcer with undermined edges that have a gun-metal appearance. Lesions may be precipitated by pathergic response.
	Vasculitic ulcers[21]	Shallow, open sores which may be surrounded by purpura, livedo reticularis (net-like skin discoloration), and atrophie blanche (white, star-shaped scars). Haemorrhagic blisters may precede the ulcers.
	Venous ulcers[22]	Ulcers on a background of venous stasis. Usually at the ankle or medial garter region, with surrounding brownish discolouration (hemosiderin deposition) or venous eczema seen on the skin.

Table 3. Examples of differential diagnoses for erysipelas/cellulitis

Diagnosis	Differential Diagnoses	Distinguishing features
Erysipelas/cellulitis[23, 24]		Erysipelas is more superficial and involves the lymphatic system. Presents as distinct, raised, and shiny erythematous plaques with clearly defined borders. Cellulitis is a deeper infection with less defined borders.
	Acute gouty attack[25, 26]	Can cause pain, redness and inflammation. Most commonly affects joints of the first metatarsophalangeal (big toe), knees, ankles, or midfoot.
	Cutaneous vasculitis[27, 28]	Redness, purpura and blistering of the skin.
	Insect bite-induced hypersensitivity[29, 30]	Persistent itchy bump due to hypersensitivity reaction at site of bite from insects such as mosquitoes (e.g. Skeeter syndrome) or fleas. Most often occurs in children.
	Lymphedema[31]	Swelling due to lymphatic system blockage causing skin inflammation.
	Mycobacterial cellulitis[32, 33]	May be caused by non-tuberculous mycobacteria due to skin inoculation. High index of suspicion based on exposure history and lack of improvement following usual antibiotics.
	Necrotising fasciitis[34, 35]	Pain out of proportion to the physical findings, dusky discolouration, or bullae on the skin Refer to Emergency Department
	Panniculitis (e.g. erythema nodosum)[36]	An inflammatory condition causing tender, red, or purple subcutaneous bumps, usually on the shins. May be due to various aetiologies.
	Scarlet fever[37, 38]	Caused by Group A streptococcus and occurs primarily in childhood. Generalised sandpapery erythematous rash. Patient may also have 'strawberry tongue' and exudative tonsillitis.
	Severe contact dermatitis (irritant or allergic)[39]	Usually due to contact with an irritating substance or medication the patient may be allergic to (e.g. traditional herbal poultice). Causes well-demarcated redness and eczema of the skin which is itchy and inflamed.
	Venous stasis dermatitis[40, 41]	Chronic hyperpigmented eczematous rashes on the lower limbs and medial malleolar areas. Associated with varicosities.

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