



Welcome to Coloplast/Orthosurge CPD Evening

30 March 2016

Agenda

Time	Topic	Presenter
18h00-18h15	Orthosurge/Coloplast Welcome and Introduction	Mr Oremeng Motshegare – General Manager Mrs Renette Julies – National Key Accounts Manager
18h15-18h25	Botswana wound care-needs and overview	Dr. Mmoniemang Makgasa – PMH Surgeon
18h25-19h20	Managing Wound Infection and a look at Antibiotic Stewardship	Sr. Helen Loudon - RN Independent Infection Prevention and Quality Mx Specialist Healthcare Risk Consultancy & Training
19h20-19h45	Pressure Ulcers: management ,prevention and the way forward	Kavitha Ramkhelawan – Wound Care Market Manager
19h45-20h00	Wrap up and closing	Renette Julies/Oremeng Motshegare

Welcome Renette Julies, Oromeng Motshegare

Botswana Wound Care Needs :Dr Moneimang Makgasa



Wound Care Needs in Princess Marina Hospital

Dr Moneimang Makgasa
PMH General Surgeon



Princess Marina Hospital



- 567 bed capacity

In 2015

- 27,000 Admissions
- 2439 Elective operations
- 604 Emergencies
- SOPD
 - 4,500 patients seen



Wound Care Needs

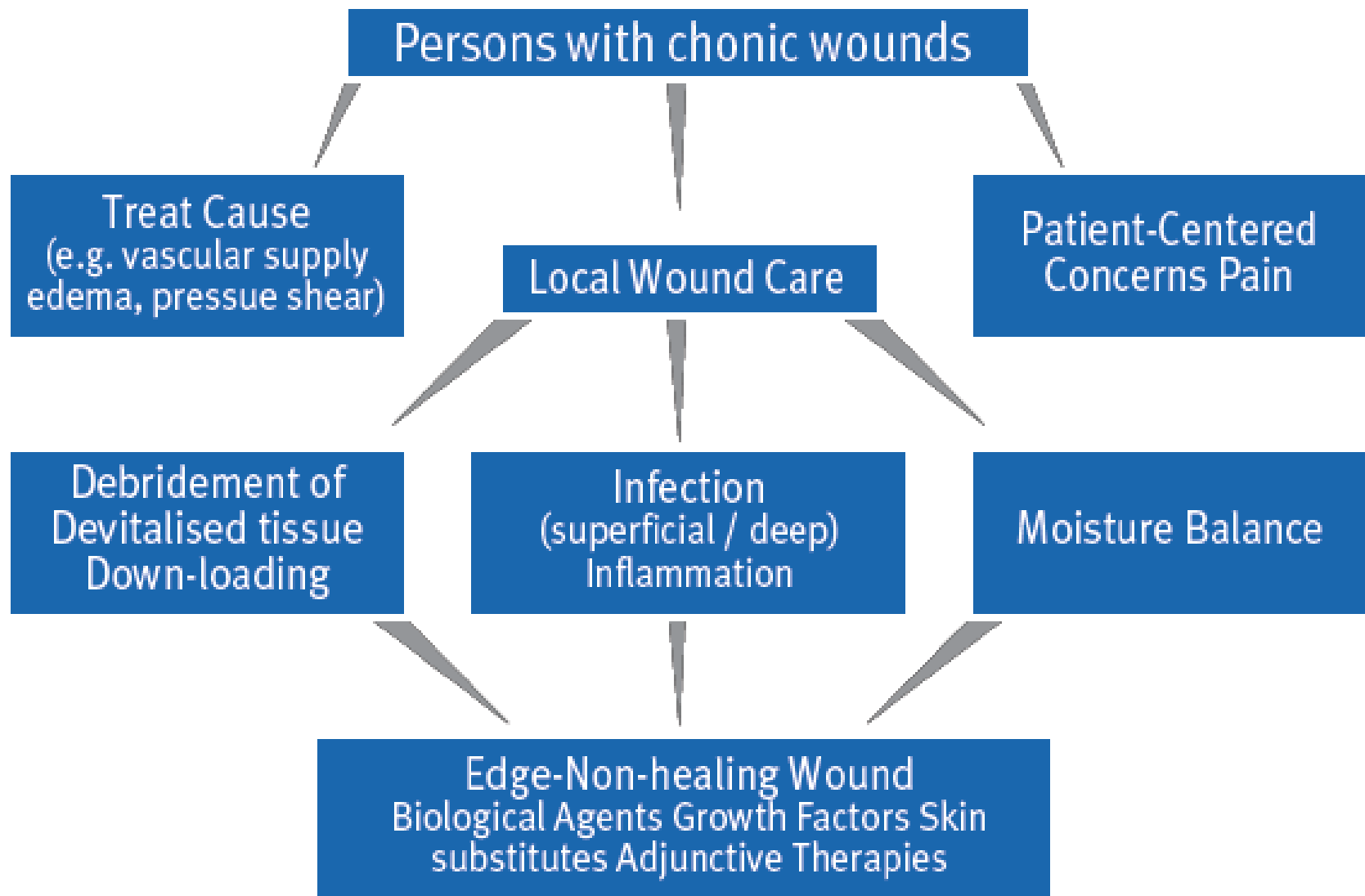
- Wound care is the most common intervention in health care units
- Acute wounds vs. Chronic Wounds
- Chronic Wounds are recalcitrant to healing and leads to
 - Disability
 - Burden to patient and health care system



Chronic Wounds

- In Diabetes, 2-3% of patients develop foot ulcer annually
- 1% of adults population develop venous leg ulcers
- As society ages pressure ulcer incidence rises
 - Wound Healing Southern Africa 2008; 1 (1):29-34

Wound Bed Preparation Paradigm





The Cause



- Surgically Created Wounds
- Burns
- Diabetes
- Stroke Care
- HIV and Peripheral Neuropathy
- TB Spine
- Spine Trauma



Acute Admissions in Surgery

Aug 2015-Feb 2016	Male Surgical (N~ 900)	Female Surgical (N~ 720)
Burns	27 (3%)	2
Ischaemic limb/PVD	4	4
Dry gangrene	16 (1.7%)	8
Diabetic Foot /Ulcers	3	4
Non-healing ulcers/Venous	3	3



Pressure Ulcers

March 2016	Pressure Ulcers
Spinalis	6
Orthopaedics	11
Medical	9
ICU	2



Wound Care Needs

- Audit in UK
 - Fairly high incidence of non-healing wounds
 - Problem of delayed healing highlights the importance of effective diagnosis and appropriate treatment
 - Drew et al 2007

Managing Wound Infection and a look at antibiotic stewardship: Sr Helen Loudon

Sr Helen Loudon

PROFESSIONAL QUALIFICATIONS

1976-1978: Diploma in General Nursing, Andrew Fleming Hospital, Harare, Zimbabwe.

1979: Diploma in Midwifery, Addington Hospital, Durban.

1984-1985: University Diploma in Nursing Education, University of KwaZulu Natal, Durban Campus.

2002: Certificate Course Contemporary Wound Management, University of Hertfordshire, UK.

2003: HIV/AIDS Counselling Skills, Lifeline, Durban.

2004: Certificate in Infection Control, LHC College of Nursing/N.M.M.U

2003: Certificate Course Advanced Leg Ulcer Management, University of Hertfordshire, UK.

PROFESSIONAL ACHIEVEMENTS

- 1978: Gold Medallist General Nursing
- 2002: Implementation of an out patient Wound, Diabetic Foot Ulcer & Stomaltherapy Clinic, Westville Hospital, serving the greater Durban area and providing support and expertise to all regional hospitals, General Practitioners, Private Nursing Practitioners and surgeons. Recipient of quality award.
- 2003-2009: Implementation of a hospital MRSA (methicillin resistant Staphylococcus aureus) control programme & pilot research study, of which an evaluation and the outcomes there from were subsequently published in the SA Journal of Critical Care (July 2010).
- 2004: Nominated for the Life Healthcare National Quality Leadership Award.
- 2006: Co-convened a national Wound Care and Stomaltherapy Symposium, Durban.
- 2011 to present: published infection control and oncology related articles for national nursing journal.



Integrated and risk based wound management practice

CPD Meeting Gaborone Botswana 30.3.2016

A CLOSER LOOK AT INFECTION IN CHRONIC WOUNDS

**factors driving microbial resistance and
recommendations for safer clinical practice**

Helen Loudon

Independent Infection Prevention &
Advanced Wound Management Practitioner

Ethical Disclosure

- Independent Nursing Practitioner and IPC Consultant
- Teaching content is generic ie. any reference to commercial products is for illustrative purposes only, and should not be interpreted as endorsement
- Speaker honoraria – BSN Medical, 3M Medical, B Braun Medical, SAFMED, KCI Medical, Systagenix, Coloplast, Smith & Nephew, Safarmex
- Current Advisory Board participation – Wound Healing Assoc. SA (WHASA), Coloplast, Safarmex and B Braun Medical

Metabolomics of Microbial BIOFILM



Fact ...

