FACEBOOK LIVE

OVERCOMING THE FEAR OF **WOUND INFECTION**

THURSDAY
29 JULY
7.30-8.30

LUXMI DHOONMOON
NURSE CONSULTANT
TISSUE VIABILITY

FACEBOOK LIVE

Journal of Community Nursing
JCN

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OBJECTIVES

To:

- Identify infection in the wound bed
- Differentiate between stages of colonisation/infection
- Understand the importance of managing infection effectively
- Discuss the use of an enzyme alginogel as an antimicrobial

WOUND INFECTION — FACTS

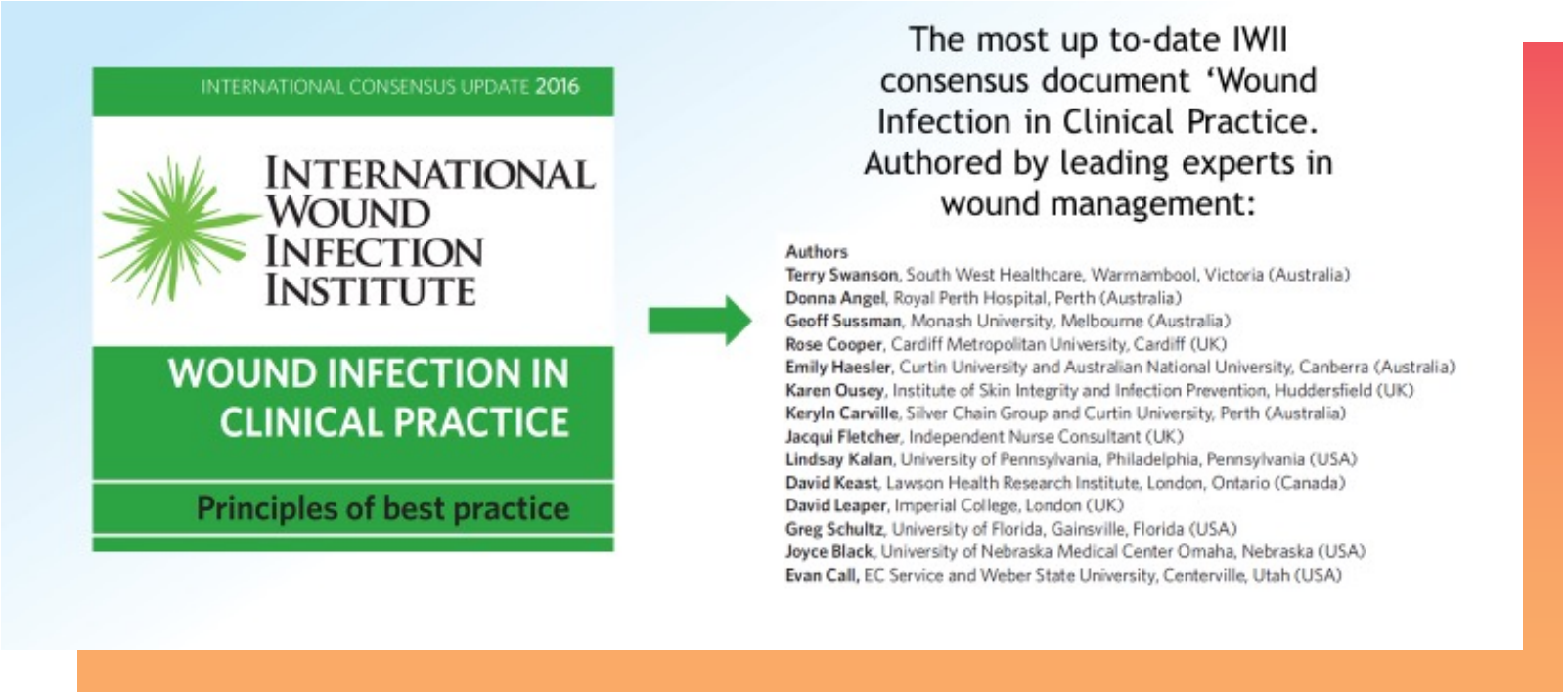
- Painful for the patient
- Leads to increased morbidity
- Cause of mortality
- Frequent risk of hospitalisation
- Increasing risk to society — antimicrobial resistance
- Clinical management problem

