



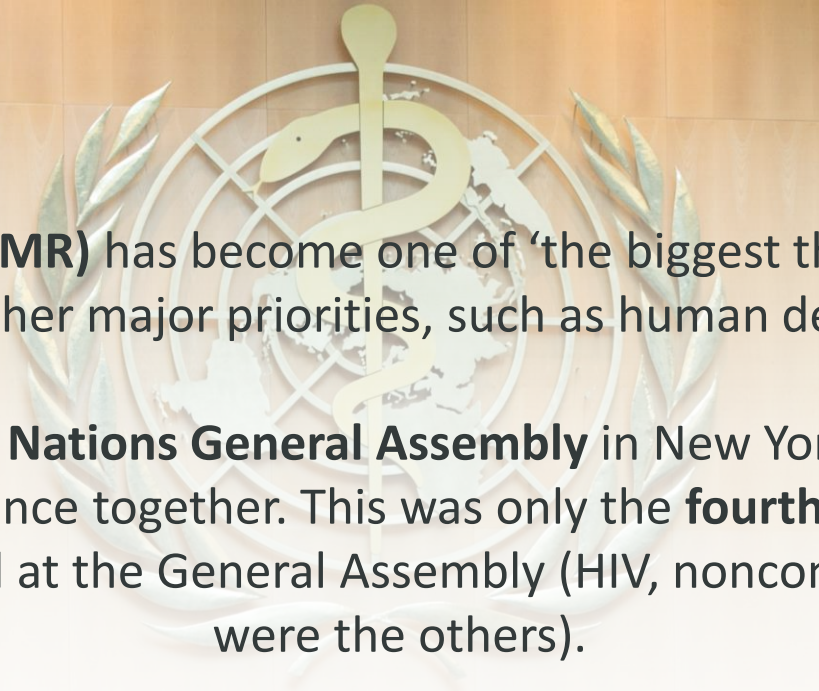
# UniPharma Group

INTRODUCING

**PATHELEN**<sup>®</sup>  
WOUNDPOWDER

A NEW DIMENSION OF OPEN WOUND  
TREATMENT



The United Nations emblem is centered in the background, featuring a world map surrounded by olive branches and a caduceus (a staff with two snakes) in the center.

**Antimicrobial Resistance (AMR)** has become one of ‘the biggest threats to global health’ and endangers other major priorities, such as human development.

Global leaders met at the **United Nations General Assembly** in New York in September 2016 to commit to fighting antimicrobial resistance together. This was only the **fourth time in the history of the UN** that a health topic was discussed at the General Assembly (HIV, noncommunicable diseases, and Ebola were the others).

