



## Diabetic Control & Pressure Ulcers: fighting fatal complications and improving quality of life

Diabetes is an important battlefield for better health for EU citizens. According to the latest WHO statistics, about 422 million people worldwide have diabetes, a number almost as high as all the EU-27 population put together and a figure likely to more than double in the next 20 years.<sup>1</sup> Looking closely at the EU population, in 2010 approximately 9% of the adult population (20-79 years) was diabetic, with the absolute around 33 million in 2010, which will rise to 38 million by 2030.<sup>2</sup>

With the growing diabetes incidence, healthcare professionals and planners are encouraged to pay further attention to the major complications of this disorder. **Diabetes can lead to debilitating and acute complications with a serious impact on people health**, including cardiovascular diseases and stroke, kidney failure, amputations and blindness. The complexity of this chronic illness requires continuous medical care with multifactorial risk-reduction strategies beyond glycaemic control. Patient self-management education and continuous training for health workers are critical to preventing fatal complications.<sup>3</sup>

A number of studies have demonstrated that due to diabetic complications, people with diabetes have **hospital admission rates between 2 and 6 times higher** than people without diabetes.<sup>4</sup> Over 50% of people with diabetes suffer from at least one complication that, most of the time, requires hospitalisation, which reflects in targeted patient safety practices since certain harms may occur in the delivery of care to diabetic patients. Adverse events and errors in diabetes care can cause significant morbidity and, too often, disability and even death.

In order to avoid adverse events and their dramatic outcomes, healthcare workforce needs to identify key and common complications in diabetic care. **Poor circulation and infection are among the most common complications that effect diabetic patients.** These conditions demand treatments for providing a holistic medical approach whilst ensuring patient safety.

**Pressure ulcers are the origin of one of the most acute condition of diabetic patients: diabetic foot injuries.** Diabetic complications eventually affect every part of the body, but they frequently involve the feet. Diabetes can impair blood circulation and injuries healing by narrowing the arteries that carry blood to the legs, which leads to peripheral neuropathy, a major cause of mechanical stress. A

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<sup>1</sup> The World Health Organisation, *Fact sheet on Diabetes*, updated November 2017. Available at: <http://www.who.int/mediacentre/factsheets/fs312/en/>

<sup>2</sup> The European Commission, *DG Health and Food Safety Fact sheet on Diabetes*. Available at: [https://ec.europa.eu/health/major\\_chronic\\_diseases/diseases/diabetes\\_en#fragment3](https://ec.europa.eu/health/major_chronic_diseases/diseases/diabetes_en#fragment3)

<sup>3</sup> American Diabetes Association, *Standards of Medical Care in Diabetes*, January 2017 Volume 40. Available at: [http://care.diabetesjournals.org/content/diacare/suppl/2016/12/15/40.Supplement\\_1.DC1/DC\\_40\\_S1\\_final.pdf](http://care.diabetesjournals.org/content/diacare/suppl/2016/12/15/40.Supplement_1.DC1/DC_40_S1_final.pdf)

<sup>4</sup> Jean Comino E, Fort Harris M and Others, *Impact of diabetes on hospital admission and length of stay among a general population aged 45 years or more: a record linkage study*, BMC Health Serv Res. 2015; 15: 12. Published online 22 January 2015. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4310177/>



non-healing wound or pressure ulcers on the foot can develop into a deep sore that quickly becomes profoundly infected. **This makes diabetic foot injuries one of the most serious and costly complications of diabetes.**

Throughout their study recommendations and practice-oriented guidance, **EWMA and EPUAP have strongly reminded that prevention and prompt treatment of foot injuries** are vital for the safety of diabetic patients and for avoiding possible subsequent limb amputation. Evidence shows that more than half of all foot ulcers will become infected, requiring hospitalization, and 20% of lower extremity infections will result in amputation.<sup>5</sup>

As the diabetes pandemic progresses globally, so does the problem of foot ulcers. Achieving control of diabetes not only relies on blood glucose levels and proper nutrition, but also on proper footwear, adequate blood supply to extremities and pressure ulcer prevention. To avoid amputation becoming an inevitable outcome for many patients, a paradigm shift is urgently needed. Adequate training for health workforce, patient education, early assessment, and aggressive treatment by a multidisciplinary team represent the best approach to reduce complication and to ensure limb preservation.<sup>6</sup>

Due to the high morbidity and mortality rates associated with diabetic wounds and infections, **wounds and pressure ulcers must be treated holistically** in order to identify underlying issues and reduce risk factors that are causing wounds in the first place.<sup>7</sup> A holistic approach means in practice: (1) optimal diabetes control; (2) effective local wound care; (3) infection control; (4) pressure relieving strategies; and (5) restoring pulsatile blood flow.<sup>8</sup>

Unfortunately, treatment and patient safety measures are often not so methodical and quite varied across hospital settings. In Europe, **diabetic foot care has been described as fragmented and unsystematic**, and largely depends on which practitioner the patient happens to be seeing and which resources are available locally.<sup>9</sup>

To tackle the challenge of jeopardization, many stakeholders have called on the European Commission to present an EU strategy on diabetes to gather more evidence on prevention and management of its complications on which base treatment strategies and to promote the development of common clinical guidance.