SIGNS AND SYMPTOMS OF INFECTION

Textbook criteria of signs of infection…

- Pain
- Abscess
- Confusion
- Cellulitis
- Malodour
- Erythema
- Delayed healing/ Wound breakdown
- Changes in granulation tissue
- Induration or oedema at wound edges
- Exudate – colour/texture/volume

INTERNATIONAL CONSENSUS DOCUMENT



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Ref. Swanson, T. et al. International Wound Infection Institute (IWII) Wound infection in clinical practice. Wounds International. 2016

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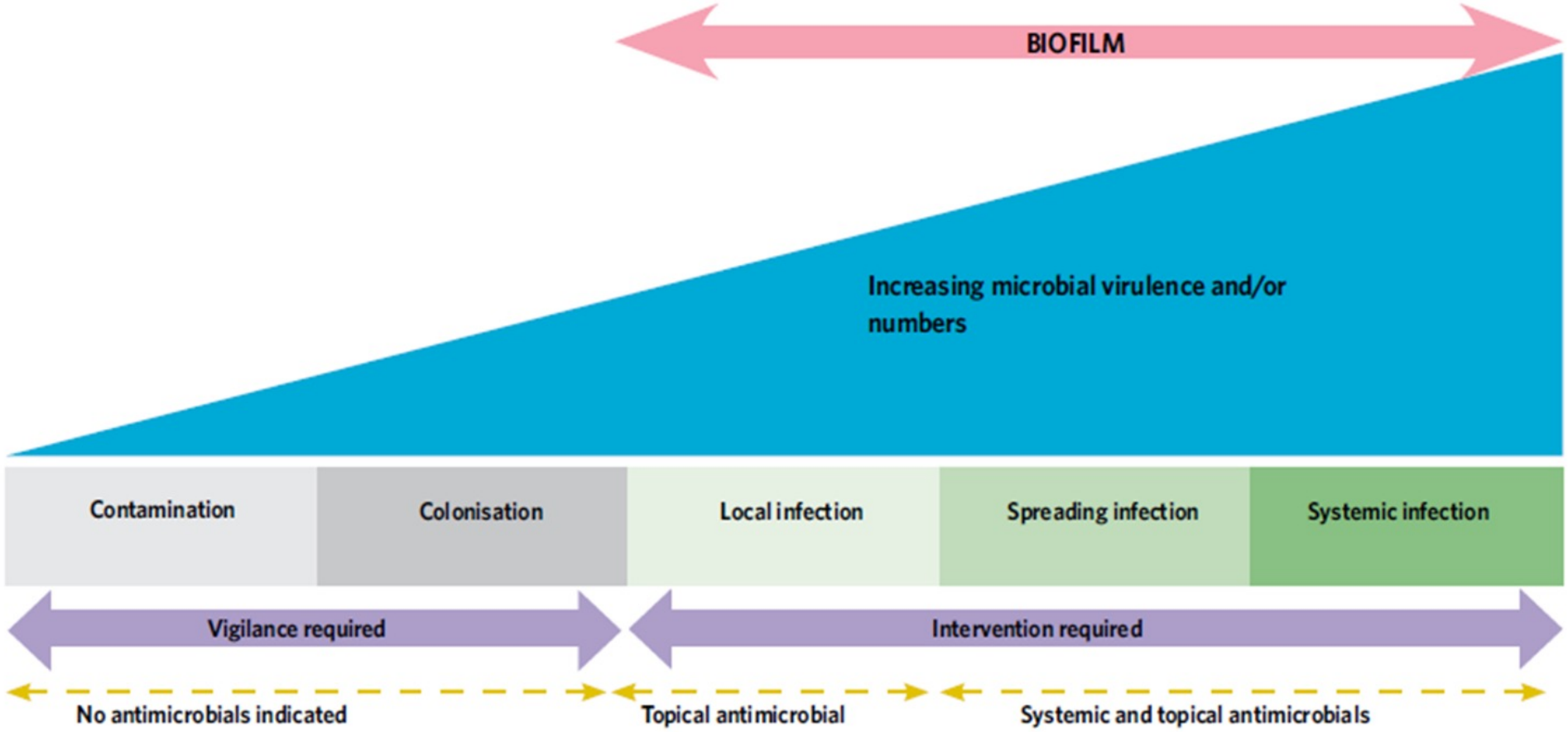
STAGES IN THE WOUND INFECTION CONTINUUM



