



University of  
Zurich <sup>UZH</sup>

Balgrist

Universitätsklinik

Programm



The Balgrist

# Von Bangkok über Genf nach Zürich

Warum diabetische Fussinfekte nicht  
überall gleich behandelt werden können

*Prof. Dr. med. Ilker Uçkay*

**Table 1.** Results of selected reports from around the world over the past decade of the microbiology of diabetic foot wounds.

First author [Reference]	Country	Year	Types of wounds	No. of patients	Percentage of isolates from wound culture					
					Staphylococci	Streptococci	Gram- positive	Gram- negative	<i>Ps. aeruginosa</i>	Anaerobes
Carvalho [109]	Brazil	2003	Infections	141	20	4	29	59	7	12
Candel [110]	Spain	2003	Infections	27	49	15	78	22	1	2
Anandi [111]	India	2004	Infections	107	14	—	—	—	—	4
Unachukwu [112]	Nigeria	2005	Gangrene	60	56	—	—	—	—	—
Senneville [113]	France	2005	Bone	76	52	12	—	18	2	5
Abdulrazak [114]	Kuwait	2005	Infections	86	38	17	74	26	18	11
Shankar [115]	India	2005	Infections	77	—	3	42	58	30	6
Yoga [116]	Malaysia	2006	Infections	44	20	—	—	—	14	—
Gadepalli [72]	India	2006	Ulcers	80	20	0	33	51	10	15
Sharma [117]	Nepal	2006	Ulcers	—	38	—	—	—	18	—
Örmen [118]	Turkey	2007	Bone	50	—	—	40	60	—	—
Raja [119]	Malaysia	2007	Infections	194	44	25	45	52	25	—
Çetin [120]	Turkey	2007	Infections	65	18	6	59	41	8	3
Dowd [121]	USA	2008	Ulcers	40	8	37	—	—	15	18
Umadevi [122]	India	2008	Infections	105	17	0	29	71	17	0
Khoharo [123]	Pakistan	2009	Infections	60	20	3	27	73	48	2
Ramakant [35]	India	2010	Ulcers	447	19	3	31	57	17	1
Zubair [124]	India	2010	Infections	60	31	0	38	62	11	0
Özer [43]	Turkey	2010	Infections	78	17	7	38	56	19	—
Mendes [125]	Portugal	2011	Infections	49	84	4	85	19	1	14
Hayat [126]	Pakistan	2011	Infections	85	18	5	27	68	27	2
Pappu [127]	India	2011	Infections	104	21	4	—	>67	23	0

# Recommandation décharge

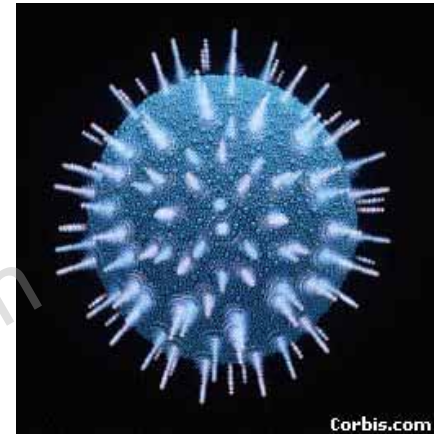


Chaussure DARKO®

+ avec semelle alvéolée pour l'ulcère plantaire



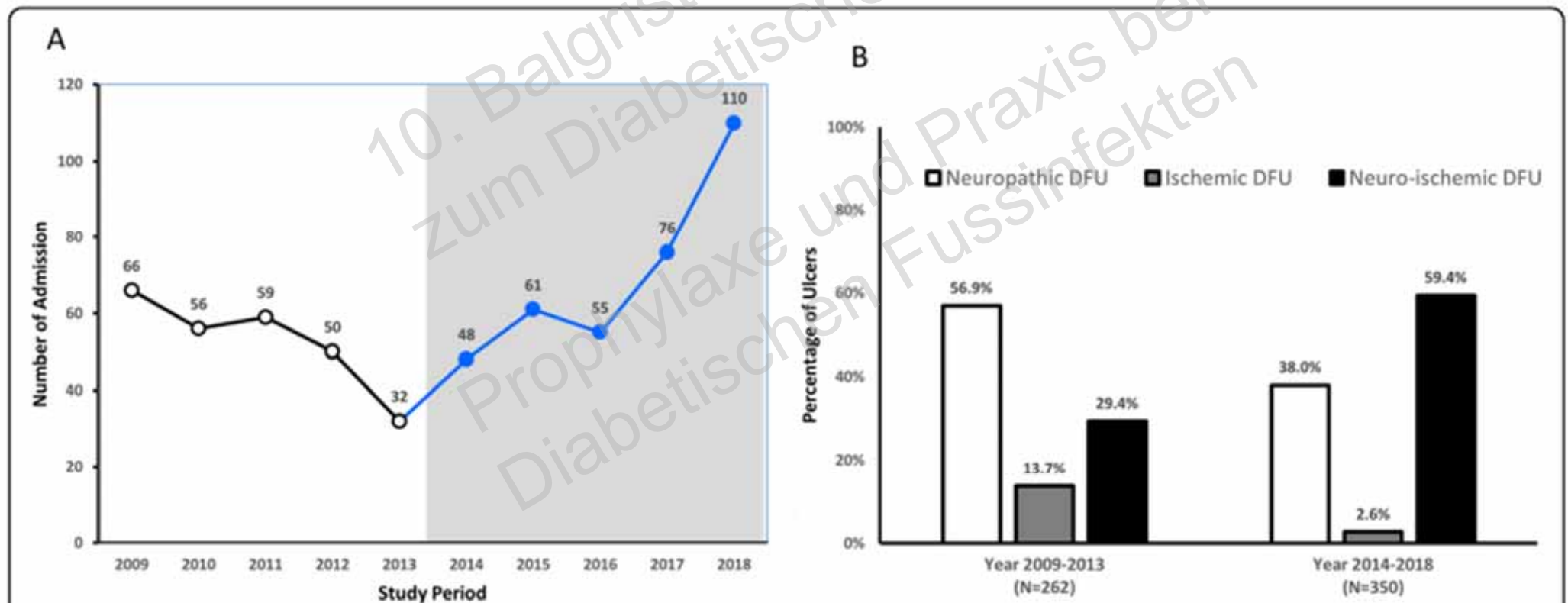
Total Contact Cast: plâtre en résine de marche avec décharge local de l'ulcère.