**Reuters** issued a study report on ‘Surgery death Rates in Africa is twice the global average’ in January 2018.

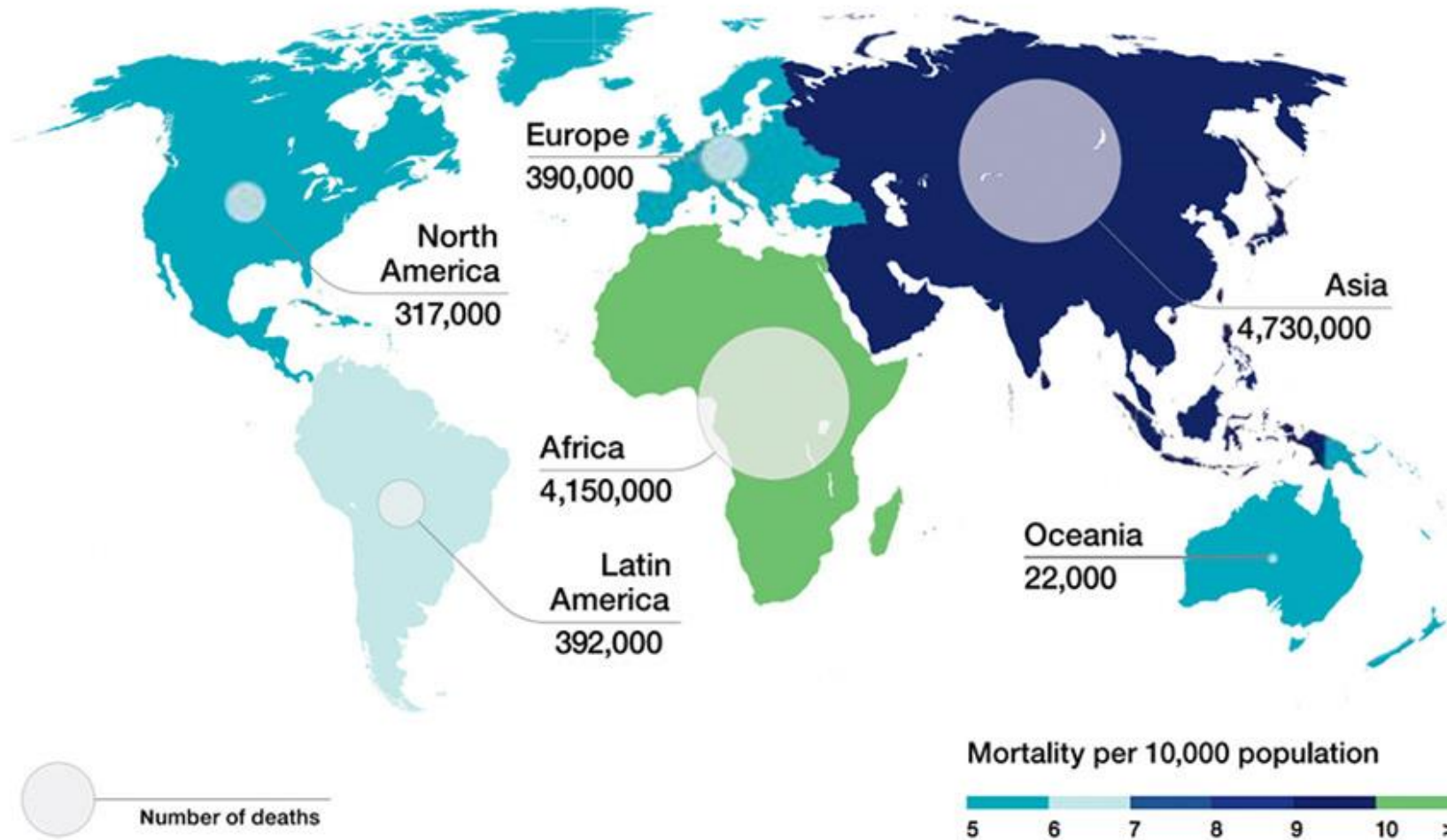
It showed about **one in five surgery patients** developed a complication. Comparisons with international data for elective surgery showed that death rates from elective surgery were **1 percent in Africa** compared with **0.5 percent for the global average**.

**Infections accounted for more than half of complications. The most common procedure was caesarean delivery.**



# AMR Problem

## Deaths attributable to AMR every year by 2050



Source: Review on Antimicrobial Resistance



“ **Our mission** is to solve the issue of anti-microbial resistance in open wounds, prevent infections, prevent suffering, treat patients rapidly, effectively and cheaply and save millions of lives worldwide.



**PATHELEN**<sup>®</sup>  
WOUNDPOWDER





Antibiotic resistance is one of the biggest threats to global health, food security, and development today.



A growing number of infections – such as wound infection, gonorrhea, and salmonellosis – are becoming harder to treat as the antibiotics used to treat them become less effective.



Antibiotic resistance can affect anyone, of any age, in any country.



Antibiotic resistance occurs naturally, but misuse of antibiotics in humans and animals is accelerating the process.



Antibiotic resistance leads to longer hospital stays, higher medical costs and increased mortality.



# Solving a Global Problem

## Benefits



Takes a lot of pressure off any health systems



High amount prevention of amputations and other long-term issues with infections on open wounds



Considerably reduces operations caused by open wound infections



Considerably reduce post-op infections



Can be use in remote locations preventing high death rates through infections



Substantially reduces death rates caused by infections throughout the region



Reduces the impact to the economy by considerably reducing illness and death rates benefiting social aspects



Considerably less training and staff cost due to low skill application





Alternative, more powerful way of eliminating bacteria and fungi from a wound



Quickly eliminates (protects from) :

MRSA / MDR / ESBL and multi-resistant gram-negative bacteria.

Chronic pressure, venous leg and diabetic/neuropathic ulcers.



Inflammatory diseases of the uterus and uterine adnexa.

Exudating, traumatic and post-operative wounds.

fungating, cancerous or malignant lesions.