Ref: https://woundinfection-institute.com/wp-content/uploads/2019/07/evolution-wound-infection-continuum.pdf

COLONISATION

- All chronic wounds are colonised (leg ulcers, pressure ulcers and diabetic foot ulcers) up to the point of healing
- Do NOT over treat with antimicrobials

LOCAL INFECTION

- Wounds will not heal despite ‘standard care’
- It is painful
- Strikethrough
- Local infection is contained in one location, system or structure

SPREADING INFECTION

- The invasion of the surrounding tissue by infective organisms that have spread from a wound
- Microorganisms proliferate and spread to a degree that signs and symptoms extend beyond the wound border

SYSTEMIC INFECTION

- It affects the body as a whole, with microorganisms spreading throughout the body via the vascular or lymphatic systems

- Systemic inflammatory response, sepsis and organ dysfunction are signs of systemic infection

OVERCOMING WOUND INFECTION

Once assessed and identified as being infected, a wound can be treated using the following methods:

Systemic antibiotics	These should be reserved for appropriate use
Topical antimicrobial agents	Useful in managing bioburden
Non-medicated dressings	Useful alternative to manage wound bioburden

Examples of antimicrobials listed are the presenter's preferred selection based on local formulary: iodine, silver, honey, polyhexamethylene biguanide (PHMB) and enzyme alginogel

WHAT KIND OF WOUNDS DO WE SEE?

- Moisture lesions
- Skin tears
- Surgical wounds
- Fungating wounds
- Adult/child wounds
- Trauma wounds
- Pressure ulcers
- Leg ulcers
- Diabetic foot ulcers
- Burns (inc. radiotherapy burns)

MANAGING INFECTION USING ANTIMICROBIALS

INTERNATIONAL CONSENSUS UPDATE 2016

INTERNATIONAL WOUND INFECTION INSTITUTE

WOUND INFECTION IN CLINICAL PRACTICE

Principles of best practice

Table 7: Topical wound infection therapies

Antimicrobial agent	Type	Biofilm efficacy	Guidance for use
Enzyme alginogel	Alginate gel with two enzymes: ■ Lactoperoxidase ■ Glucose oxidase	■ Prevents formation of biofilms at concentration M0.5% (w/v)[112,113] ■ Inhibits growth of established biofilms at higher concentrations ■ Does not disrupt biofilm biomass[112,113]	■ Concentrations of alginate of 3% and 5% depending on level of exudate[112,113]
Iodine (povidone and cadexomer)	■ Solution ■ Impregnated wound dressings ■ Powder and paste	■ Inhibits development of new biofilm[110, 114] ■ Eradicates young biofilm colonies[110, 115] ■ Significantly reduces mature biofilm colonies[110, 114]	■ Contraindicated in individuals sensitive to iodine or with thyroid or renal disorders[110] ■ Contraindicated in those with extensive burns[110]
Honey	■ Medical grade ■ Honey impregnated dressings	■ Inhibits biofilm growth[116-118] ■ Reduces biofilm colony formation[119] ■ Inhibits quorum sensing of biofilm, thereby reducing ability to proliferate[120]	■ Select products that have been gamma irradiated[119] ■ Leptospermum species is more effective than other types[119]
Silver	■ Salts (e.g. silver sulphadiazine, silver nitrate, silver, sulphate, silver CMC) ■ Metallic, e.g. nanocrystalline, silver-coated nylon fibres ■ Impregnated wound dressings	■ Denatures existing bacterial biofilm in concentrations over 5 μg/ml120	■ Change more frequently in wounds with heavy exudate ■ Avoid in individuals with silver sensitivities[121]
Ionic silver combined ethylenediamine-tetraacetate (EDTA) and benzethonium chloride (BEC) (antibiofilm agents)	■ Carboxymethylcellulose gelling dressing impregnated with ionic silver enhanced with EDTA and BEC	■ Combines antibiofilm and antimicrobial components that work in synergy to disrupt biofilm and expose associated microorganisms to the broad-spectrum antimicrobial action of ionic silver[122] ■ Eradicates mature biofilm within 5 days[124] ■ Prevents biofilm formation[124] ■ Associated improvement in healing rates[125]	■ Change more frequently in wounds with heavy exudate ■ Avoid in individuals with sensitivities to silver, EDTA or BEC[123]
Surfactant	■ Concentrated surfactant gels with antimicrobial preservatives	■ Prevents biofilm formation[126] ■ Increases antibiotic efficacy ■ Eradicates mature biofilm	■ Can be used between and post-debridement to prevent re-establishment of biofilm ■ May require daily application for the first few days