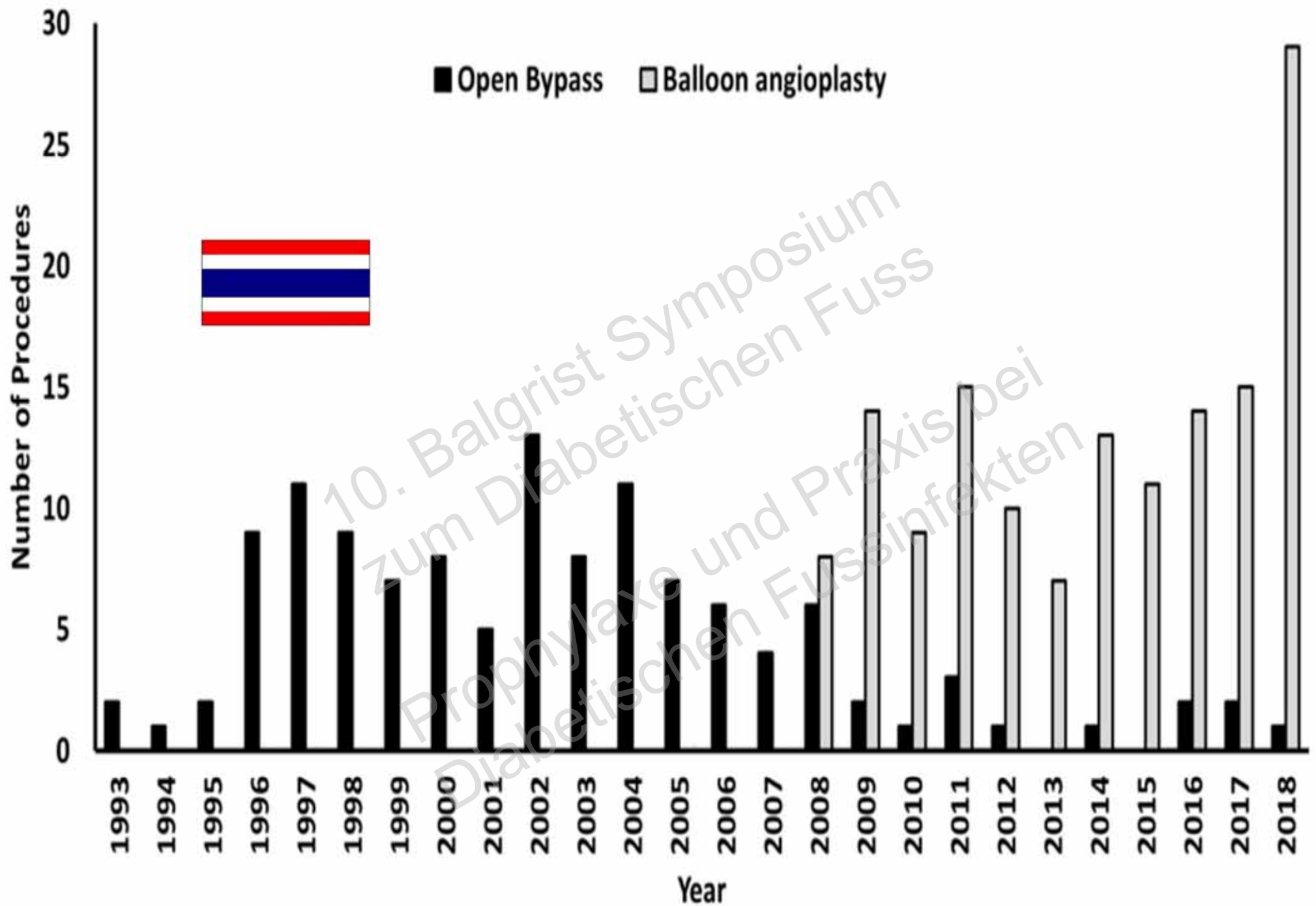
0. Balgrisi Symposium  
zum Diabetischen Fuss  
Prophylaxe und Praxis bei  
Diabetischen Fussinfekten



# Changing the patterns of hospitalized diabetic foot ulcer (DFU) over a 5-year period in a multi-disciplinary setting in Thailand



**Fig. 1** **a** The trend of hospitalized diabetic foot ulcer (DFU) from the current study period (2014–2018) compared with our previous data (2009–2013). **b** Comparison type of DFU between the current study period and previous data



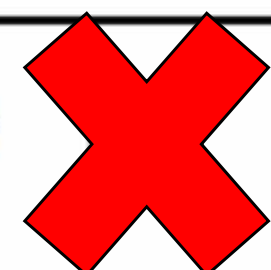
**Fig. 2** Comparison of the annual rate of revascularization procedures from 1993 to 2018 in our hospital



## The impact of the length of total and intravenous systemic antibiotic therapy for the remission of diabetic foot infections\*

Florian Haug<sup>1,\*</sup>, Felix W.A. Waibel<sup>1,\*</sup>, Marcus Lisy<sup>1</sup>, Elin Winkler<sup>1</sup>, Ilker Uçkay<sup>2,3</sup>, Madlaina Schöni<sup>1</sup>

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<sup>2</sup> Clinic for Clinical and Applied Research, National Institutes of Health, Bethesda, Maryland, USA  
<sup>3</sup> Department of Infectious Diseases, University Hospital Zurich, Switzerland



ORIGINAL RESEARCH ARTICLE

Infectious Diseases, Diabetes & Metabolism

Open Access

WILEY

## The association of chronic, enhanced immunosuppression with outcomes of diabetic foot infections

Ilker Uçkay<sup>1,2,3</sup> | Madlaina Schöni<sup>2</sup> | Martin C. Berli<sup>2</sup> | Fabian Niggli<sup>2,3</sup> |



Research Article

## Nutritional Interventions May Improve Outcomes of Patients Operated on for Diabetic Foot Infections: A Single-Center Case-Control Study



Ilker Uçkay<sup>1,2</sup>, Vinoth Yogarasa<sup>1,2</sup>, Felix W. A. Waibel<sup>2</sup>, Annette Seiler-Bänziger<sup>3</sup>, Maja Kuhn<sup>3</sup>, Margrit Sahli<sup>3</sup>, Martin C. Berli<sup>2</sup>, Benjamin A. Lipsky<sup>4</sup>, and Madlaina Schöni<sup>2</sup>



**Katrina McGrath** <https://devpolicy.org/samoas-solution-burden-diabetic-foot-complications-20160411/>






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Prophylaxe und Praxis bei  
Diabetischen Fußinfekten

**BRIEF REPORT**

# Oral amoxicillin-clavulanate for treating diabetic foot infections

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Elodie von Dach RN<sup>1</sup> | Parham Sendi MD<sup>4,5</sup> | Felix Waibel MD<sup>6</sup> | Martin Berli MD<sup>6</sup> |  
Tanja Huber PhD<sup>7</sup> | Benjamin A. Lipsky MD<sup>1,8</sup> | Ilker Uçkay MD<sup>1,9</sup> 

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<sup>3</sup>Service of General Internal Medicine, Geneva University Hospitals, Geneva, Switzerland

<sup>4</sup>Department of Infectious Diseases and Hospital Epidemiology, University Hospital Basel, Basel, Switzerland

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<sup>6</sup>Orthopaedic Surgery, Balgrist University Hospital, Zurich, Switzerland

<sup>7</sup>Pharmacology, Balgrist University Hospital, Zurich, Switzerland

**Aim:** To assess amoxicillin-clavulanate (AMC) for the oral therapy of diabetic foot infections (DFIs), especially for diabetic foot osteomyelitis (DFO).

