

# Assessment of services for diabetes mellitus in clinics in Ramallah, West Bank, occupied Palestinian territory: an evaluation study

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**Background** Diabetes mellitus is a leading cause of morbidity and mortality worldwide. Few reliable data about its management and complication rates have been reported in the occupied Palestinian territory (oPt). Services are offered to patients with diabetes by four main providers: Ministry of Health (MoH), UN Relief and Works Agency for Palestine Refugees in the Near East (UNRWA), non-governmental organisations (NGOs), and the private sector. However, the main components of their services have not been assessed systematically in the reports. Our objective therefore was to assess the provision of services for disease management (including infrastructure and related equipment), training needs of health-care personnel, adherence to guidelines for disease management by the clinics of the MoH, UNRWA, and NGOs in Ramallah, West Bank, oPt, for patients with diabetes.

**Methods** We assessed 11 clinics in Ramallah between Jan 27 and Feb 24, 2009. Four were clinics of the MoH, three UNRWA, one NGO, and three joint clinics of MoH and NGOs. We assessed the clinics through semistructured interviews with the doctors, nurses, pharmacists, and laboratory technicians managing patients with diabetes; examination of the infrastructure of the clinics, measurement of crowding, and review of one to three patients' consultations per clinic with doctors and nurses; and review of three to five sample records per clinic to ascertain their completeness. Consent was obtained from the various stakeholders to assess their clinics, and health professionals working at the clinics to interview them and review the records of their patients. The aim of reviewing the records was to assess their completeness and we did not use the names of the patients or the actual data on the record.

**Findings** The management guidelines and provision of services for patients with diabetes differed between providers. Services were most centralised at MoH clinics. Insulin was provided at two clinics of MoH, one joint clinic of MoH and NGO, and all clinics of UNRWA. All health-care personnel at the clinics of UNRWA and NGO and the joint clinics of MoH and NGOs were trained according to their respective provider's guidelines compared with none of those at the clinics of MoH. Weight and height were measured and body-mass index was calculated at one clinic of MoH, clinic of the NGO, two joint clinics of MoH and NGO, and all clinics of UNRWA. Blood pressure was measured at three clinics of MoH, two joint clinics of MoH and NGO, clinic of NGO, and all clinics of UNRWA. Equipment for the assessment of diabetic complications was available in some clinics but rarely used. For example, ophthalmoscopes were available at three clinics of MoH, three joint clinics of MoH and NGO, one clinic of UNRWA, but used in one joint clinic; visual acuity charts were available at one clinic of MoH, one joint clinic of MoH and NGO, and two clinics of UNRWA; electrocardiogram machines were available at three clinics of MoH, three joint clinics of MoH and NGO, two clinics of UNRWA, and clinic of the NGO, but used in one joint clinic of MoH and NGO, two clinics of UNRWA, and clinic of the NGO; tuning forks were available in two joint clinics of MoH and NGO and two clinics of UNRWA. Monofilament was not available in any of the clinics. Foot-care equipment was available at one UNRWA clinic but was not used. The glycated haemoglobin A<sub>1c</sub> test was available at the clinic of the NGO and the three joint clinics of MoH and NGO. Microalbumin test was not available at any of the clinics. A nutritionist was available at the clinic of the NGO and one joint clinic of MoH and NGO. The consultation time with doctors and nurses at the clinics of the MoH and UNRWA was short (3–10 min) and consultations were not individualised or recorded. Records at the clinics of UNRWA, clinic of the NGO, and the joint clinics were better organised and more complete than were those of the MoH clinics. These clinics had special records with complete information for patients with diabetes whereas the clinics of MoH had different types of records with incomplete information. Monitoring of patients was more systematic at the clinics of UNRWA and NGO and the joint clinics of MoH and NGO than at the MoH clinics. In the clinics of UNRWA and NGO and the joint clinics of NGO and MoH, patients were given appointments and were monitored according to the protocols in these clinics (for laboratory tests and physical examination), whereas at the clinics of MoH an appointment system and protocols for monitoring were not used.

**Interpretation** High numbers of patients, insufficient staff training, and inadequate infrastructure are the main impediments to the proper management of diabetes in the oPt. Recommendations to improve services for patients with diabetes are to standardise the different guidelines and have a comprehensive approach to management with provision of training for health-care providers with respect to patient education and an improved system for keeping records of patients. Since undertaking our assessment of the services for diabetes provided by the clinics in Ramallah,

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**the MoH has taken action by developing a strategy for the management of non-communicable diseases, with a WHO STEPwise approach to risk factor surveillance of such diseases, and training staff in diabetes care.**

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**Contributors**

NM contributed to the research design, development of the methods, and data gathering and analysis. AS contributed to data gathering and analysis. RK and AH contributed to the research design and development of the methods. All authors contributed to the writing of the Abstract.

**Conflicts of interest**

We declare that we have no conflicts of interest.

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