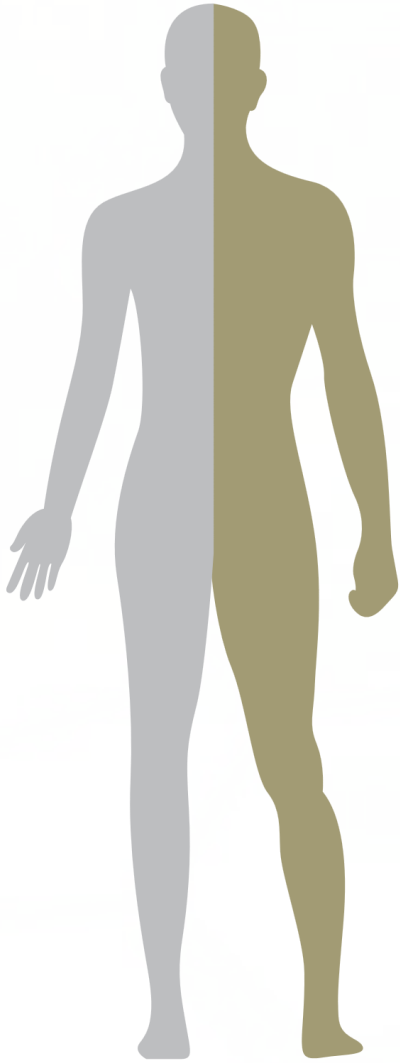


## Works very effectively against:



- ▶ Staphylococcus Aureus
- ▶ Athletes foot
- ▶ Yeast infection
- ▶ Infected burn surfaces
- ▶ Noma
- ▶ Gingivitis
- ▶ Wounds with resistant nuclei
- ▶ Infectious diarrhoea
- ▶ Gangrene
- ▶ Peritonitis
- ▶ Vaginitis





Based on a highly dispersed silicas and polymethylsiloxane that have high adsorptive, anti-inflammatory and wound-healing properties



Can be used in different fields of practical medicine for the treatment of diseases



Affinity of proteins in comparison to antibiotics gives a unique healing effect by agglutinating (clump together) microorganisms which have protein molecules on the surface



Proven by factual and strong evidence, licenses and personal testimonials



Highly accelerated healing time and dressing does not stick to wound eliminates most bacterial and fungal wound infections within on average 5-10 days

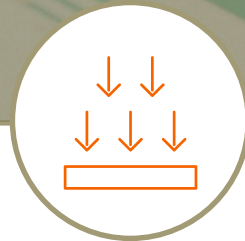


A far more **effective** replacement for all other currently available antimicrobial wound treatment devices

# Naturally Safe and Effective



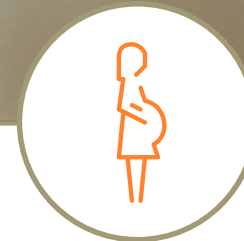
No known cytotoxicity  
(not toxic to cells)



No systemic adsorption  
(not absorbed into the body)



No known side effects



Can safely be used on all  
populations including pregnant  
women and new-borns



Can also be used as effectively on animals





Eliminates the shortcoming of other products by creating

- a universal hydrophilic-hydrophobic composition with highly sorptive and detoxifying effect



Accessible

- Pathelen can be administered without the need for specialist training.
- Pathelen can be used in remote locations where healthcare provision may be sparse.
  - Pathelen can be stored easily.



# The use of Pathelen®



inhibits formation of  
necrotic tissues



accelerates wound healing



reduces the number of  
medical manipulations,  
including dressings.



helps to avoid necrectomy  
during repeated surgical  
interventions



The most typical problems of patients with these wounds are:

- Rapid destruction of tissues
- Slow detersion of a wound
- Increase of infectious and inflammatory process (SIRS, sepsis).

The unique effect of Pathelen is achieved through various simultaneous complex mechanisms of :

- Removal of the biofilm
- Elimination of all germs in the wound
- Sorption of wound exudate
- Preparation of a physiological wound environment with granulating tissue
- Protect the wound against new germs

Eliminates the need for detoxification and systemic antibiotic therapy, even in cases of multi-preparation resistant wound microflora.