**Methods:** We performed a retrospective cohort analysis among 794 DFI episodes, including 339 DFO cases.

**Results:** The median duration of antibiotic therapy after surgical debridement (including partial amputation) was 30 days (DFO, 30 days). Oral AMC was prescribed for a median of 20 days (interquartile range, 12-30 days). The median ratio of oral AMC among the entire antibiotic treatment was 0.9 (interquartile range, 0.7-1.0). After a median follow-up of 3.3 years, 178 DFIs (22%) overall recurred (DFO, 75; 22%). Overall, oral AMC led to 74% remission compared with 79% with other regimens ( $\chi^2$ -test;  $P = 0.15$ ). In multivariate analyses and stratified subgroup analyses, oral AMC resulted in similar clinical outcomes to other antimicrobial regimens, when used orally from the start, after an initial parenteral therapy, or when prescribed for DFO.

**Conclusions:** Oral AMC is a reasonable option when treating patients with DFIs and DFOs.

# Controversial Issues Regarding Positive Bone Margins in Surgery for Diabetic Foot Osteomyelitis: A Pilot Study

Javier Aragón-Sánchez, MD, PhD<sup>1</sup> ,  
Gerardo Viquez-Molina, MD<sup>2</sup>,  
and María Eugenia López-Valverde, MD<sup>3</sup>

The International Journal of Lower  
Extremity Wounds

1-7

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# Coûts globaux et durées d'hospitalisation aiguë

## Itinéraire pied diabétique

2013	Nombres hospitalisations	Médian Coûts	Durée d'hospitalisation
<b>Tous les patients</b>	<b>200</b>	<b>20'206 CHF (1'407-300'269 CHF)</b>	<b>17 jours (1-190 jours)</b>
• Sans Caisson	172	18'475 CHF (1'407-178'322 CHF)	15 jours (1-138 jours)
• Avec Caisson	38	29'106 CHF (6'678-300'269 CHF)	36 jours (2-190 jours)
Ortho	68	28'151 CHF (5'145-132'731 CHF)	26 jours (2-118 jours)
Chir cardiovasc	12	23'384 CHF (15'393-300'269 CHF)	16 jours (5-111 jours)
Médecine interne	77	14'553 CHF (2'636-178'322 CHF)	13 jours (1-100 jours)
• Angiologie	8	13'892 CHF (2'636-23'027 CHF)	5 jours (1-63 jours)
Dermatologie	7	76'041 CHF (31'815-160'968 CHF)	79 jours (35-130 jours)

## About IWGDF-Guidelines

**New guidelines 2023**

[Home](#) > [About IWGDF-Guidelines](#)