There are > 1 million genes in the human microbiome of which only +/-23,000 are human... *the rest are microbial!*

The development of resistance is a completely natural and ancient phenomenon and *is intrinsic to all micro-organisms*

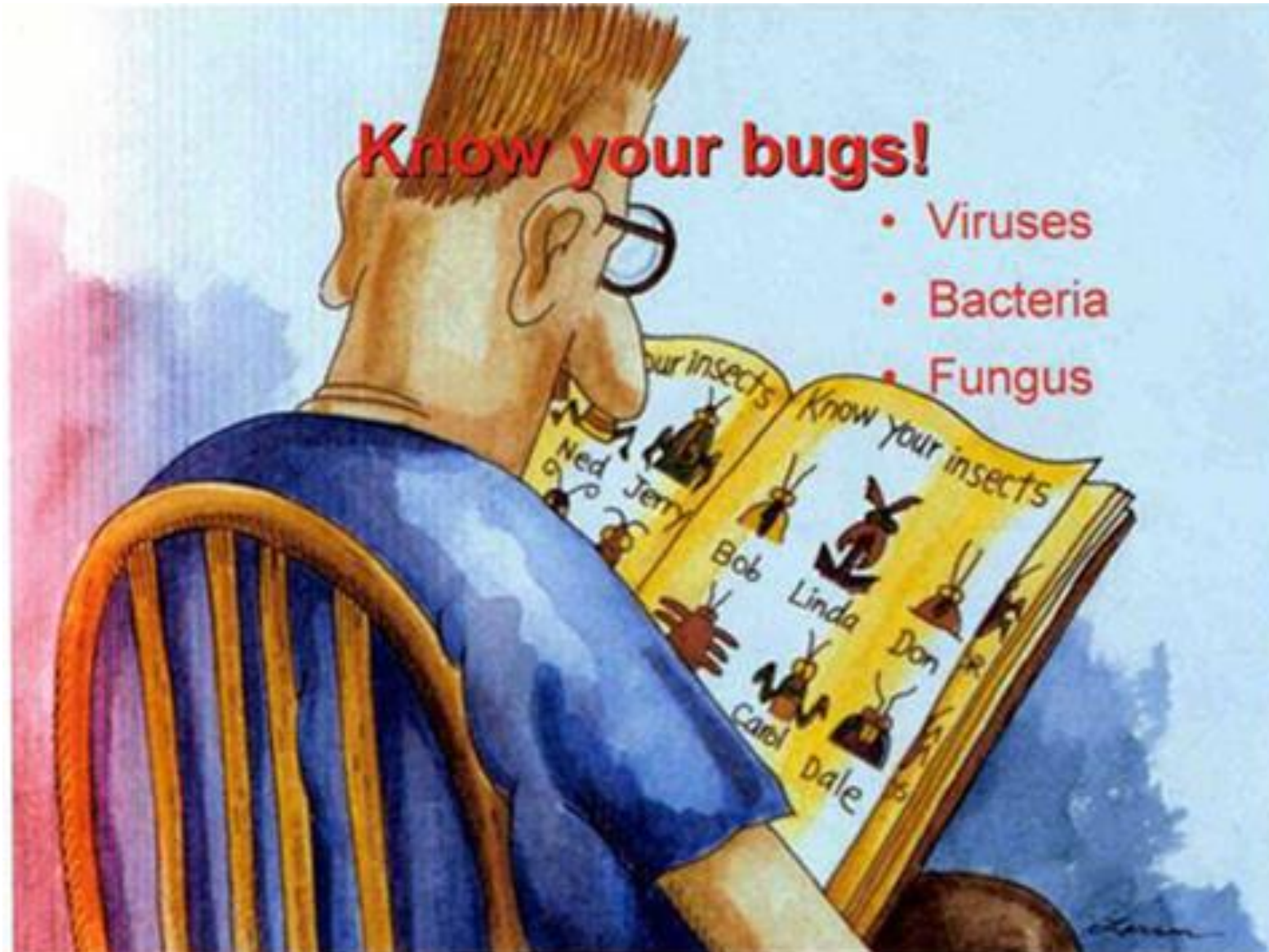
Integrating Infection Control with chronic wound management



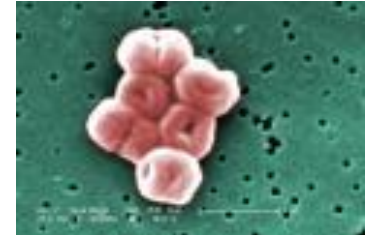
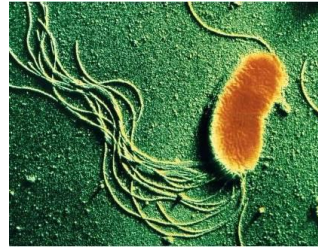
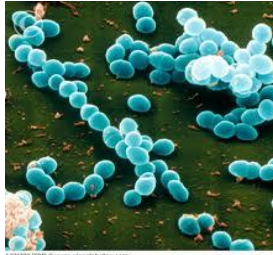
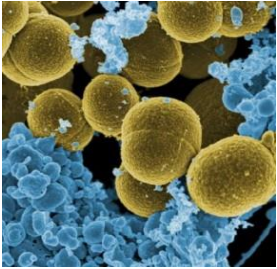
- ✎ **All wounds are colonised** – bacterial populations in chronic wounds are **polymicrobial**, and will also be representative of the surrounding environment
- ✎ The presence of microorganisms in a wound does not in itself define an infection – **routine wound swabs are not reliable nor recommended**
- ✎ Always consider the whole clinical picture - liaison with a clinical microbiologist is advisable before prescribing antimicrobials based on culture results
- ✎ It is important to recognize that there is a fluctuating continuum in the **wound-microbiology 'lifecycle'**....therefore
- ✎ **'Stalling'** of the healing process or failure to heal within the expected time frame, may suggest **critical colonisation or infection**



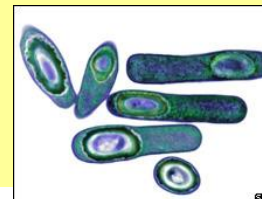
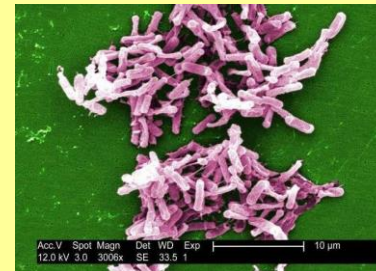
Which microbes are usually involved?



The chronic 'microbiome' - common colonisers



- 💣 Enterobacter species (eg. *E. coli*, *Serratia* sp)
- 💣 Staphylococcus aureus (MRSA & CA-MRSA)
- 💣 Clostridium difficile
- 💣 Klebsiella sp
- 💣 Acinetobacter sp
- 💣 Pseudomonas aeruginosa
- 💣 Enterococcus sp



C. Diff spores



Proteus sp.



Antimicrobial resistance - AMR

“Resistance of a micro-organism to an antimicrobial drug which was originally effective for treatment of infection/s caused by it”

- **bacteria**
- **viruses**
- **fungi**
- **parasites/protozoa (eg. Malaria)**



- **INTRINSIC** resistance - a natural and ancient phenomenon
- **ACQUIRED** resistance - influenced and exacerbated by *‘selective pressure’*

The nature of the problem



1. Empiric therapy without confirmation of infection, cultures, sepsis markers etc
2. Inappropriate agent choices/combos
3. Concurrent cover ('double' or more)
4. Sub optimal dosage
5. Failure to assess & de-escalate
6. Excessive duration of course
7. Inappropriate intra-operative surgical prophylaxis
8. **Inappropriate use of antibiotics in wound care, including topical agents**

Examples of broad spectrum Gram +ve cover

- Linezolid
- Teicoplanin
- Vancomycin

Examples of Gram –ve (GNB) cover

- Piperacillin/tazobactam
- Cefepime
- Imipenem
- Meropenem
- Ertapenem
- Ciprofloxacin
- Levofloxacin

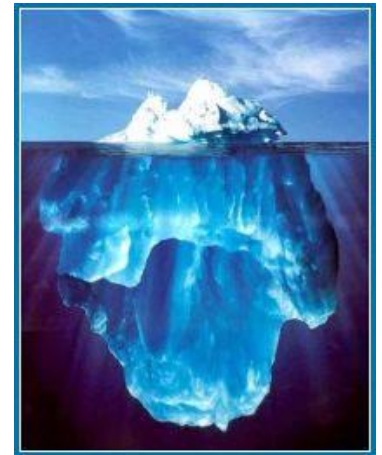
Anti Fungal cover

- Amphotericin
- Fluconazole

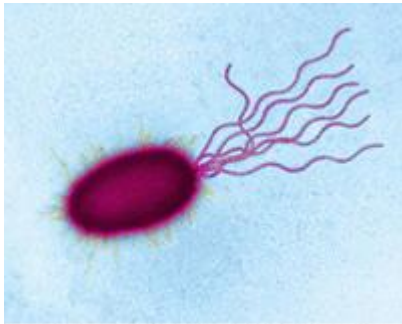
Studies indicate that >50 % of antimicrobial use is inappropriate or unnecessary!