Pathelen<sup>®</sup> significantly reduces the quantity of infectious complications of pressure ulcers including



bacteremia

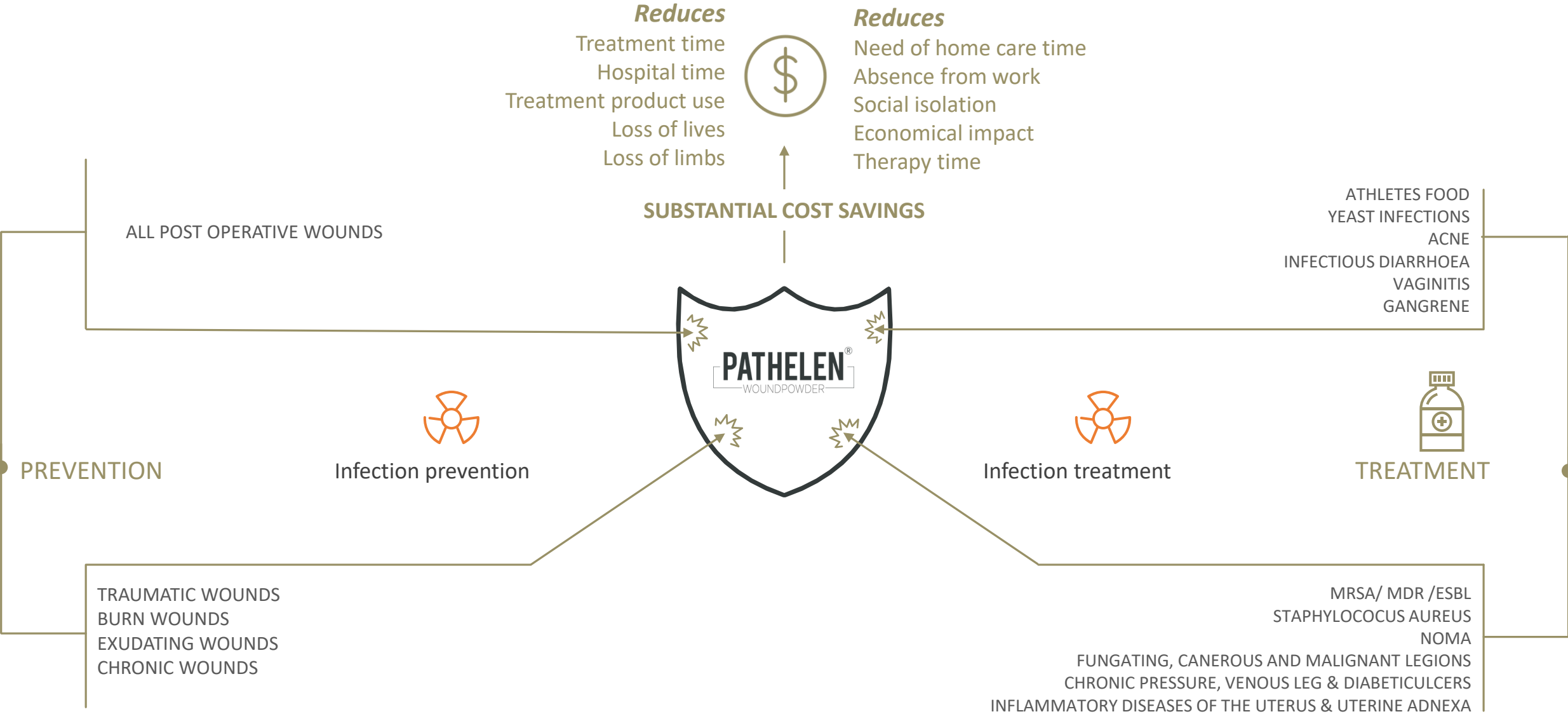


sepsis



abscesses

# TREATMENT & PREVENTION, YOUR FIRST LINE OF DEFENCE





**Your first line of defence against infection**



Pathelen® may be used for treating purulent-inflammatory diseases of soft tissues and visceral organs, as well as human and animal' infections by the following ways of applications

application of a pharmaceutical preparation comprising the composition on the wound surface in one of the following forms – powder, gel

oral use of a pharmaceutical preparation comprising the composition in liquid form;



washout and/or irrigation of visceral organs using the suspension form directly or with the help of drainage;

intraurethral (through urethra) insertion of a suspension of the composition for healing urethritis provoked by gonococci, trichomoniasis and other infections.