# International Working Group on the Diabetic Foot

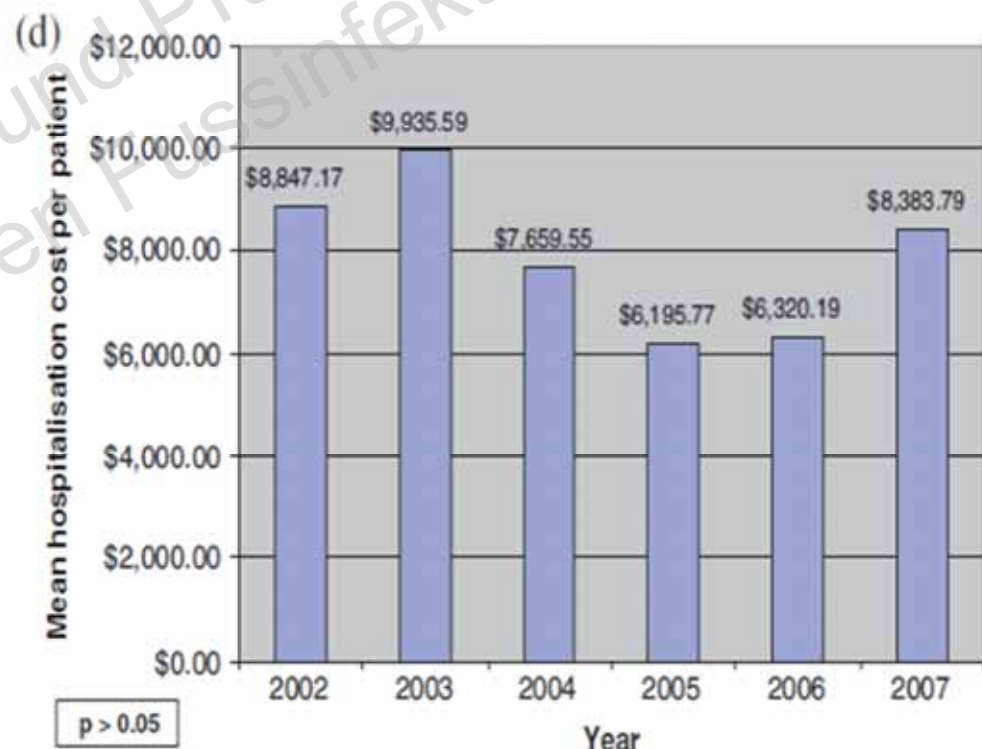
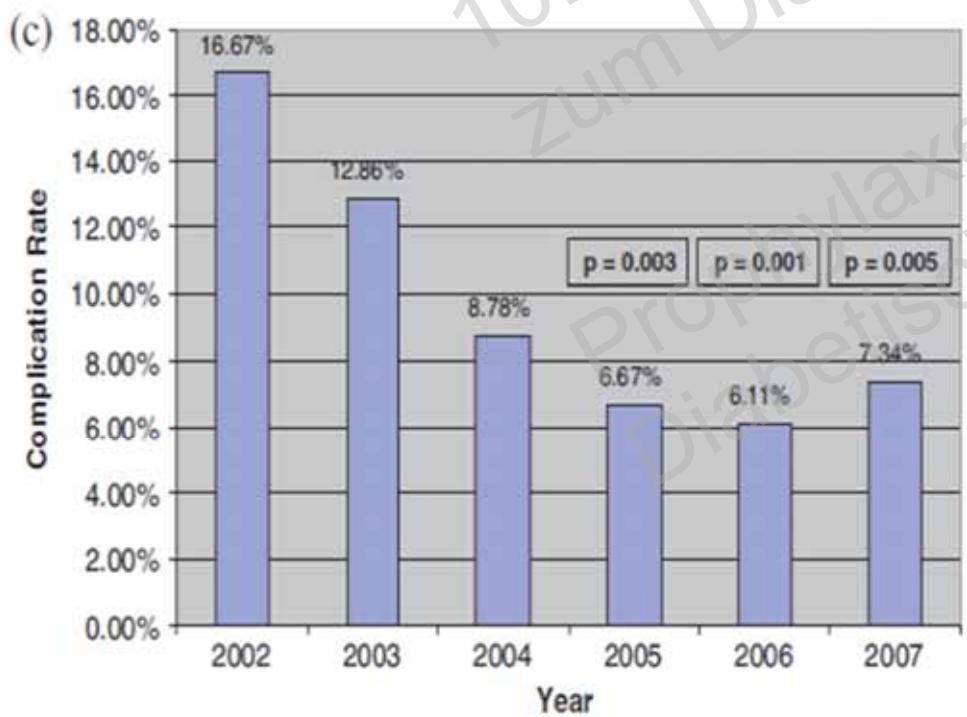
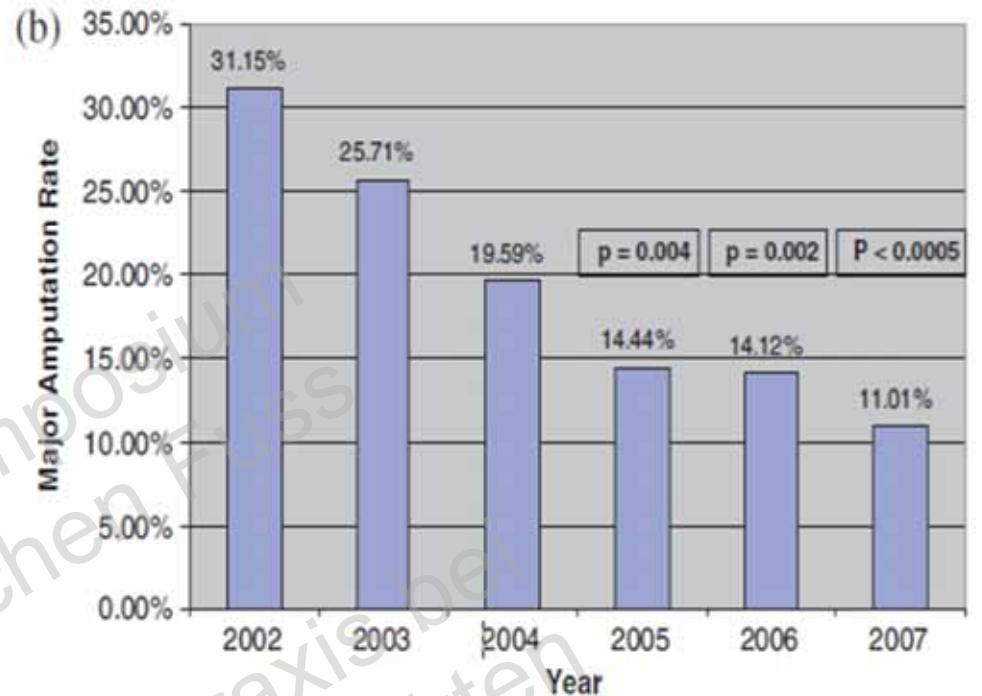
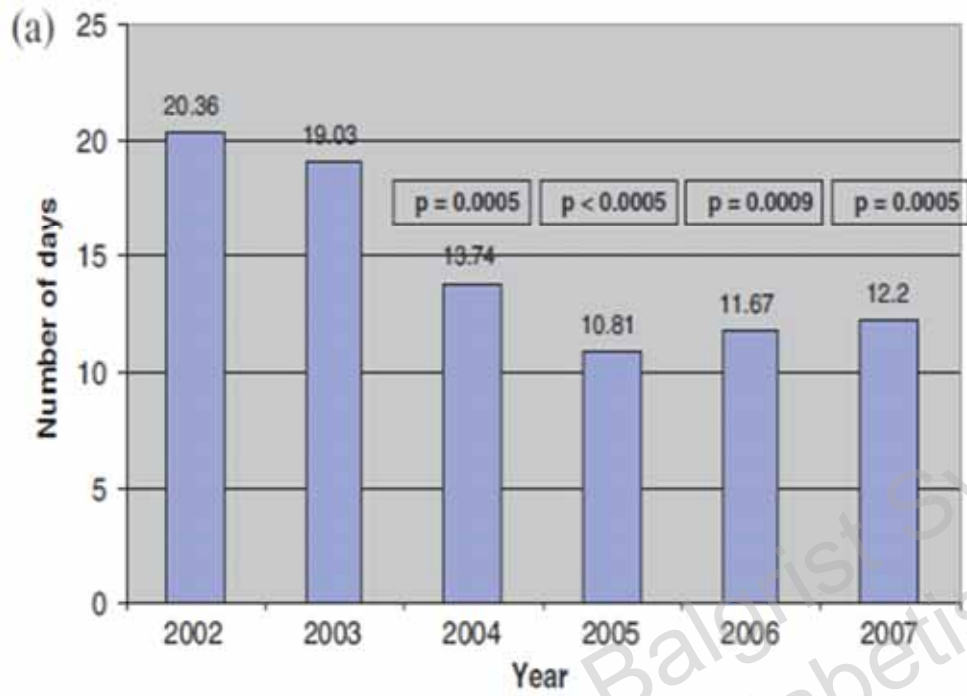
In 1996 the International Working Group on the Diabetic Foot (IWGDF) was created to develop Guidelines on the prevention and management of diabetic foot complications. These are the only international and multidisciplinary Guidelines that are produced through a rigorous, scientific process undertaken by health professionals and researchers from all over the world. In addition, the IWGDF produces systematic reviews and a summary for daily practice, which are all published in an international scientific journal and on this website.

These Guidelines are adapted for many different countries and they have been translated into most (currently 26) of the major languages of the world. To stay current, the IWGDF Guidelines are updated every 4 years; existing Guidelines are rewritten and new chapters are added under supervision of the IWGDF Editorial Board.

