

**CDMS (Chronic Disease Management System) - the nuts and bolts of Diabetes Registry**

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**Diabetes Registry – Why and So What?**

Chronic diseases such as diabetes, cardiac diseases and stroke are emerging public health problems that strain our healthcare system.

Care of patients with chronic diseases requires a proactive, population-based, evidence-based and patient-centric approach - spanning a continuum over their lives and across primary, secondary and tertiary levels of care. It is imperative that the necessary information be available to providers at the point of care.

The reasons for building a chronic disease registry to ensure quality care are compelling. Information technology and registries provide a powerful solution and are critical components to high quality chronic disease management.

**NHG had the foresight to plan for a fundamental systems and information strategy.**

**So What** – ultimate end-point is our patients as the beneficiaries:

- Care is consistent, safe, cost-effective, seamless across all NHG institutions
- Better outcomes, delay onset of costly and debilitating complications

**What is a chronic disease registry?**

A registry is a computerised ‘census’ of every patient with the disease in a database. It captures and tracks key patient information to help doctors and care team members monitor quality and identify gaps in care.

**The CDMS design**

From 2006, the NHG began its development of an enterprise-wide CDMS.

Fig. 1: Linking the parts together

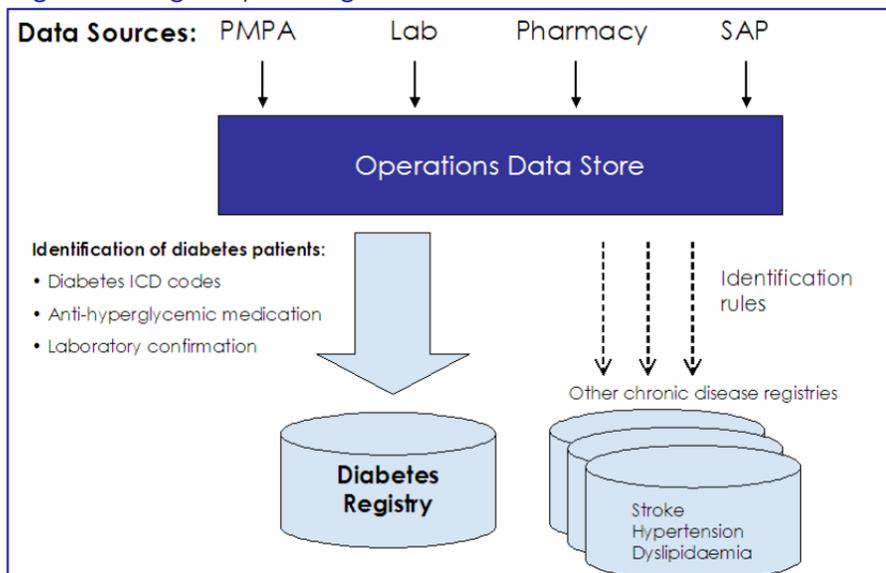
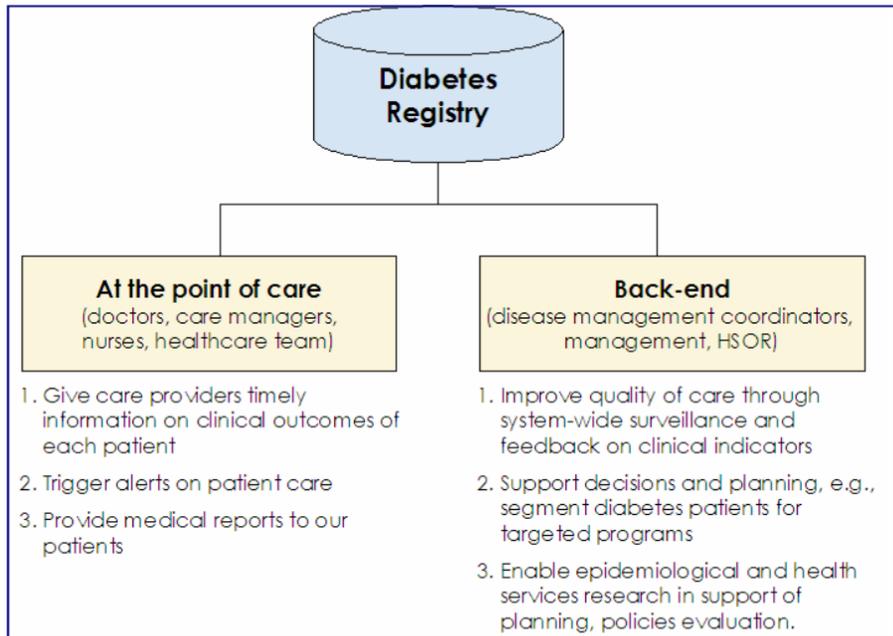