Additional factors driving antibiotic resistance

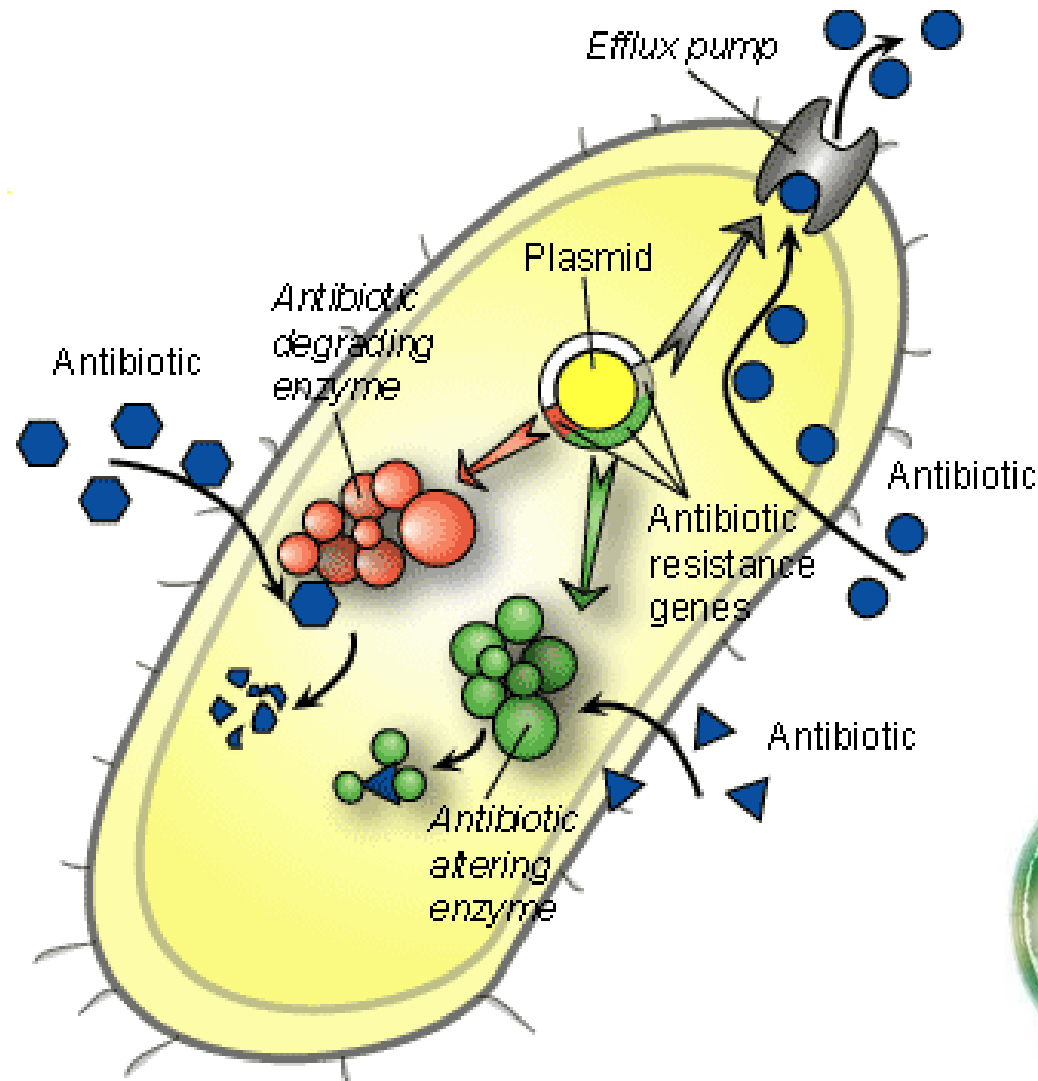
- ❖ Surveillance systems are weak or absent
- ❖ Poor clinical governance wrt procurement processes, cleaning and HCRW Mx
- ❖ Use of antimicrobials in animal husbandry
- ❖ Systems to ensure quality and/or supply inadequate
- ❖ Over the counter availability of antibiotics
- ❖ Economic & social – poverty, working mothers, crèches
- ❖ GP's: patient pressure/perverse incentives
- ❖ Medical tourism
- ❖ Interdisciplinary 'power struggles' and medical egocentricity
- ❖ Consumers and governments are not engaged or committed
- ❖ Fear &/or guilt targeted media and consumerism



Plasmid mediated resistance – the efflux pump

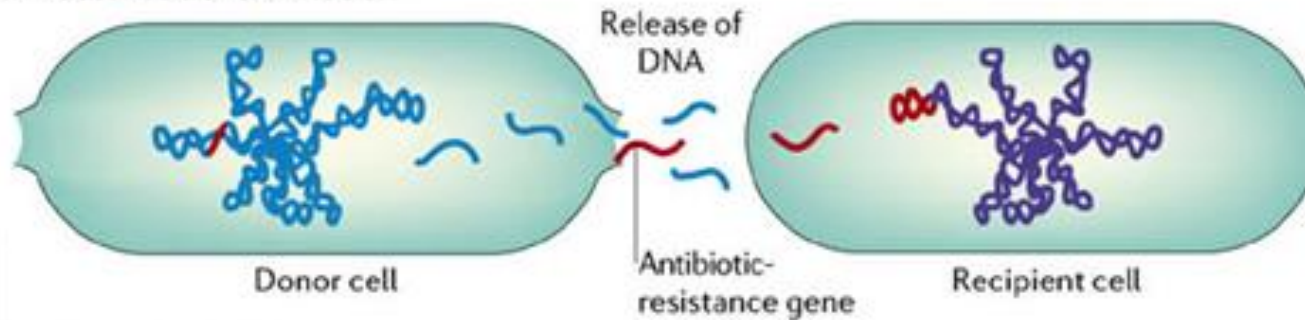


© 2004 Dennis Kunkel Microscopy, Inc.

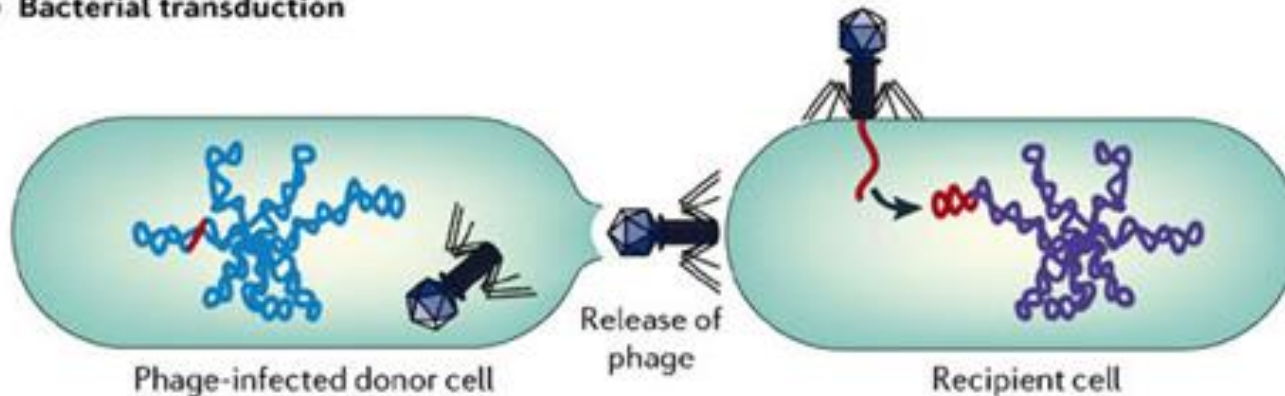


Plasmid mediated resistance - *GENE transfer*

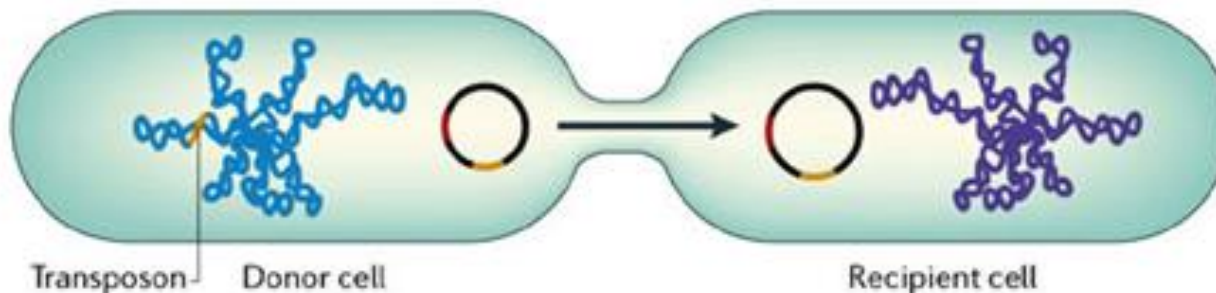
a Bacterial transformation



b Bacterial transduction



c Bacterial conjugation



Passive & horizontal gene transfer



Furuya EY and Lowy F (2006) Antimicrobial-resistant bacteria in the community setting. *Nat Rev Microbiol.* 4: 36–45:10.1038/nrmicro1325

The Enterobacteriaceae



Current national trends in carbapenem resistance

(NICD-NHLS Antimicrobial Resistance Reference Laboratory)



August 2014: 62% isolates tested were CPE strains (carbapenemase producing/ CRE carbapenem resistant Enterobacteriaceae)