# Value of team approach combined with clinical pathway for diabetic foot problems: a clinical evaluation

Aziz Nather, FRCS (Ed)<sup>1\*</sup>, Chionh Siok Bee, MRCP<sup>2</sup>,  
Wong Keng Lin (MBBS)<sup>1</sup>, Chan Xin-Bei Valerie<sup>1</sup>,  
Shen Liang, PhD<sup>3</sup>, Paul A. Tambyah, Dip. ABIM (Inf Dis)<sup>4</sup>,  
Adam Jorgensen<sup>5</sup> and Ajay Nambiar, MRCS (Ed)<sup>1</sup>

<sup>1</sup>Department of Orthopaedic Surgery, Yong Loo Lin School of Medicine, National University of Singapore,

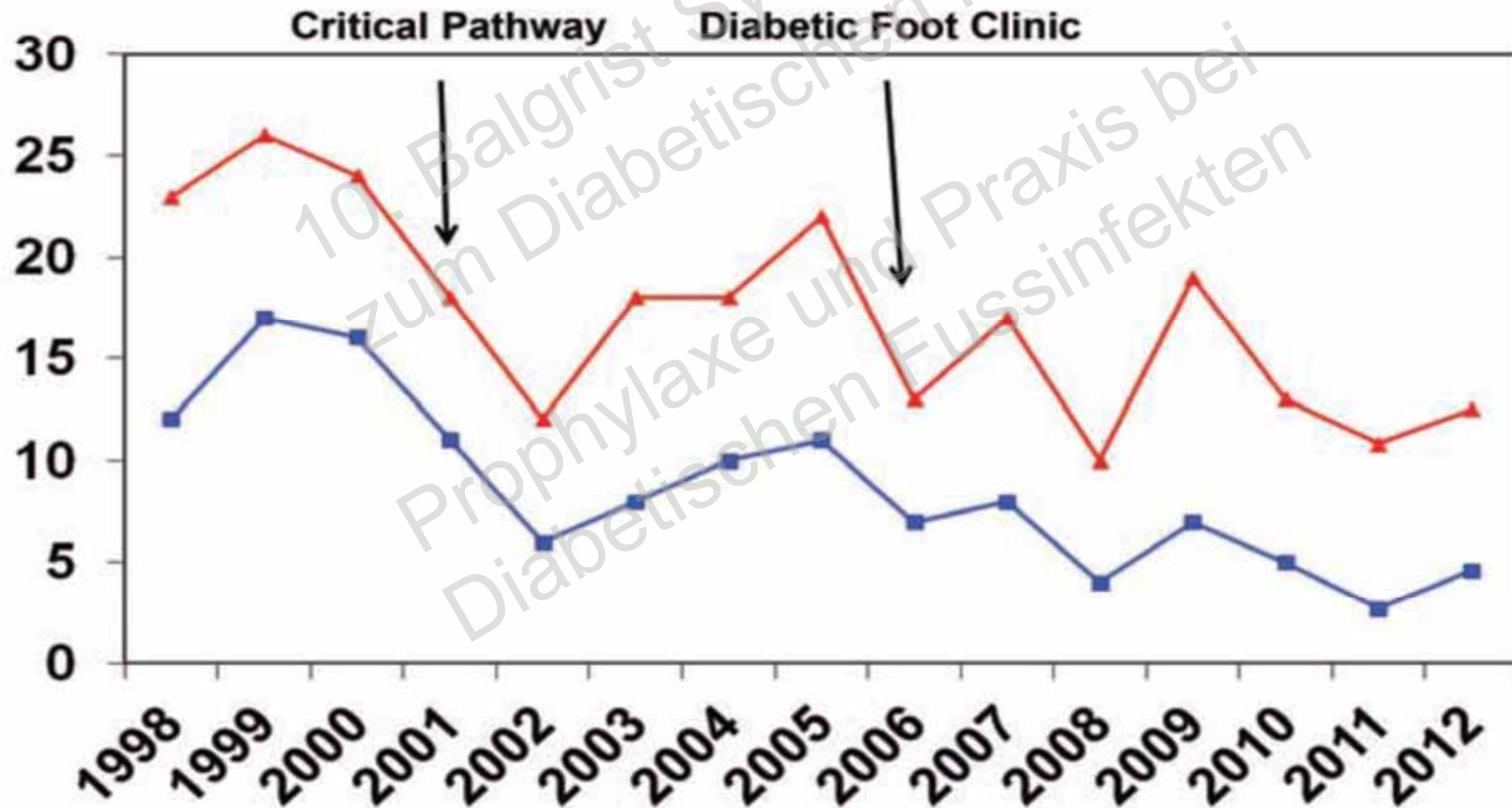




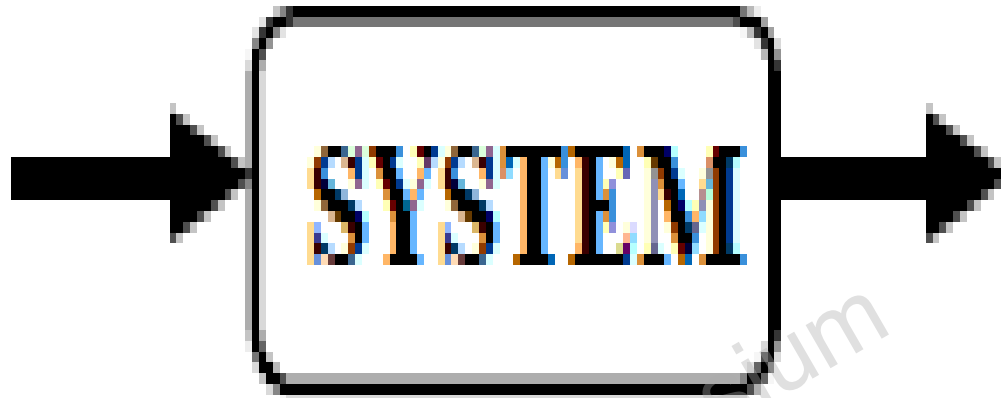
Diego de Alcalá Martínez-Gómez  
M. Angeles Moreno-Carrillo  
Alvaro Campillo-Soto  
Andrés Carrillo-García  
José Luis Aguayo-Albasini

# Reduction in diabetic amputations over 15 years in a defined Spain population. Benefits of a critical pathway approach and multidisciplinary team work

Hospital Universitario J.M. Morales Meseguer, Avda. Marqués de los Vélez sn, Murcia