Ref. Swanson, T. et al. International Wound Infection Institute (IWII) Wound infection in clinical practice. Wounds International. 2016

WHAT IS FLAMINAL®

Flaminal® consists of three essential components for wound healing

1. **Debriding gel**

   The gel dissolves necrotic tissue and fibrin and absorbs them from the wound bed

2. **Absorbent alginate**

   It contains an absorbent alginate that helps with the absorption of debris, bacteria and excess exudate

3. **Antimicrobial enzyme system**

   It contains an antimicrobial enzyme system that protects the wound against microbial colonisation and infection

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https://www.flenhealth.com/products/instruction-of-use

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WOUND BED PREPARATION... THE FACTS

Flaminal® can be used in all five aspects of the T.I.M.E.S. paradigm

Tissue	Continuous autolytic debridement
Infection	Antimicrobial protection
Moisture	Moist wound healing and absorbs exudate
Edge of wound	Safe for skin and skin tissue and protects wound edges
Surrounding skin	Does not damage surrounding skin

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(Beele et al, 2012; White et al, 2014; Jones et al, 2018)

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CASE STUDIES

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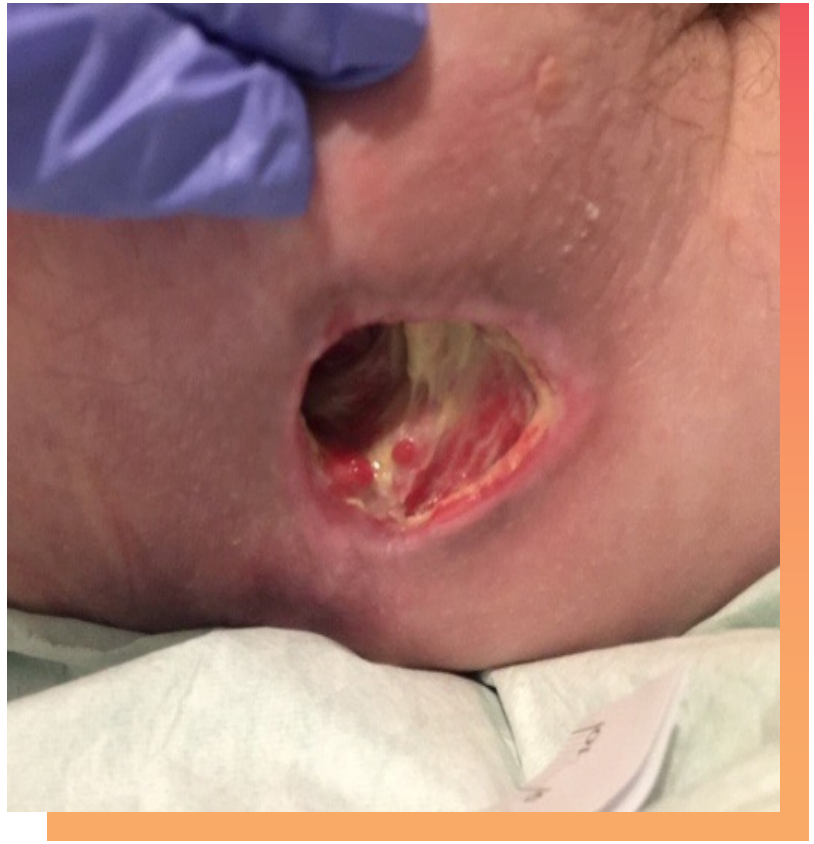
CASE STUDY ONE — PRESSURE ULCER



Patient:

- 50-year-old female, still in employment
- Multiple sclerosis, wheelchair bound

Wound:

- TVN initial assessment in community: category 4 pressure ulcer to left buttock
- High volume of exudate, malodour, no pain
- Combination of slough and unhealthy granulation in base and bone palpable
- Surrounding skin unaffected but fragile