# Applications



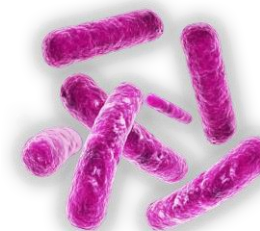
Treatment of infections caused by staphylococcus aureus



Methicillin resistant staphylococcus aureus (MRSA)



Multi-resistant gram-negative bacteria



Enterobacteriaceae e.g., Escherichia coli, klebsiella pneumonia, klebsiella oxytoca, enterobacter cloacae, proteus mirabilis, morganella morganii, serratia marcescens, citrobacter (freundii)



Nonfermenting bacteria (e.g., Pseudomonas aeruginosa, acinetobacter baumannii, pseudomonas)

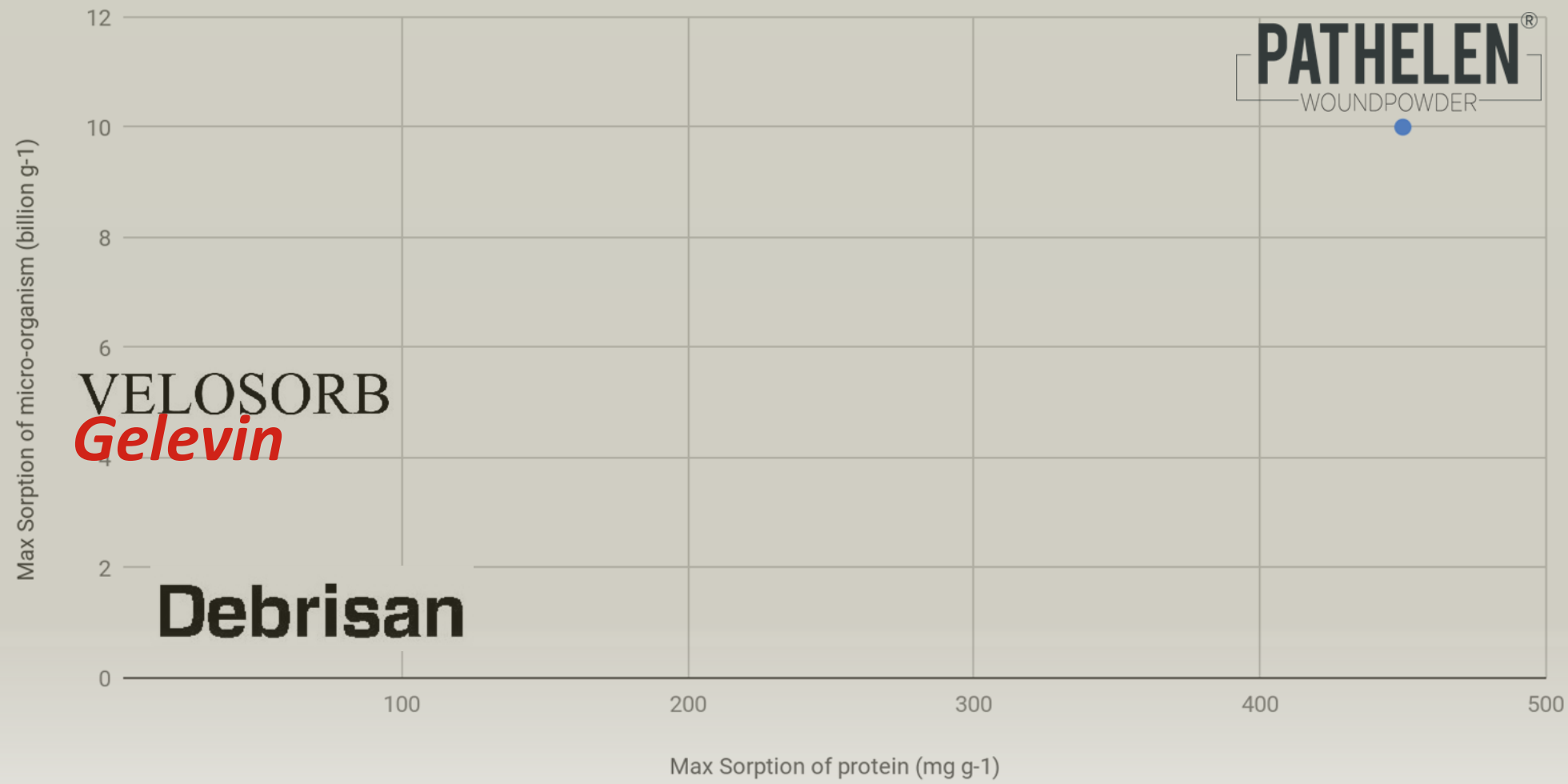
Significantly reduces the quantity of infectious complications of pressure ulcers including bacteremia and sepsis, osteomyelitis, septic arthritis and abscesses.