Entries  
Data  
Input



Outflows  
Results  
Output

Before

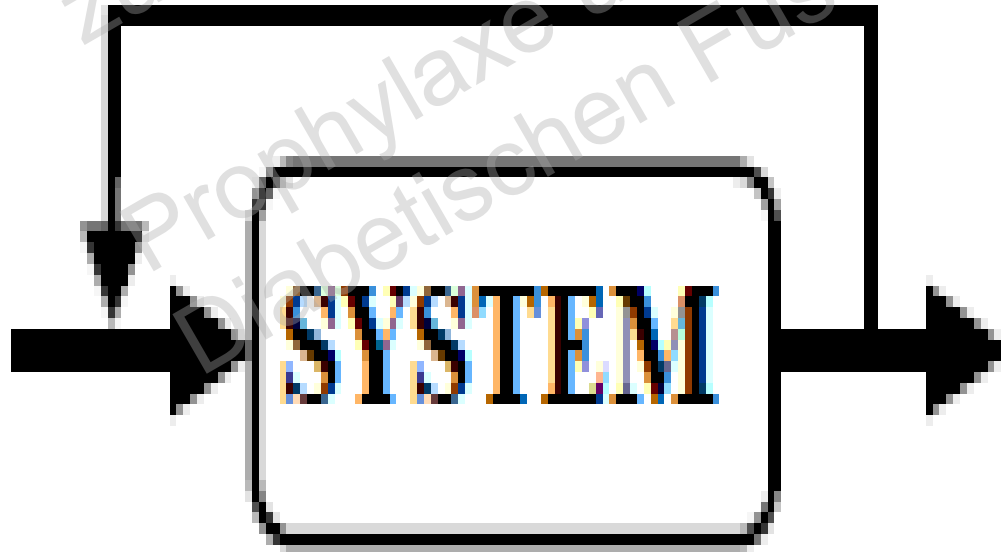


After

Feedback

TIME

Input :



Output

# Notre objectif

bakr - 16.09.2014 11:15

**HUG**  
Hôpitaux Universitaires de Genève

applications cliniques  
support 24040 ou 372 4040

Modules Médicaux | Modules Spécialisés | **Itinéraires Cliniques** | Modules Médico-techniques | Formation | Administration | Applications DIG

Ascite | Asthme | BPCO | Embolie du membre inférieur | Insuffisance cardiaque | Leucémie aiguë/Apl... | **Pied diabétique infecté** | Pneumonie acquise... | Présentation des itinéraires...

10. Balgrist Symposium zum Diabetischen Fußinfekt

**LE SYSTÈME D' INFORMATION EST OPÉRATIONNEL**

**Laboratoires : Mise en œuvre des nouvelles étiquettes dès jeudi 10 juillet à 13h30** nouvelles

Dans le cadre de mise en place de l'automatisation des laboratoires (BATLab), la présentation des étiquettes a évolué. Il y a désormais une étiquette avec un numéro unique par tube. Il est important de respecter cette règle. Le format du papier reste le même. Pour les étiquettes imprimées avant ce changement, il n'y a pas besoin de ré-étiqueter, les laboratoires accepteront les anciennes étiquettes. Pour plus de détails cliquez ici.

**Nouvelle version du résumé du dossier** nouvelles

**Désormais la trajectoire et les données administratives du patient se situent dans l'onglet "C" Cockpit médical.** Pour plus de détails cliquez ici...

- **UTILISATION** d'un algorithme de prise en charge du pied diabétique infecté :  
besoin d'une information **BIP IC pied diabétique infecté 31593**

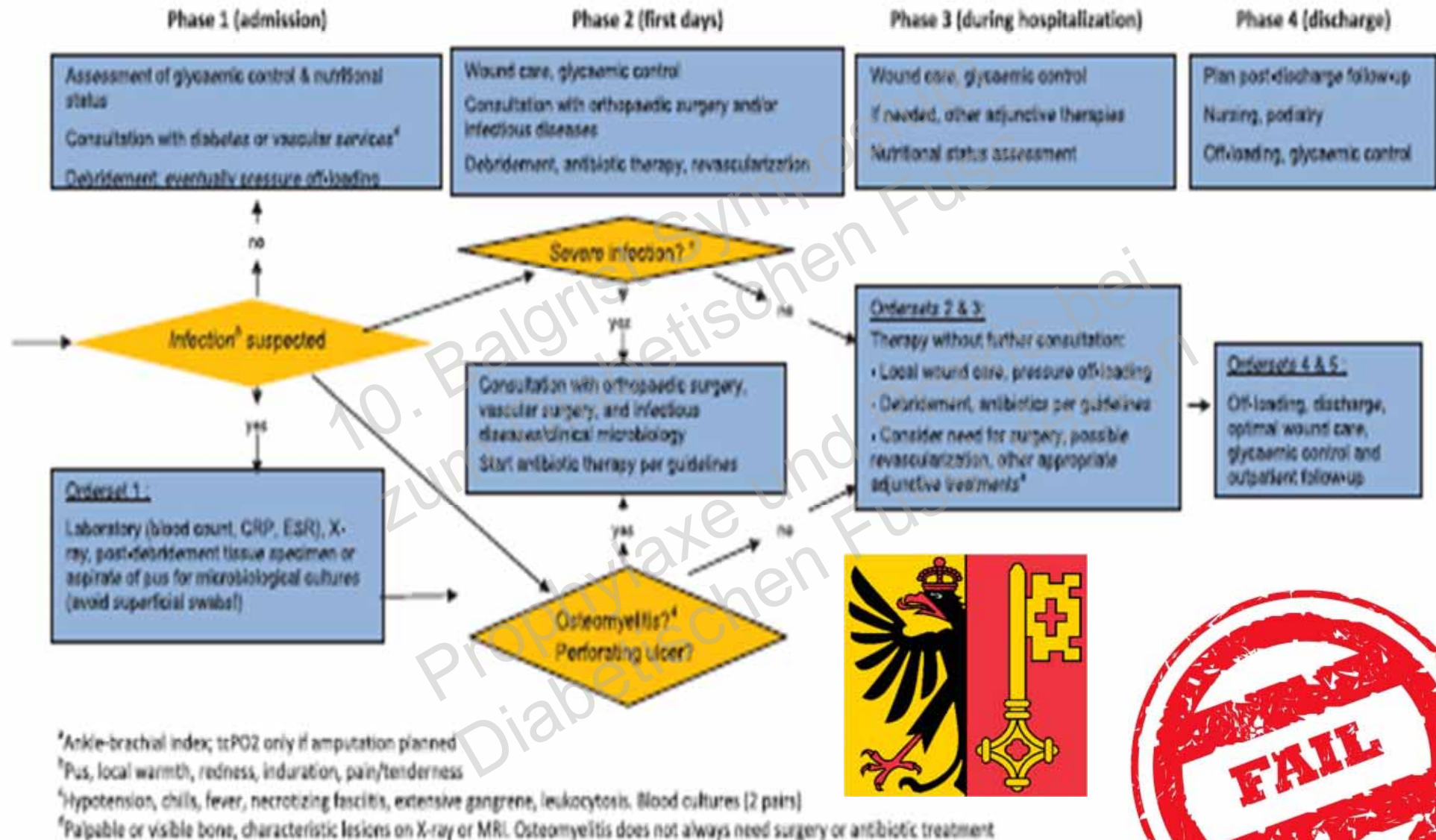


Figure 2. Schema of the clinical pathway for the infected diabetic foot, Geneva University Hospitals.