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<sup>5</sup> Armstrong DG, Boulton AJM, Sicco AB, *Diabetic Foot Ulcers and Their Recurrence*, The New England Journal of Medicine, 376;24, 15 June 2017

<sup>6</sup> Driver VR, Fabbi M, Lavery LA, Gibbons G, *The costs of diabetic foot: The economic case for the limb salvage team*, Boston, Mass; and Georgetown, Tex, 2010.

<sup>7</sup> Diabetic patients with leg and foot ulcers have a lower 5-year survival (43%) than nondiabetic ulcerated subjects (56%) and general population controls (68%). Source: Chammas N, Hill R, and Edmonds M, *Increased Mortality in Diabetic Foot Ulcer Patients: The Significance of Ulcer Type*, Published online in April 2016. Available at: <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4860228/>

<sup>8</sup> Wounds International, *op. cit.*

<sup>9</sup> The International Diabetes Federation, *Clinical Practice Recommendations on the Diabetic Foot*, 2017



In this frame, in 2016, through a Written Declaration voted in May 2016, the European Parliament called upon the Commission and Council to prioritise diabetes as a major European health, social and economic concern and to develop an **EU strategy for diabetes prevention, diagnosis and control**.<sup>10</sup> The Declaration, signed by over 400 Members of the European Parliament, aimed to encourage Member States to establish national diabetes plans and to develop uniform diabetes management programmes based on best practices and evidence-based treatment guidelines.

In order to ensure better wound and pressure ulcer prevention and care across Europe, such a programme should pay particular attention to diabetic foot as one of the most dangerous and common complications in diabetic patients. **Any EU strategy should include recommendations on national guidance on the understanding of prevention, comprehensive management and treatment of the diabetic foot**, currently lacking amongst healthcare providers. Below three key recommendations to keep in mind while developing national guidance on diabetes management are outlined:

- In diabetic foot control, achieving safe diabetic care requires active attention at all level, starting from **promoting healthy and active life**: numerous studies have shown that blood glucose levels are improved by increasing physical activity, which has a direct impact on the blood circulation, wound healing and pressure ulcers prevention.<sup>11</sup> Exercise has been shown to improve blood glucose control, reduce cardiovascular risk factors as well as decline in mobility among overweight patients with diabetes.<sup>12</sup>
- In addition, any future national guidance on diabetes should **deal with this chronic disease holistically**, this means that any effective and modern diabetes care should be done in a setting in which teamwork is ensured, well trained doctors, dieticians, physiotherapist and other non-medical health workers must work together, more cohesively, in the care of diabetic patients. In this frame, nursing ratios should be higher when patients with diabetes are hospitalized to guarantee that any complication or adverse event are prevented or promptly treated.
- Last but not least, a **no blame reporting system** is likely to encourage paradigm change, providing less thinking about who is to blame and more about how to prevent adverse events and errors caused by the system in which health care professionals work.

In 2015, in Europe, there were over 266 000 deaths due to diabetes.<sup>13</sup> It is time for the EU and its Member States to prioritise diabetes and its complications in the health strategy as a major disease representing a significant burden across the EU. With the lifetime incidence of foot ulcers occurring in up to 25% of patients,<sup>14</sup> we need to pay far more attention to the diabetic foot and its

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<sup>10</sup> European Parliament, *Written Declaration on diabetes*, Reference N. 0008/2016. Signed by 405 Members of the European Parliament and adopted on 02 May 2016.

<sup>11</sup> The International Diabetes Federation, *op. cit.*

<sup>12</sup> American Diabetes Association, *Standards of Medical Care in Diabetes*, January 2017 Volume 40.

<sup>13</sup> European Parliament, *op. cit.*

<sup>14</sup> Armstrong DG, Boulton AJM, Sicco AB, *op. cit.*



consequences. Keeping diabetic patients on their feet, walking and mobile is fundamental in preventing the regression of health condition and in guaranteeing a long-term quality of life.

*This article is published in December 2017 by the European Pressure Ulcer Advocacy Panel (EPUAP) and the European Wound Management Association (EWMA). The publication is part of the activities of the “Joint EPUAP & EWMA PU prevention & patient safety advocacy project”.*

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