# Sorption of protein and micro-organisms

# Competition

Product maximum capability



1) - 450mg g-1 sorption of protein

2) - 10 billion g-1 sorption of micro-organisms

**6.4 x more effective than closest competitor!**



Although PATHELEN WOUND POWDER is a powder, it has completely different properties comparing to all wound powders available on the market. When Pathelen comes into contact with the wound exudate, it transforms into a gel.

An ordinary wound gel only creates a moist wound environment, but does not eliminate enough bacteria and biofilms to ensure a fast wound healing or a wound healing at all.

PATHELEN Hybrid creates a germ-free wound with granulating tissue independent of the state of the immune system.

## Comparison of Pathelen properties and typical wound gels/powders on the market

	PATHELEN	OTHER PRODUCTS
Sorption of protein, mg g <sup>-1</sup>	up to 800	No sorption possible
Sorption of microorganisms, billion g <sup>-1</sup>	Up to 10.0	No sorption possible
Osmotic activity in %	377	0.00
Moist wound environment	yes	yes
Wound protection	yes	yes
Adsorption of wound exudate	yes	no
Removal of biofilm	yes	no



# Competition

## 3rd Degree Burn Case Studies in 2019



Vs



### The Treatment:

1. Debridement of wound surface by surgery
2. Intravenous (IV) electrolyte fluid
3. Pain medication
4. Ongoing medical labour
5. Daily bed cost
6. Skin grafting
7. Aftercare

### Reasons for Cost Saving:

1. Fewer applications per patient required
2. High effectiveness means patients heal more quickly
3. Fewer complications mean patient turnover is rapid

\$1,799

\$4,040

18 days

54 days

55% cost saving  
66% faster recovery

Source - Department: Intensive care unit: I.C.U, General Surgery Department: G.S.D, Ukraine

# Preparation and Application Example

MRSA infected ulcer on 65 year old male

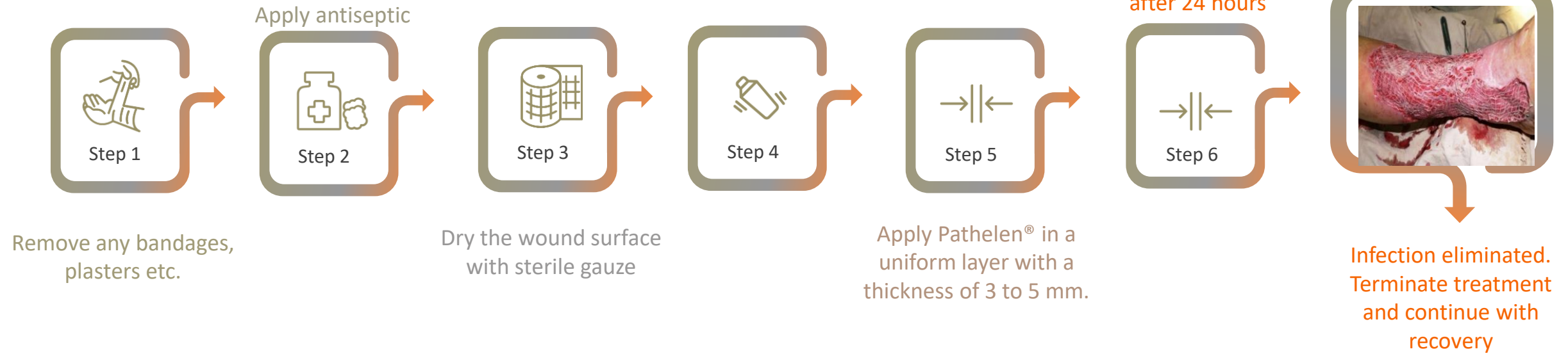


Preparation : Before starting with a wound therapy using PATHELEN<sup>®</sup>, the wound must be thoroughly cleaned, usually with a classic debridement.