# FAST TRACK PATHWAY FOR DIABETIC FOOT ULCERATION DURING COVID-19 & BEYOND



- CO-MORBIDITIES**
- HEART FAILURE CLASS
  - END STAGE RENAL FAILURE
  - DEPRESSION

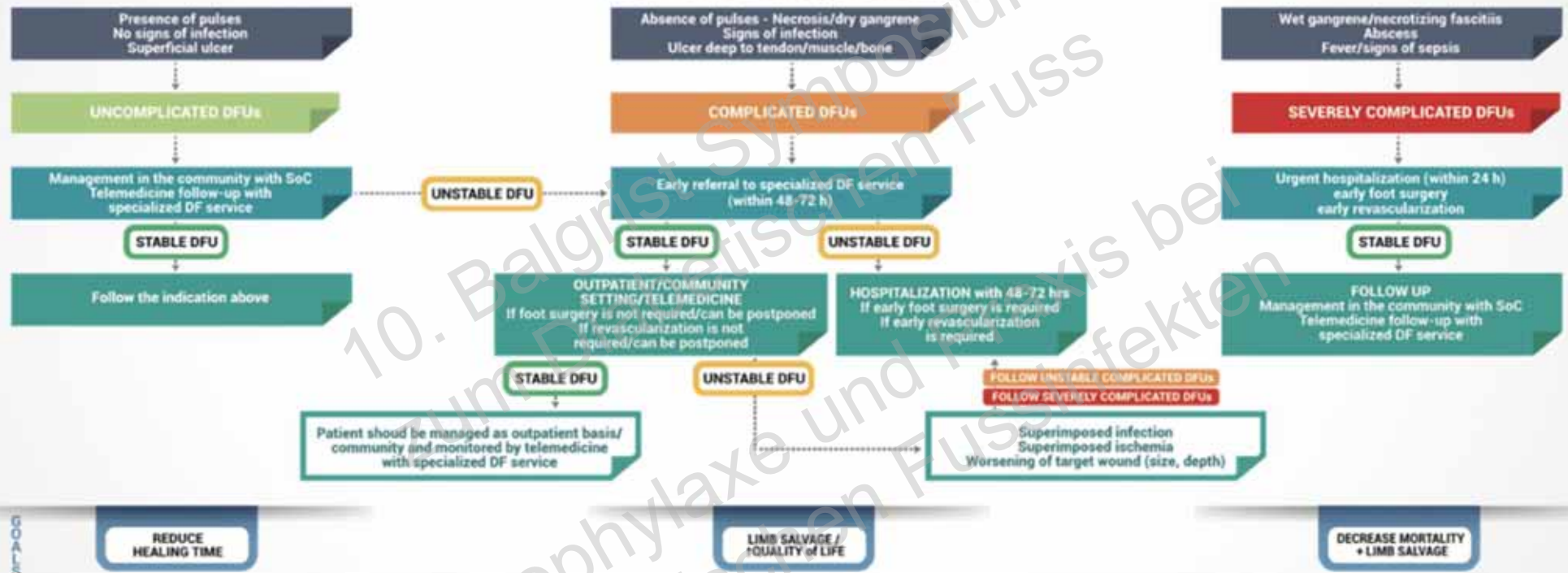
## FIRST ASSESSMENT

- HOLISTIC APPROACH\***
- MEDICAL HISTORY
  - CLINICAL EXAM.
  - BIOLOGY
- \* : take care of psycho-social context of patient

INVESTIGATION FOR SIGNS/SYMPTOMS OF COVID-19 INFECTION



## PATIENT WITH DIABETIC FOOT ULCERATION



## PRINCIPLES OF STANDARD OF CARE

**Offloading:** Reduction of extrinsic and/or intrinsic biomechanical stress/plantar pressure is essential for ulcer protection and healing. The use of Non-removable knee-high offloading devices, total contact casts (TCC), removable walkers or specific footwear should be used tailored to individual need and according to local available resources. Patients should be educated to minimise standing and walking. Regular follow-up should be undertaken to ensure clinical effectiveness and compliance.

**Restoration of foot perfusion:** In patients with peripheral arterial disease (ankle pressure <50mm Hg, ABI <0.5, toe pressure <30mmHg or T<sub>sp</sub>O<sub>2</sub> <25 mmHg), revascularisation should be considered. When an ulcer does not show signs of healing within 4 weeks, despite optimal management, further vascular assessment and revascularisation should be considered (even if the tests above fall within acceptable /normal ranges).

**Treatment of infection:** When there are clinical signs of infection, empiric and

broad-spectrum antibiotic therapy should be administered after obtaining microbiological samples (ideally deep tissue), followed by adjustments according to clinical response and microbiological results. Removal of any necrotic or non-viable tissue following comprehensive assessment of infection severity is required.

**Metabolic control/Holistic management:** Metabolic approach requires optimisation of glycaemic control (if necessary with insulin), the treatment of malnutrition and oedema if present. Optimal management of relevant co-morbidities is mandatory.

**Local wound care:** Frequent ulcer inspection/assessment, debridement and redressings should be undertaken. Dressing selection is based upon ulcer findings (characteristics of wound bed, exudation, size, depth, local pain). In case of neuro-ischemic ulcers, dressings with TLC-NOSF (Lipido-Colloid Technology with Nano-OligoSaccharide Factor) should be considered.

### SIGNS OF ALERT : CLINICAL PICTURES TO CONSIDER EARLY REFERRAL TO SPECIALIZED DIABETIC FOOT SERVICES)

- Superimposed infection (onset of hyperemia around the wound, cellulitis, pus secretion, new area of wet gangrene, oedema, pain, fever)
- Superimposed ischemia or ischemia evolution (new areas of necrosis or gangrene, rest pain, hyperemia of the foot)
- Worsening of target wound (extension of ulcer size, involvement of soft tissues/bone, signs of ischemia or infection as above)

LETTER TO THE EDITOR

Open Access

# An internet-based algorithm for diabetic foot infection during the COVID-19 pandemic



Chao Liu<sup>1†</sup>, Wen-Li Shi<sup>1†</sup>, Jia-Xing You<sup>1</sup>, Hong-Ye Li<sup>1</sup> and Lin Li<sup>2\*</sup>

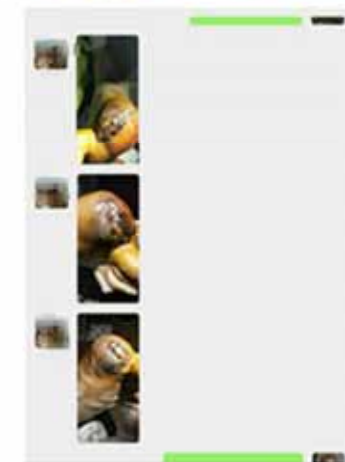
A



B



C



10th Balgrist Symposium  
zum Diabetischen Fuss  
Prophylaxe und Praxis bei  
Diabetischen Fussinfektionen