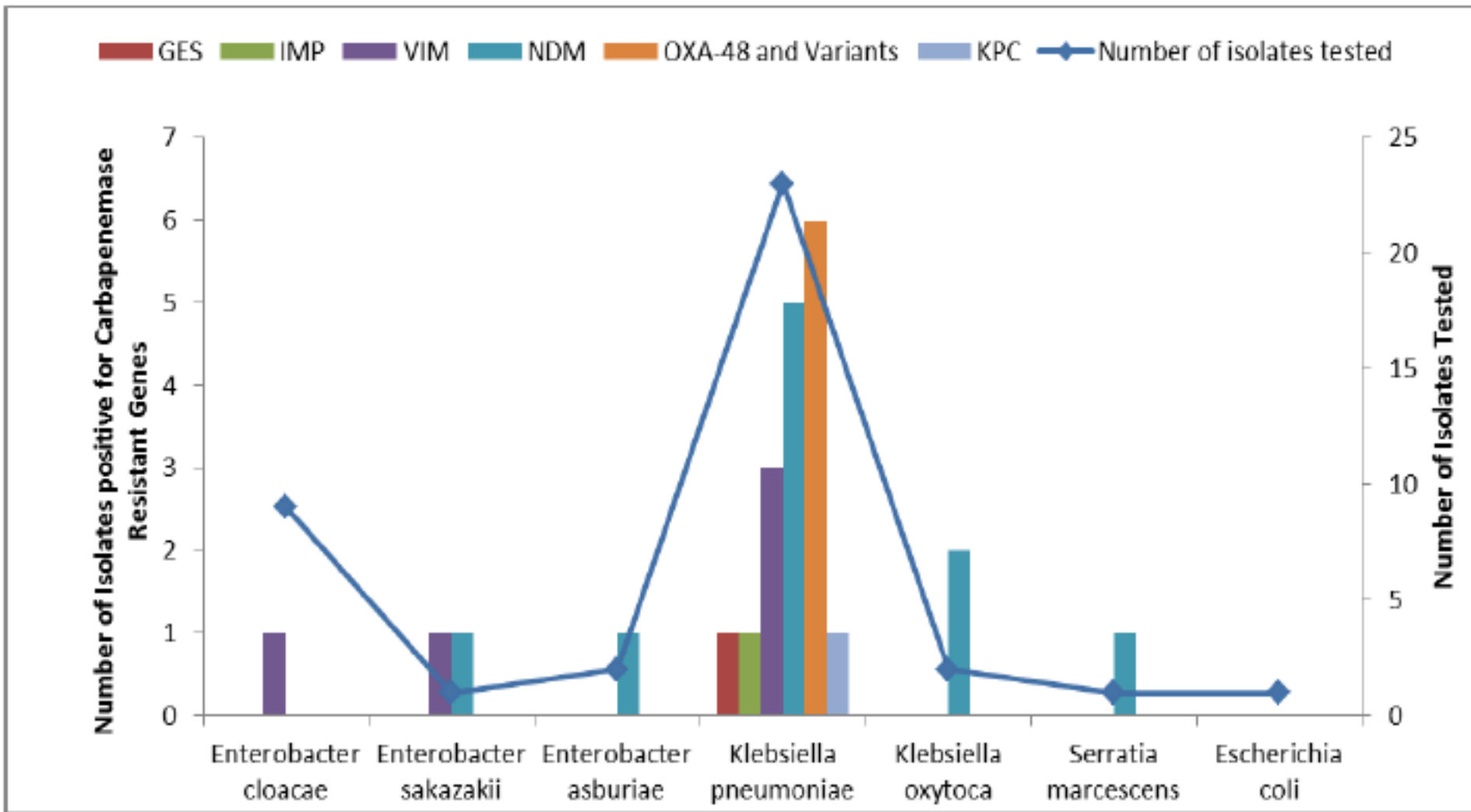


Figure 3. Enterobacteriaceae isolates screened (n=39) and confirmed CPE (n=24) during August 2014 at AMRRL (NICD-NHLS)

*Antimicrobial Resistance Reference Laboratory

April 2015: CRE *Klebsiella pneum.* isolates have tripled

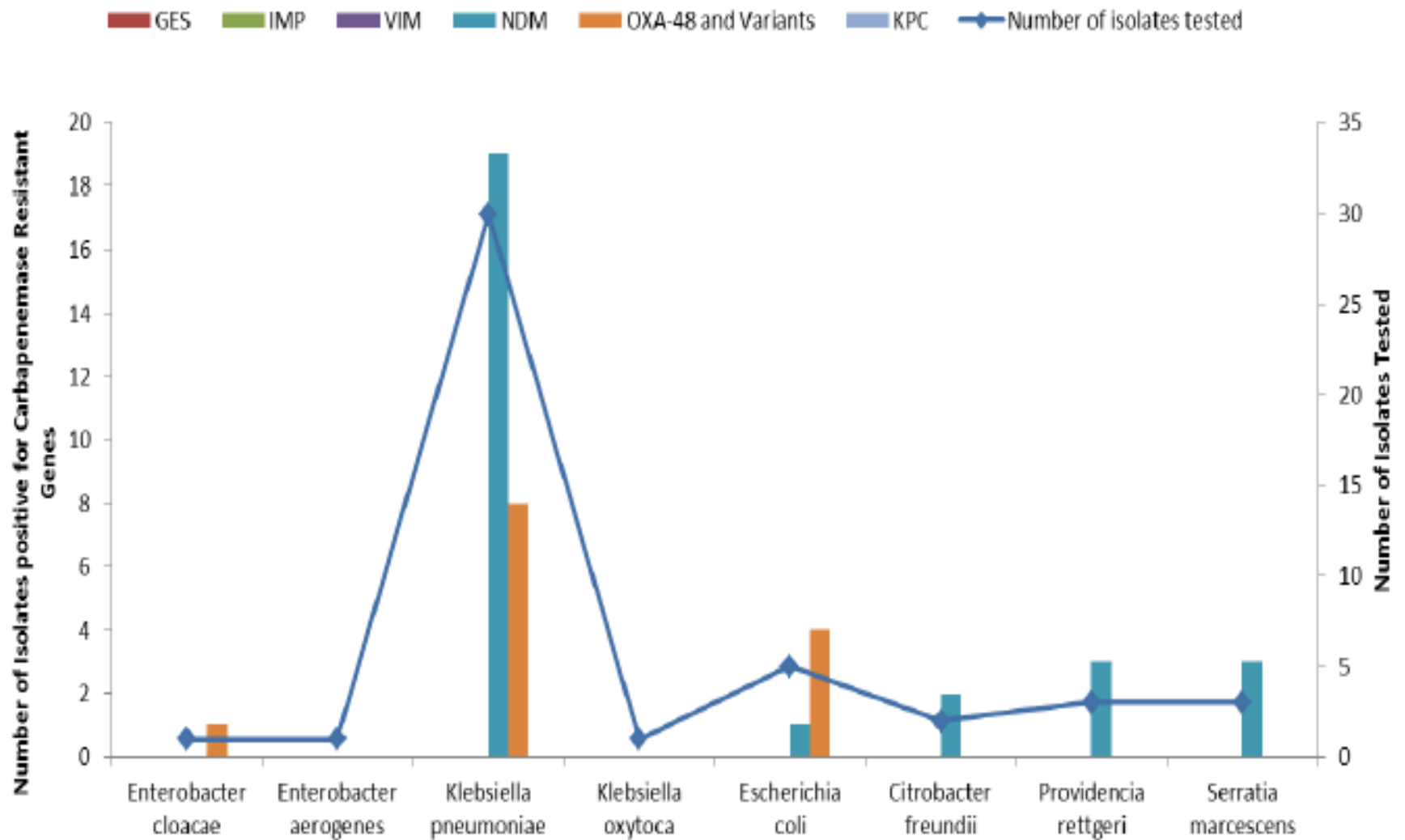
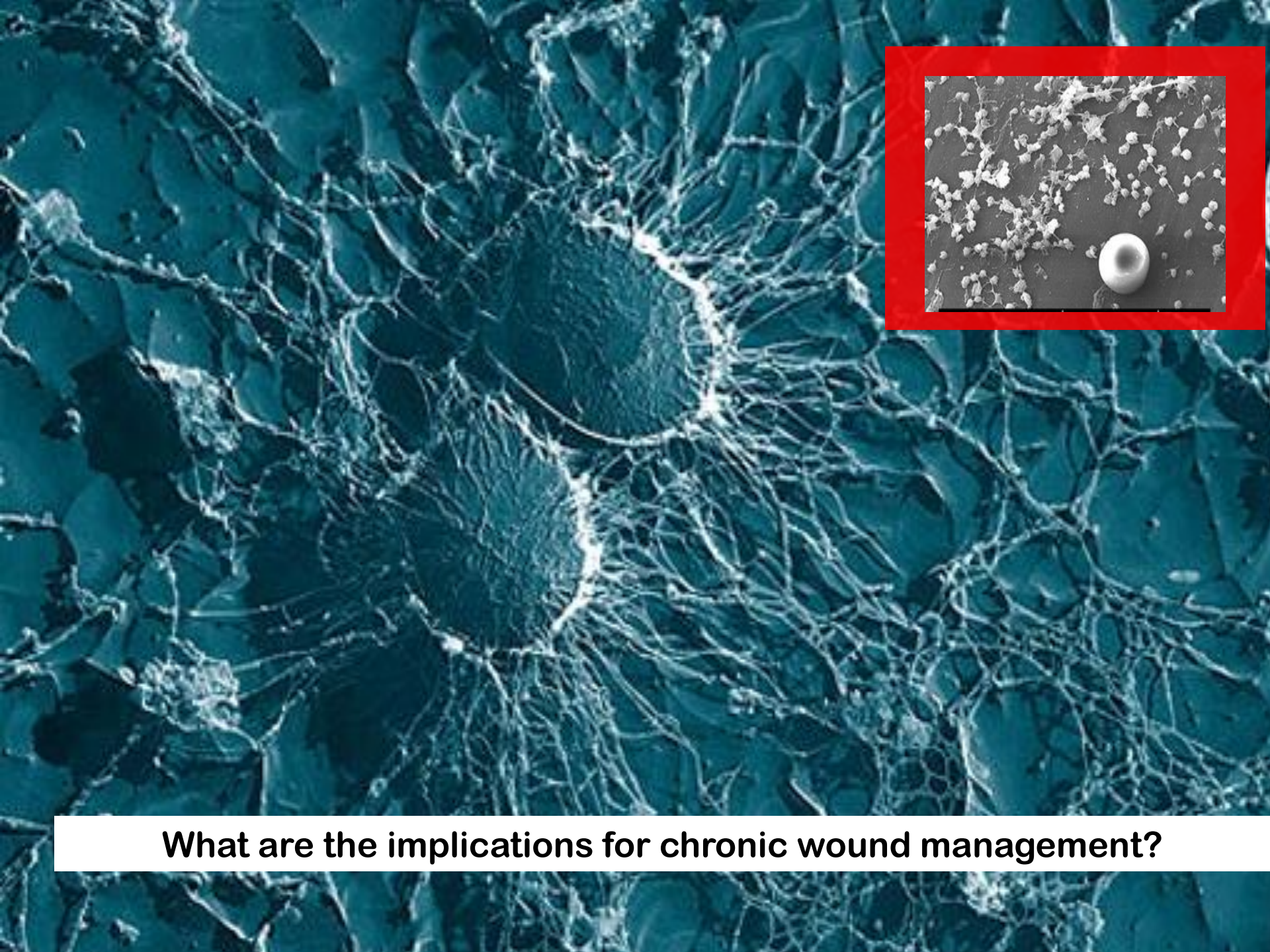
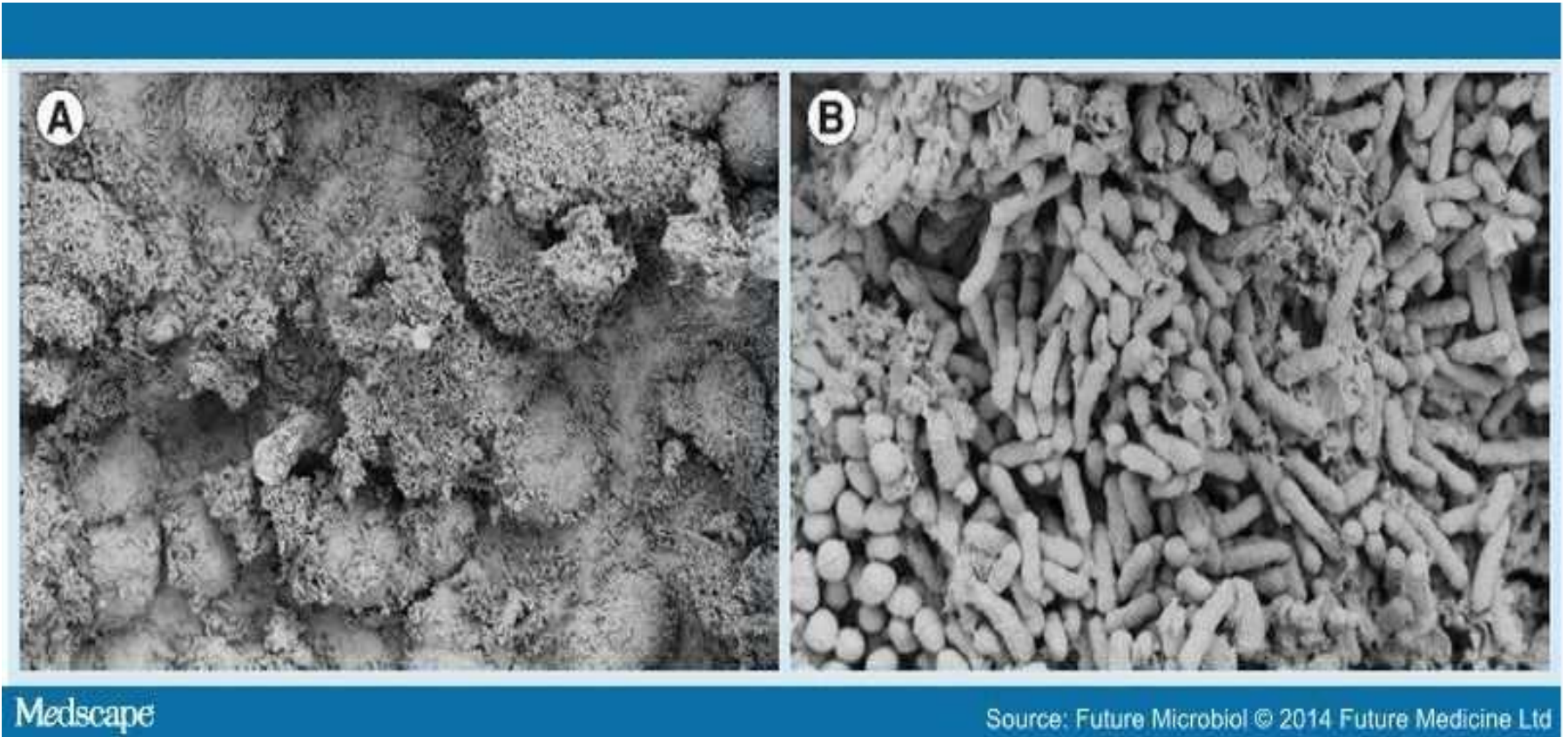