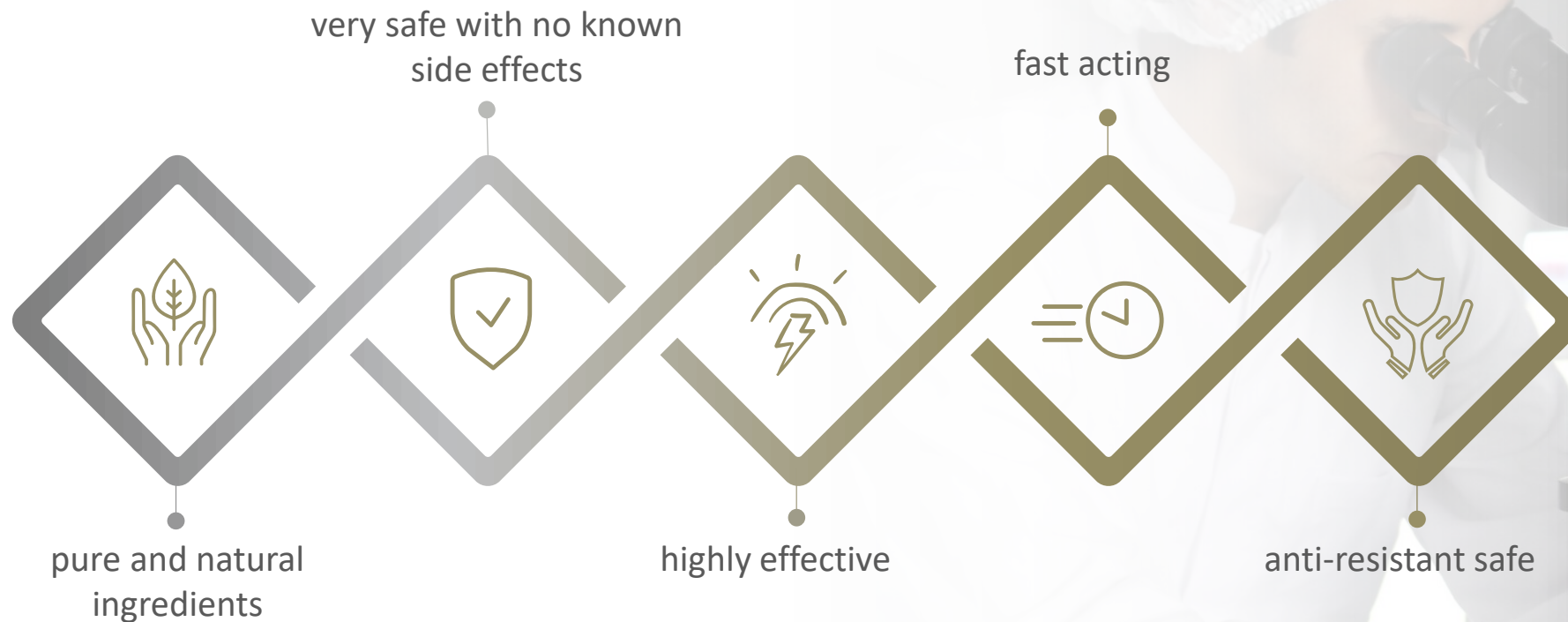
Shake the 50 ml bottle for 10 seconds (the powder will grow in density)

Add further treatment following point 1 to 5 after 24 hours

5 days later



## A refined blend of European Medicine Agency C1 approved medical device





## INFECTION PREVENTION

Burn Wounds

Traumatic Wounds

Exudating Wounds

Post-Operative Wounds

## INFECTION TREATMENT

Chronic Pressure, Venous Leg and Diabetic/Neuropathic Ulcers

Chronic Wounds

Staphylococcus Aureus

Noma

Inflammatory diseases of the uterus and uterine adnexa

Fungating, cancerous or malignant lesions

MRSA / MDR / ESBL and multi-resistant gram-negative bacteria

Exudating Wounds

Based on highly dispersed silicas and polymethylsiloxane that have high adsorptive, anti-inflammatory and wound-healing properties