Treatment aim:

- Reduce slough and bioburden
- Manage exudate effectively
- Improve patient's quality of life (QOL)
- Enzyme alginogel started to reduce slough and manage exudate

CASE STUDY ONE — PRESSURE ULCER

4 weeks later

Few months later

CASE STUDY TWO — FUNGATING WOUND

Patient:

- 93-year-old female
- Atrial fibrillation
- Hypothyroidism
- Hypertension
- Squamous cell carcinoma (SCC) spreading to left side of face

Wound:

- SCC wound — fungating to left side of face
- High volume of thick exudate
- Malodorous
- Surrounding skin affected and friable — bleeds on contact
- Several bleeds as scab gets caught in dressing

Treatment aim:

- Reduce exudate and malodour
- Manage friable areas more effectively
- Improve patient's QoL
- Enzyme alginogel started

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CASE STUDY TWO — FUNGATING WOUND

Self-care

- Covid pandemic period
- Not keen for nurses to attend regularly
- Works with grandson who wanted to do something for patient
- Teach him how to do simple wound care
- Gentle cleaning with antimicrobial wash mitt — no rubbing
- Apply Flaminal® Forte daily to all affected areas
- No secondary dressing was required

After 2 weeks

- Scabs gently coming off — no bleeding
- Malodour reduced
- Minimal exudate leaking on face
- Able to eat better, as no malodour

After 4 weeks

- Eye was cleared and slightly opened
- Both grandson and patient were in tears
- No exudate at all

CASE STUDY THREE — EXTREME MASD

Patient:

- 87-year-old female
- Type 2 diabetes
- Hypertension, disc fusion
- Reduced mobility, recurrent falls, needs two people to transfer using equipment

Wound:

- Moisture-associated skin damage (MASD)
- Bleeding due to friable skin
- Incontinent of both urine and faeces
- Barrier cream used, carers educated on appropriate skin care regimen
- Rapid deterioration after episode of loose stool
- Surrounding skin affected and fragile

Treatment aim:

- Improve skin integrity and ease of application for carers due to incontinence
- Improve patient's QoL, ability to sit out for meal times
- Enzyme alginogel started

CASE STUDY THREE

4 weeks later

8 weeks later

CASE STUDY THREE

- Antifungal properties
- Acts as a protective barrier
- Non-cytotoxic: hence can be left on healthy skin without causing maceration

CASE STUDY FOUR — DIABETIC FOOT ULCER

Patient:

- 64-year-old male
- Type 2 diabetes for over 15 years
- Ischaemic heart disease, nephropathy, retinopathy and peripheral vascular disease

Wound:

- DFU following a neuro-ischaemic amputation of left forefoot
- High volume of exudate
- Deep sloughy wound which encompassed the whole of his forefoot to the bone
- Surrounding skin unaffected

Treatment aim:

- Reduce slough and bioburden
- Manage exudate
- Managed with simple inexpensive dressing to keep wound covered
- Enzyme alginogel started to reduce slough and manage exudate

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CASE STUDY FOUR — DIABETIC FOOT ULCER

May 2013

June 2013

CASE STUDY FOUR — DIABETIC FOOT ULCER

For DFU the emphasis is on:

- Radical and repeated debridement
- Bacterial control
- Careful moisture balance to prevent maceration
- Flaminal® Forte is suitable for DFU, as it is indicated for moderate to highly exuding wounds

WHY FLAMINAL®?

- Offers antimicrobial protection
- Minimal risk for resistance development
- Debrides and removes necrotic tissue
- Self/shared care
- Ease of use in small cavities, e.g. perianal abscess/pilonidal sinus/hard-to-reach wounds
- No cytotoxicity = safe for skin tissue and protects wound edges
- Moist healing environment
- Manages exudate

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(White, 2006; De Smet et al, 2009; Beele et al, 2012; Jones et al, 2018; FlenHealth, 2021)

www.flenhealth.com/fileadmin/Products/instruction_leaflets/FlaminalForte_EN_FR_NL_DE_IT.pdf

www.flenhealth.co.uk/fileadmin/Products/instruction_leaflets/FlaminalHydro_EN_FR_NL_DE_IT.pdf

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Visit our website: https://www.flenhealth.co.uk/ or email us at info@flenhealth.com

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