Figure 3. Enterobacteriaceae isolates screened (n=47) and confirmed CPEs (n=40) at the Antimicrobial Resistance Laboratory-Culture Collection, COTHI (NICD-NHLS), April 2015



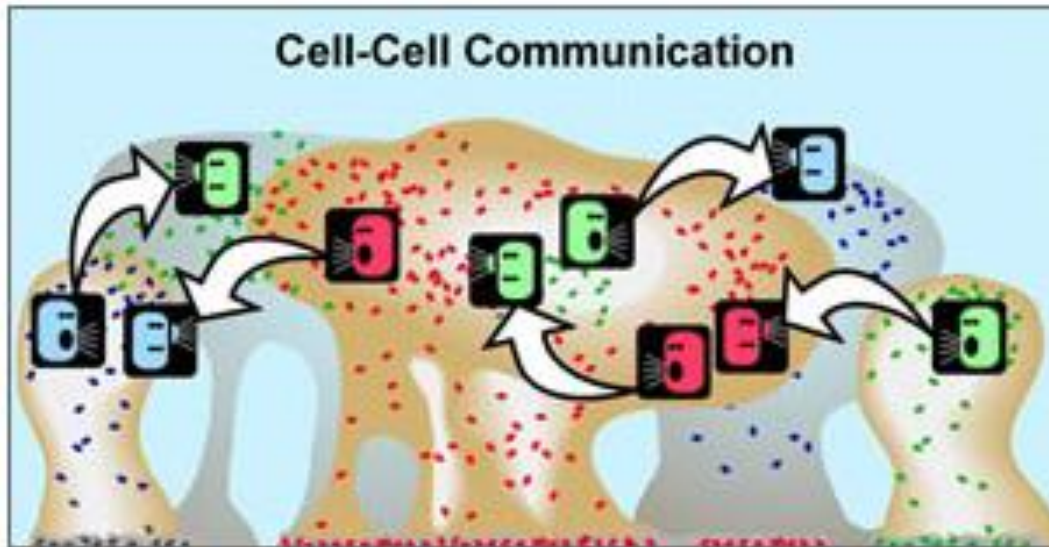
What are the implications for chronic wound management?

The polymicrobial nature of biofilm – a perfect example of ‘community’ and symbiotic co-operation

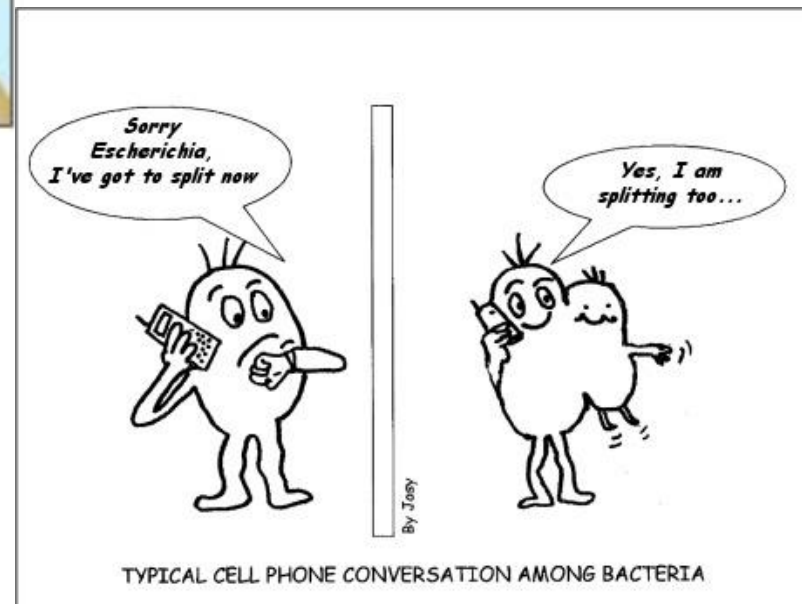


Bacteria within biofilms are up to **1,000 times more resistant to antimicrobials** than the same bacteria in suspension CDC 2011 Guidelines for Disinfection & Sterilization

Bacterial communication inside the biofilm – ‘QUORUM SENSING’



Sessile cells in a biofilm “talk” to each other via quorum sensing to build microcolonies and to keep water channels open.