PATHELEN®HYBRID

Removal of the biofilm

Elimination of germs in the wound

Adsorption of wound exudate

Cleaning the wound from necrosis and pus

Obstruct penetration of bacteria into the tissues

Dressing does not stick to wound

Very fast and easier removal of bacteria from the wound due to block of adhesion active centres

Decrease of exotoxins production

Heals the wound and considerably decreases infection



Follow on Treatment once tissue granulated

PATHELEN®GEL

Seals the wound

Protection of the wound against new germs

Stops Bleeding

Can be used intravenously for internal infection in the cavities

Speeds up the healing process

Can be used in different fields of practical medicine for the treatment of wounds

Complete Pathelen Therapy\*

The future of effective wound treatment

\*(Pathelen Gel in final registration stage)

Affinity of proteins in comparison to antibiotics

Highly accelerated healing time (granulated tissue develops on average within 5 to 10 days)

Proven by factual and strong evidence, licenses and personal testimonials

Can be administered without specialist training

Bacteria can't develop resistance

Easy to store

Highly Effective

Works very fast

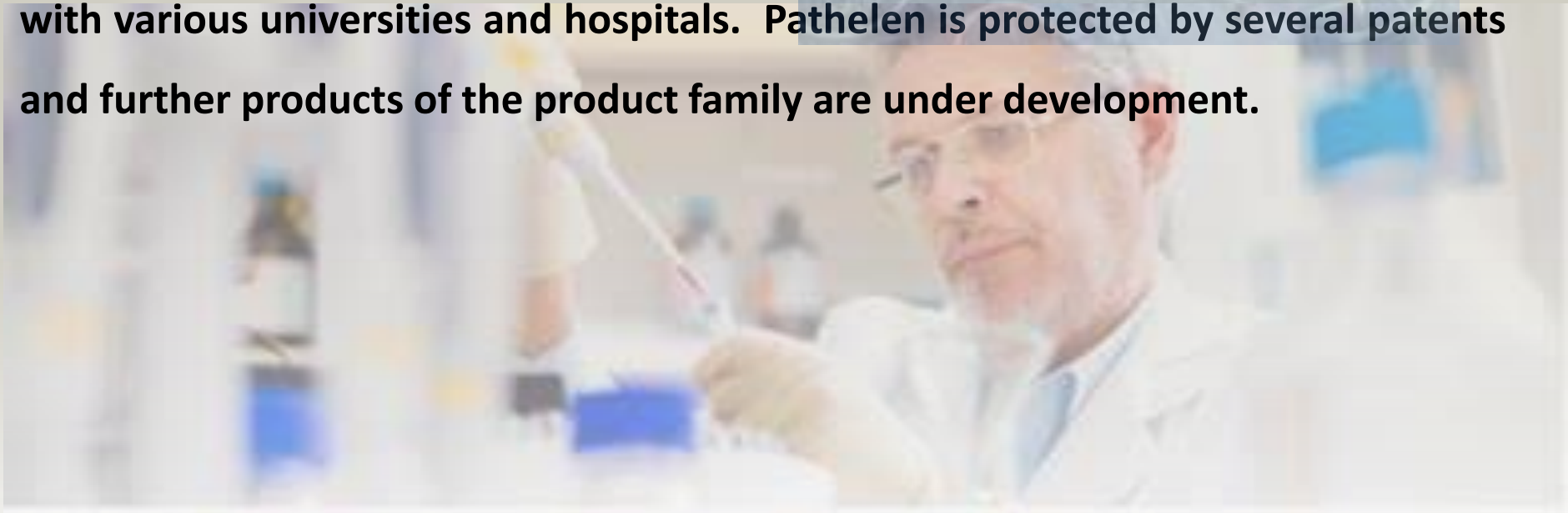
Does not enter the blood circulation

Safe - Has no known side effects





**Pathelen is a development of Pathelen Health Care AG Switzerland. Led by the chief scientist and CEO, Andreas Tausch, the company has developed Pathelen over several years. The development was made in close cooperation with various universities and hospitals. Pathelen is protected by several patents and further products of the product family are under development.**





# COULD YOU IMAGINE A WORLD WITHOUT PATHELEN?



Pathelen® - 2019 Distributed by UniPharma

DISTRIBUTING MEDICAL  
INNOVATIONS  
FOR WOUND CARE PRODUCTS

Licensee Agent Distributor Wholesaler