# Outcomes of hospitalized diabetic foot patients in a multi-disciplinary team setting: Thailand's experience<sup>☆</sup>

Yotsapon Thewjitcharoen, MD<sup>\*</sup>, Sirinate Krittiyawong, MD, Sriurai Porramatikul, MD, Wyn Parksook, MD, Lapakorn Chatapat, MD, Orawan Watchareejirachot, RN, Jeeraphan Sripatpong, PT, Thep Himathongkam, MD, FACP, FACE

Diabetes and Thyroid Center, Theptarin Hospital, 3858 Rama IV Rd, Klong Toey, Bangkok 10110, Thailand

Y. Thewjitcharoen et al. / Journal of Clinical & Translational Endocrinology 1 (2014) 187–191

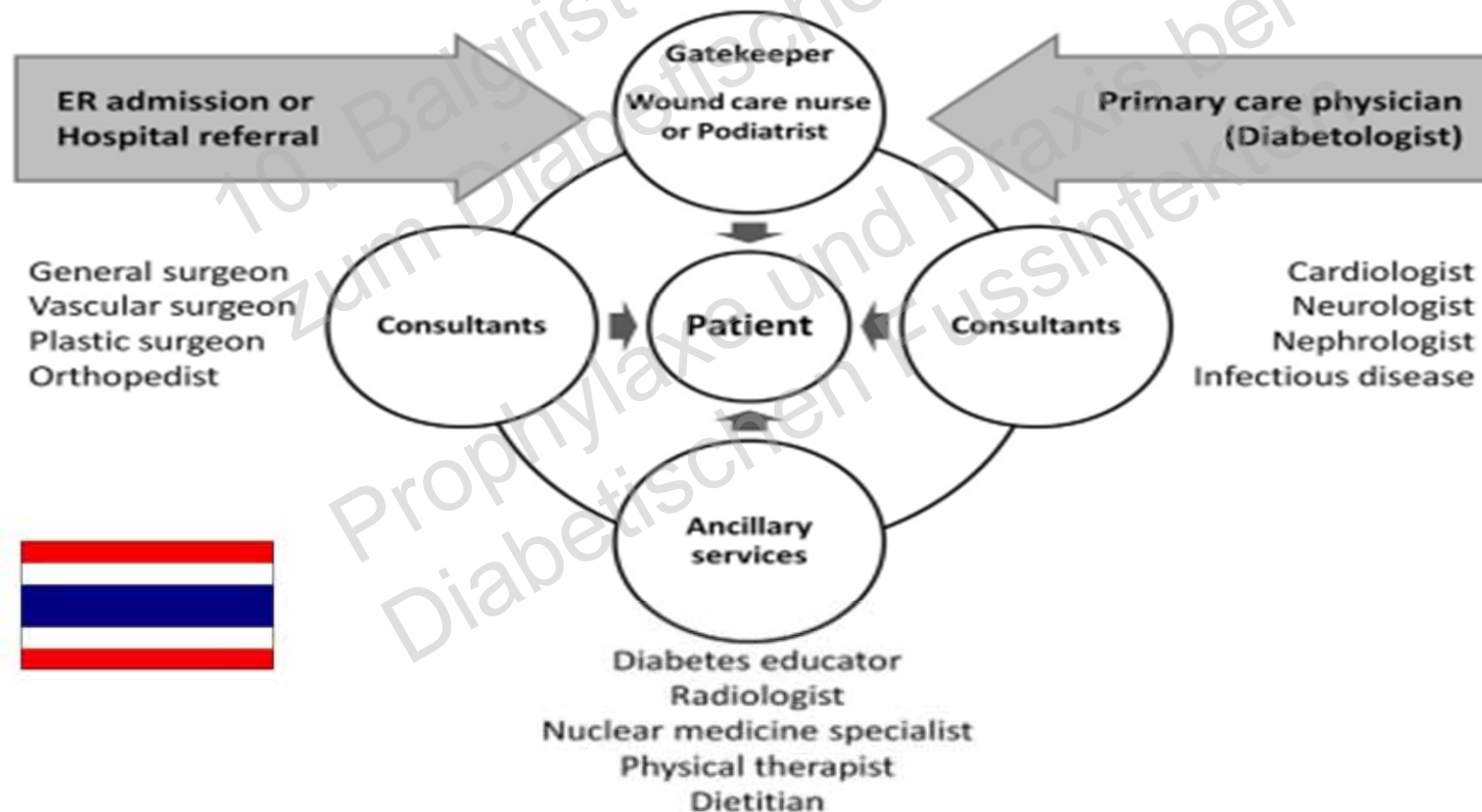


Figure 1. Outline of hospitalized diabetic foot management which diabetologists take the lead role in the foot care multidisciplinary team.

Version 2020

# Diabetic foot infection

Key issues and actions in initial management of acute diabetic foot syndrome and foot ulcer (DFS/DFU)

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Phyhylake und Praxis bei  
Diabetischen Fussinfekten





# 5 documents for a streamlined practice

Version 2020

## Offloading

Key issues and actions in initial management of acute diabetic foot syndrome and foot ulcer (DFS/DFU)



### Issue

**Plantar foot ulcers +/- deformity without uncontrolled infection\* or critical ischemia\* (excl. ulcers of tip of toes or heel ulcers)**

### Action

**A) Gold standard: total contact cast (TCC), non-removable prefabricated ankle foot orthosis (knee-high) with individualized foot-orthosis interface, if indicated**

Competency & responsibility

Level 1\*\*  
Level 2/3



### Contraindications and CAVEATS

**Do not use non-removable devices for heavily exudating ulcers and uncontrolled infections requiring frequent care or inspection and in critically ischaemic limbs**

Version 2020

## Practical guidance

for best practice in management of acute diabetic foot syndrome and foot ulcer (DFS/DFU)



Version 2020

## Peripheral arterial disease (PAD)

Key issues and actions in initial management of acute diabetic foot syndrome and foot ulcer (DFS/DFU)



Version 2020

## Diabetic foot infection

Key issues and actions in initial management of acute diabetic foot syndrome and foot ulcer (DFS/DFU)



Version 2020

## Charcot Foot

### Osteo-arthropathy

Key issues and actions in initial management of acute diabetic foot syndrome and foot ulcer (DFS/DFU)





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zum Diabetischen Fuss  
Prophylaxe und Praxis bei  
Diabetischen Fussinfekten



# Implementation – Pilot sites