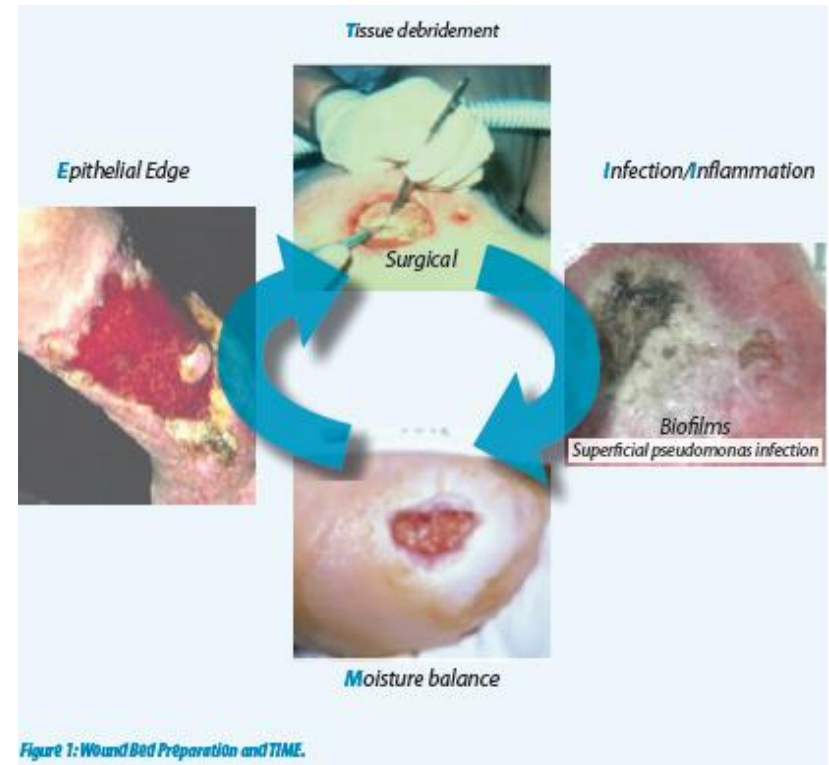
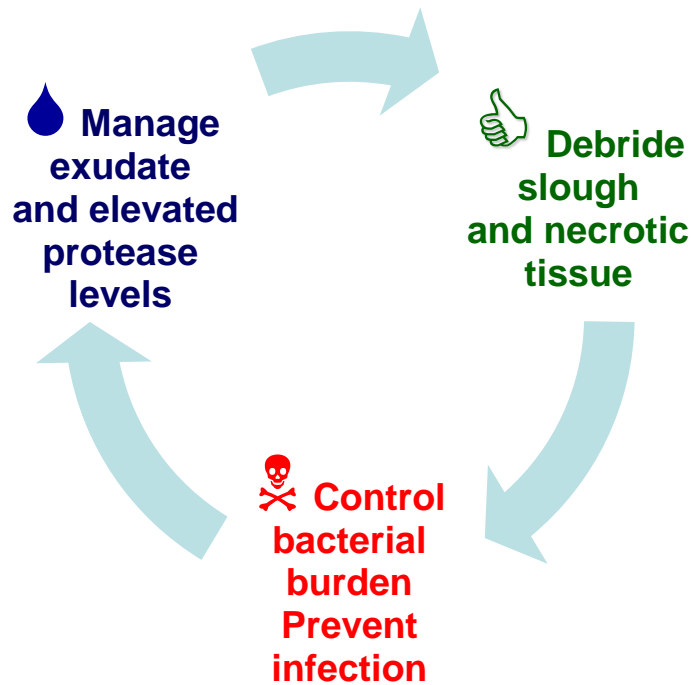
<http://bacteriality.com/2008/05/biofilm/>

<http://www.wfhss.com/html/humour/cartoon052.jpg>

leedsim@talktalk.net



Wound Bed Preparation (WBP)



http://www.woundsinternational.com/pdf/content_10280.pdf

WBP - disrupting and reducing biofilm



- **PHMB** (Polyhexanide) – a broad spectrum synthetic biguanide microbicidal disinfectant
- **Surfactant** cleanser - disrupts lipoproteins in biofilm, ↓ surface tension → effective debridement



also interferes with the production of chemical signalling molecules used in 'quorum sensing' 😊



Controlling bacterial burden -

Critical colonisation - possible localised infection¹

* **N.E.R.D.S** = superficial infection or 'critical colonisation'

(≥3 clinical criteria)

- **N** - non healing?
- **E** - exudate ↑
- **R** - red, friable granulation?
- **D** - debris on the surface?
- **S** - smell?



✓ Manage with topical antimicrobials

- topical cadexomer iodine, honey, PHMB or silver products
- If exudate ++ consider testing for elevated protease activity

Wound infection &/or systemic infection¹

S.T.O.N.E.E.S = deep compartment infection
(≥3 clinical criteria)

- **S** - size increasing
- **T** – temperature/ fever
- **O(s)** - probes to bone
- **N** - new areas of breakdown
- **E** - erythema > 2cm
- **E** - edema
- **S** – smell?



- ☑ Requires **systemic antimicrobial therapy**
- ☑ Use **topical antimicrobial dressings** as for N.E.R.D.S





Problems & pitfalls associated with superficial microbial sampling

Semi-quantitative analysis

☐ Grading:

- scanty growth (+)
- moderate growth (++)
- heavy or profuse growth (+++)



☐ **Quantitative analysis**

- Reported as colony count (cfu's) per gram of tissue or mm³ of pus
- >100 000/g (10⁵ maybe a predictor of critical colonization or wound infection)

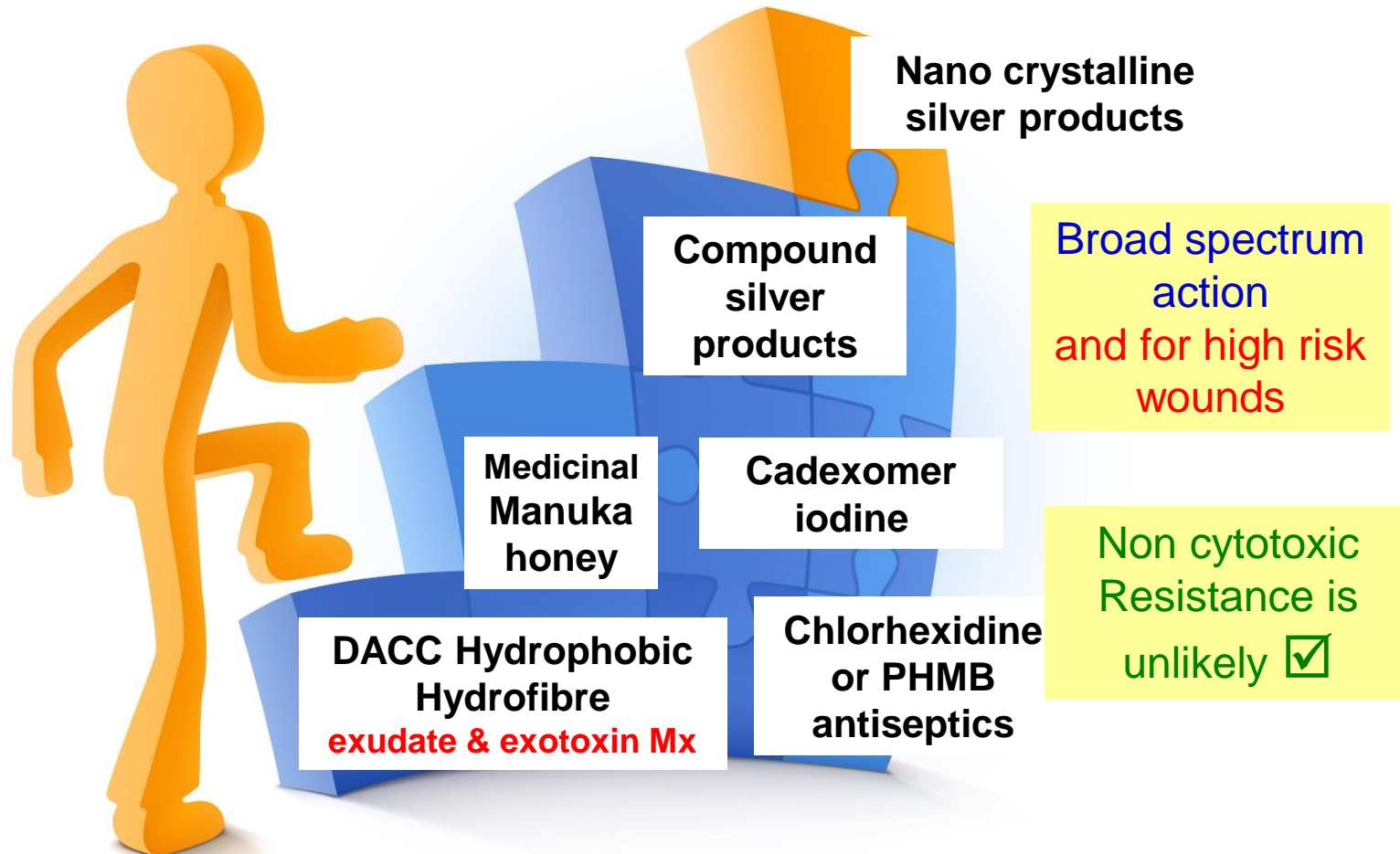
☐ **Interpretation of results**

- ✗ Growth of bacteria from swabs is not synonymous with infection
- ✗ Treatment based on culture results alone is not warranted



Preferred clinical specimens include aspirate from an abscess or curettage from the ulcer/wound bed

A rational approach for the safe use of topical antimicrobial products



Thank you!