Fig. 2: How the Registry is used to improve quality of diabetes care



The CDMS links key administrative and clinical information of our patients with chronic diseases (diabetes mellitus, hypertension, dyslipidaemia, stroke, cardiovascular diseases) across the care continuum (Fig. 1).

The CDMS has the critical components and capabilities for individual and population management (Fig. 2).

**A snapshot of NHG’s diabetes population**

(a) Stock-take (Fig. 3)

For the first time, it has enabled NHG to stock-take its load of diabetes. Patients with diabetes:

- increased 32% from 129,183 patients to 170,513 patients from 2005 to 2008
- comprise 12%-15% of all NHG’s patients

(b) Good glycemic control (HbA1C < 7%) (Fig. 4)

- **Gender:** Females have better hold on their glycemic control
- **Chinese, Malay, Indians:** the 3 ethnic groups have differing degree of glycemic control
- **Young vs elderly:** The high rate of good glycemic control amongst the elderly 85+ years is unexpected and surprising. The risk of hypoglycemic events amongst the elderly may result in unplanned health service utilization or hospitalization - a paradox arising from good diabetes care.

Fig. 3: Total number of diabetes patients in NHG

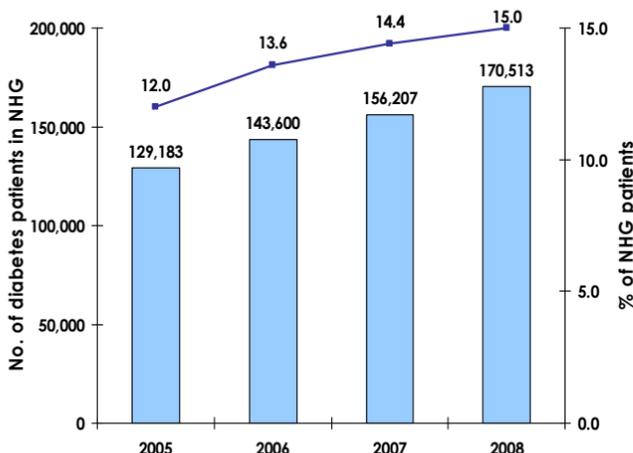
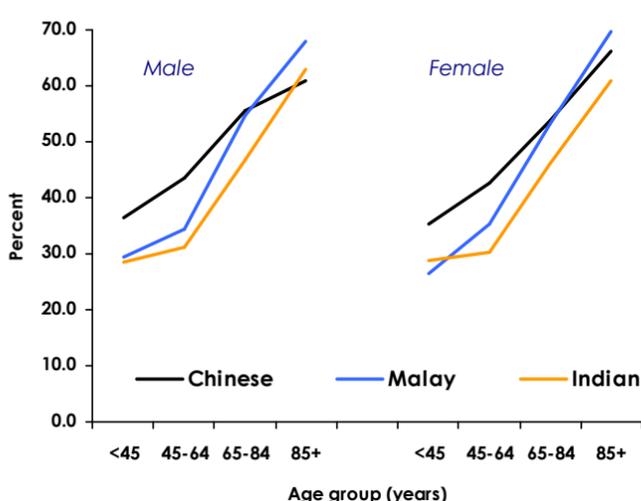


Fig. 4: Good glycemic control (HbA1C < 7%) in NHG



**Other chronic disease registries**

As of now, registries for hypertension, lipid disorders and stroke have been commissioned. Work on congestive heart failure and ischaemic heart disease registries are in progress.

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Feedback and enquiries: [hsor@nhg.com.sg](mailto:hsor@nhg.com.sg)