Illustration: Don Smith

References



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2. Barrett S et al. Best Practice Statement: The use of topical antiseptic/antimicrobial agents in wound management. Wounds UK, Aberdeen, 2010
3. Phillips PL, Wolcott RD, Fletcher J, Schultz GS. ‘Biofilms Made Easy’. Wounds International 2010; 1(3) www.woundsinternational.com
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www.woundsinternational.com
5. Lindsay S. 2011 “Everything you ever wanted to know about the use of silver in wound therapy.” Silver White Paper www.systagenix.com
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7. Finley. PJ, Norton. R, Austin. C et al. Unprecedented Silver Resistance in Clinically Isolated *Enterobacteriaceae*: Major Implications for Burn and Wound Management. Antimicrob. Agents Chemother. August 2015 vol. 59 no. 8 4734-4741
8. www.who.org 2011 World Health Day Antibiotic Stewardship
9. www.cdc.gov Get Smart Campaign
10. Quarterly statistics SA NICD & National Health Laboratory Service (NHLS)
www.FIDSSA.co.za

Pressure Ulcers:Kavitha Ramkhelawan



Doctor CPD Meeting-Botswana-30 March 2016

Pressure Ulcers

Definition

International NPUAP-EPUAP Pressure Ulcer

- ★ A pressure ulcer is localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear.
- ★ A number of contributing or confounding factors are also associated with pressure ulcers; the significance of these factors is yet to be elucidated.

Pressure Ulcers – Gradings.

Category I: Non Blanchable Erythema

- Intact skin with non-blanchable redness of a localized area usually over a bony prominence.
- Darkly pigmented skin may not have visible blanching; its colour may differ from the surrounding area.

The area may be painful, firm, soft, warmer or cooler as compared to adjacent tissue. Category I may be difficult to detect in individuals with dark skin tones.

May indicate “at risk” persons.







Pressure Ulcers – Gradings.

Category II: Partial Thickness

Partial thickness loss of dermis presenting as a shallow open ulcer with a red pink wound bed, without slough.

May also present as an intact or open / ruptured serum-filled or sero-sanguinous filled blister.

Presents as a shiny or dry shallow ulcer without slough or bruising.

This category should not be used to describe skin tears, tape burns, incontinence associated dermatitis, maceration or excoriation.









Pressure Ulcers – Gradings.

Category III: Full thickness skin loss.

Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Slough may be present but does not obscure the depth of tissue loss. May include undermining and tunnelling.

- The depth of a Category/Stage III pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have (adipose) subcutaneous tissue and Category/Stage III ulcers can be shallow. In contrast, areas of significant adiposity can develop extremely deep Category/Stage III pressure ulcers.
- Bone/tendon is not visible or directly palpable.



Ostomy Care
Urology & Continence Care
Wound & Skin Care





Grade 3



Pressure Ulcers – Gratings.

Category IV: Full Thickness Tissue Loss

Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present. Often includes undermining and tunnelling.

The depth of a Category/Stage IV pressure ulcer varies by anatomical location. The bridge of the nose, ear, occiput and malleolus do not have (adipose) subcutaneous tissue and these ulcers can be shallow.

Category/Stage IV ulcers can extend into muscle and/or supporting structures (e.g., fascia, tendon or joint capsule) making osteomyelitis likely to occur.

Exposed bone/muscle is visible or directly palpable.

Name: C.J	Date: 18/8/08	Wound No.: 4
--------------	------------------	-----------------



087 205/5 (0107)









cm 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19

ActiFormCool™ Wound Measuring Strip - for single use only

Patient Identification:



Pressure Ulcers – Gratings.

Unstageable/Unclassified.

- Additional Categories for the USA
- Unstageable/ Unclassified: Full thickness skin or tissue loss – depth unknown
- Full thickness tissue loss in which actual depth of the ulcer is completely obscured by slough (yellow, tan, grey, green or brown) and/or eschar (tan, brown or black) in the wound bed. Until enough slough and/or eschar are removed to expose the base of the wound, the true depth cannot be determined; but it will be either a Category/Stage III or IV.
- Stable (dry, adherent, intact without erythema or fluctuance) eschar on the heels serves as “the body’s natural (biological) cover” and should not be removed.

Eschar



Dry necrotic eschar









Deep Tissue Injury

- Purple or very dark areas that are surrounded by profound redness, oedema, or induration suggest that deep tissue damage has already occurred and additional deep tissue loss may occur.



General advice

Pressure ulcer guide for the use of hydrocolloid dressings

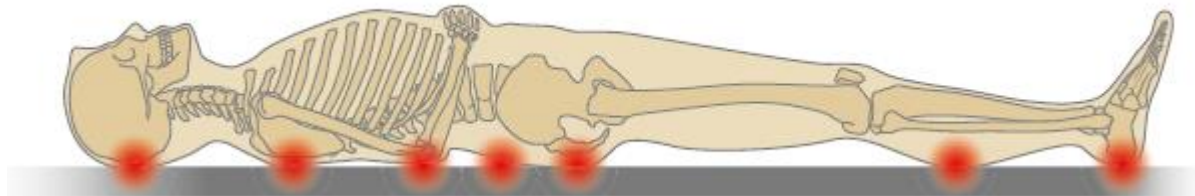
International NPUAP – EPUAP Pressure Ulcer Classification System ³		Comfeel® Plus
Stage description	Recommendation for use of hydrocolloid dressings	Product based on treatment needs
Stage I  Non-blanchable redness of intact skin Intact skin with non-blanchable erythema of a localized area usually over a bony prominence. Discolouration of the skin, warmth, oedema, hardness or pain may also be present. Darkly pigmented skin may not have visible blanching.	Consider using hydrocolloid dressings to protect body areas at risk of friction injury or risk of injury from tape. ³	Comfeel Plus Transparent
Stage II  Partial thickness skin loss Partial thickness loss of dermis presenting as a shallow open ulcer with a red-pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister.	Use hydrocolloid dressings for clean Stage II pressure ulcers in body areas where they will not roll or melt. ³	Comfeel Plus Transparent or Comfeel Plus
Stage III  Full thickness skin loss Full thickness tissue loss. Subcutaneous fat may be visible but bone, tendon or muscle are not exposed. Some slough may be present. May include undermining and tunneling.	Shallow wound Consider hydrocolloid dressings on non-infected, shallow Stage III pressure ulcers. ³	Comfeel Plus
	Deep wound Consider filler dressing beneath hydrocolloid dressings in deep ulcers to fill in dead space. ^{3,4}	Comfeel Plus + Biatain Alginate
Stage IV  Full thickness tissue loss Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present. Often include undermining and tunneling.	In areas with no subcutaneous tissue, e.g. on the bridge of the nose and the ear, Stage IV can be shallow. ³	Use under the discretion of a healthcare professional Comfeel Plus + Biatain Alginate

General advice

Important risk factors for pressure ulcer development

- Reduced mobility or immobility
- Sensory impairment
- Vascular disease
- Age and care setting
- Malnutrition or dehydration
- Medical interventions
- Illness or multiple co-morbidities
- Patient support surfaces

High risk areas



Remember!

- Risk of pressure ulcers is highest over bony prominences
- However, risk is relevant for any part of the skin under prolonged pressure

General advice

Good Clinical Practice for pressure ulcer prevention and management

A holistic approach for prevention and treatment may include below elements



- Treat the underlying pathology, if possible
- Do not massage ulcer area
- Do not use non-prescribed creams prophylactically

General advice

Good Clinical Practice for pressure ulcer management

SSKIN guide – 5 simple principles to prevent and treat pressure ulcers

S Surface: Make sure your patients have the right support

S Skin inspection: Early inspection means early detection

K Keep your patients moving: Consider frequent repositioning and the use of pressure re-distributing devices

I Incontinence: Your patients need to be dry





N Nutrition/hydration: Help patients have the right diet and plenty of fluids



© NHS Midlands and East 2012

General advice

Pressure ulcer guide for the use of hydrocolloid dressings

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Stage IV  Full thickness tissue loss Full thickness tissue loss with exposed bone, tendon or muscle. Slough or eschar may be present. Often include undermining and tunneling.	In areas with no subcutaneous tissue, e.g. on the bridge of the nose and the ear, Stage IV can be shallow. ³	Use under the discretion of a healthcare professional Comfeel Plus + Biatain Alginate

General advice

Introduction to pressure ulcer prevention

- Risk assessment and documentation

These are important parts of pressure ulcer management to help identify and protect patients with at-risk skin from developing a pressure ulcer

- Moisture Associated Skin Damage* (MASD)

Important to conduct patient review and skin assessments, as MASD can be mistaken for early stage pressure ulcer

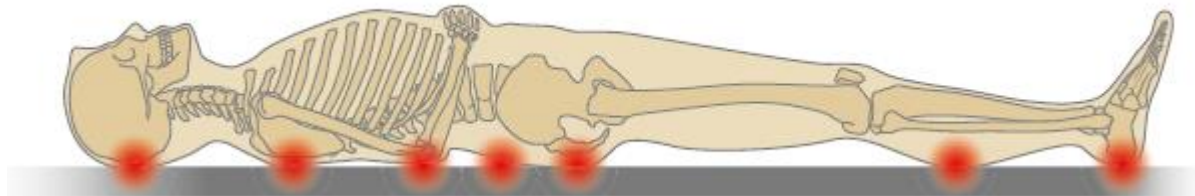
* MASD: injuries occurring due to prolonged exposure to wound exudate, faecal and/or incontinence and perspiration

General advice

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- Vascular disease
- Age and care setting
- Malnutrition or dehydration
- Medical interventions
- Illness or multiple co-morbidities
- Patient support surfaces

High risk areas



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- Do not use non-prescribed creams prophylactically

General advice

Good Clinical Practice for pressure ulcer management

SSKIN guide – 5 simple principles to prevent and treat pressure ulcers

S Surface: Make sure your patients have the right support

S Skin inspection: Early inspection means early detection

K Keep your patients moving: Consider frequent repositioning and the use of pressure re-distributing devices

I Incontinence: Your patients need to be dry

N Nutrition/hydration: Help patients have the right diet and plenty of fluids



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Good Proper –Wound management





Coloplast HEAL

Healthcare Excellence through Access and Learning

Coloplast®
HEAL



Coloplast HEAL is a global educational programme for healthcare professionals working with wounds

HEAL

The programme aims to **increase knowledge** of modern wound healing principles and **improve the standard of care** for wound patients around the world. It is part of our ongoing **dedication to wound care** education and support.



Healthcare



Excellence

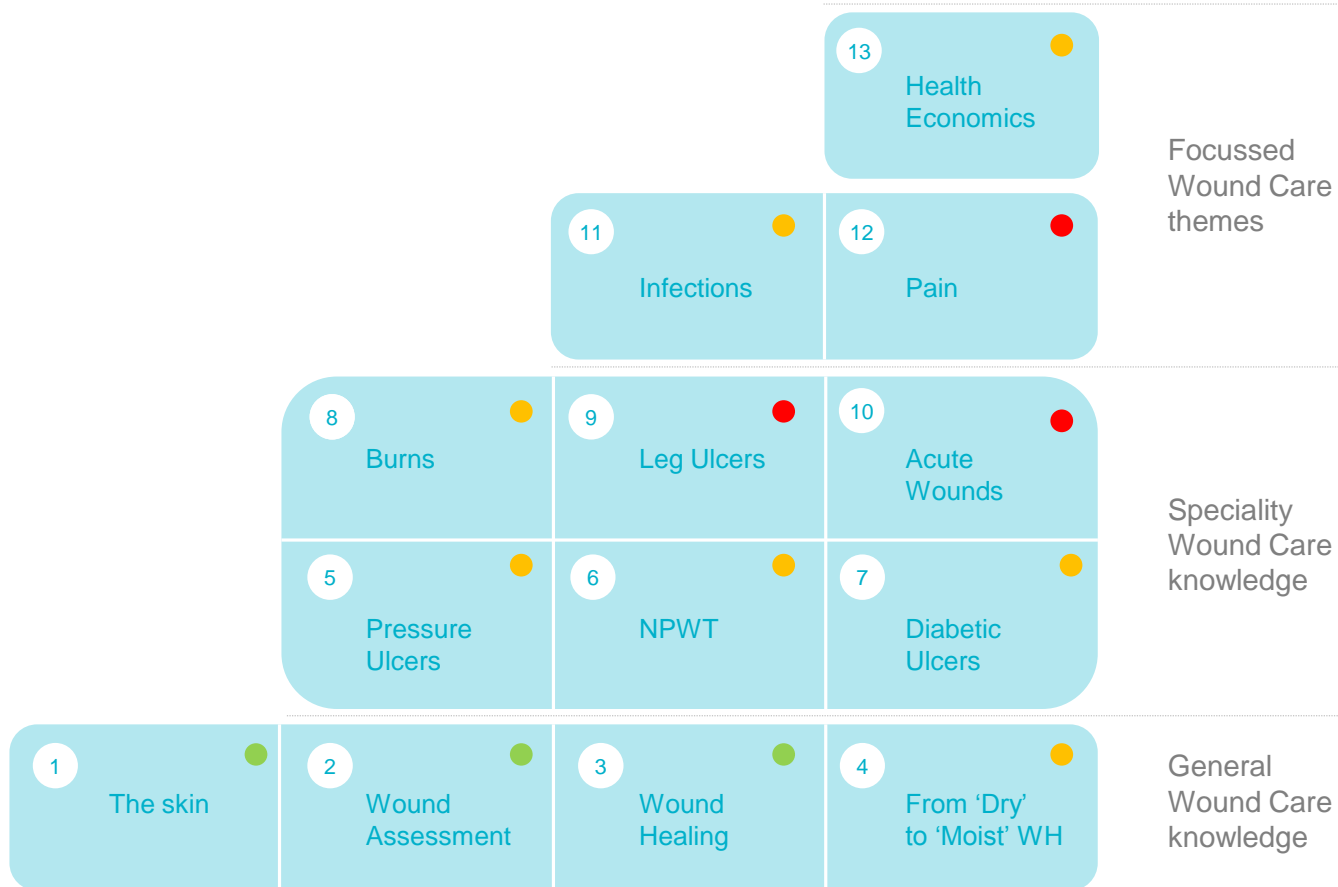


Access



Learning

We will develop 13 modules focussed on various themes and topics



Endorsed by



All courses are developed in close collaboration with international wound care experts



Madeleine Flanagan



Joanne McCardle



Paul Chadwick



Jan Apelqvist



Heinz Rode



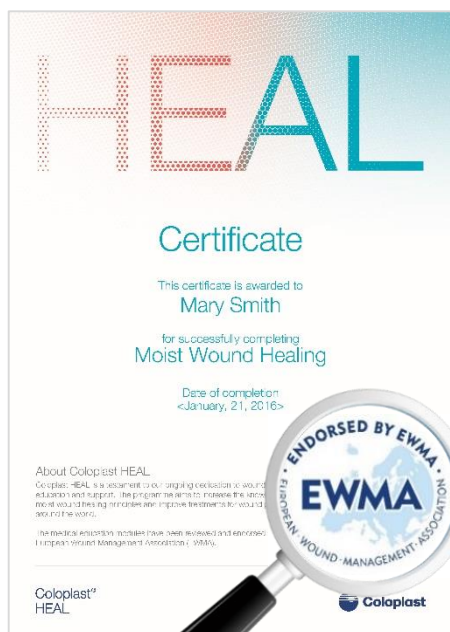
Brenda King



Sylvie Meaume



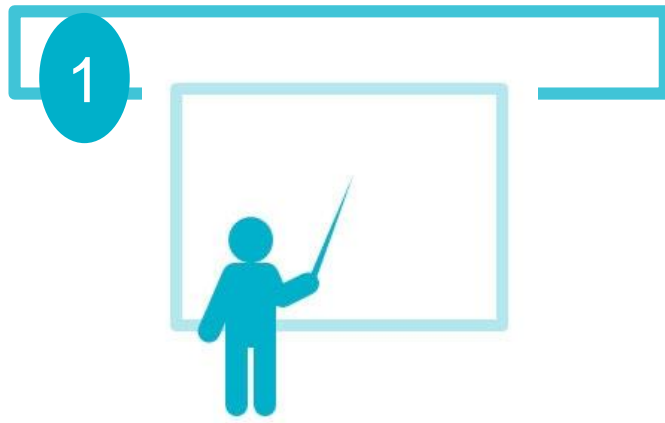
Through close collaboration with EWMA and local wound care organizations, we ensure high quality learning material



Because of endorsements, no changes can be made during localization



The HEAL educational program is available in two formats

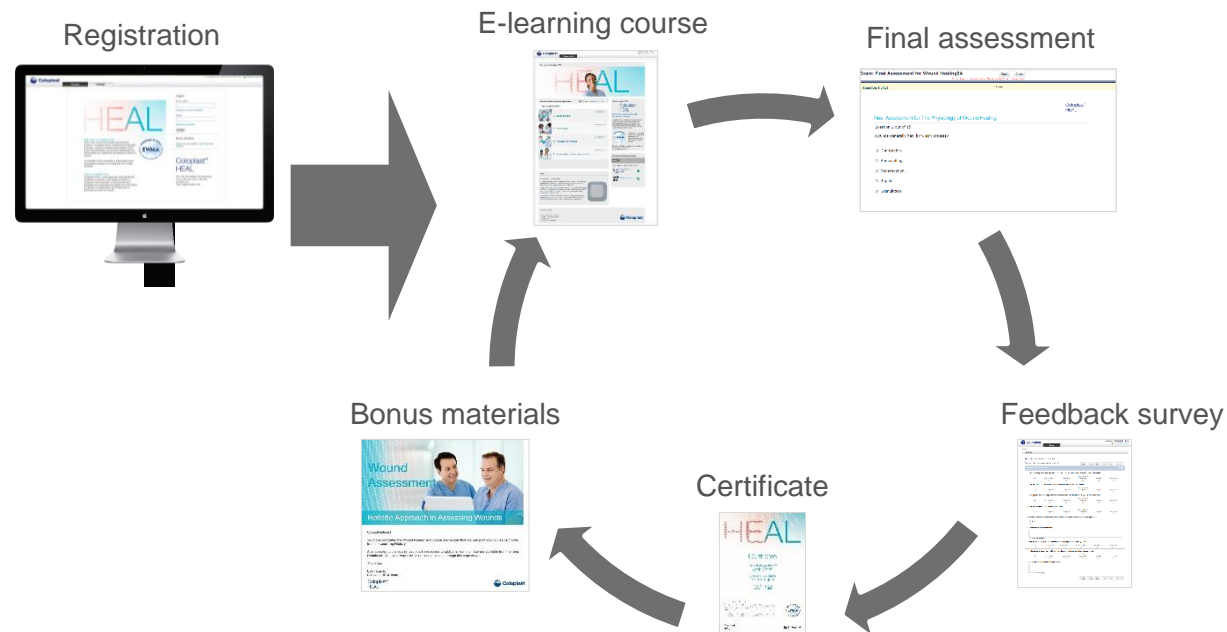


Live Seminar Packages



E-learning

On the HEAL online platform, users are guided through an interactive Wound Care learning journey





Wrap up and Closing: Renette and Oromeng

Our mission

Making life easier for people
with intimate healthcare needs

Our values

Closeness... to better understand

Passion... to make a difference

Respect and responsibility... to guide us

Our vision

Setting the global standard
for listening and responding

Infected – Wound. Green.



Epithelialising Wound



Sloughy Wound



Black Necrotic Tissue.



Sacral

