

# changing diabetes barometer international seminar

Oxford, 8-9 December 2008

## Changing Diabetes By Mapping Glycaemic Control: The Australian Changing Diabetes Map



# Our Challenge

- A global problem
  - Incidence and prevalence of diabetes is reaching epidemic proportions
  - Risk of complications increases significantly with diabetes
    - Human and health care cost burden
    - Doubling of costs if complications are present
  - Despite ready access to pharmacotherapy, achieving optimal glycaemic control is still an issue
    - We need to improve our outcomes (HbA<sub>1c</sub>)
      - We can't manage what we can't measure.
      - We can't change what we don't know.



# Our Solution - Changing Diabetes Map

- Aim:
  - To measure and report HbA<sub>1c</sub> across Australia by region

## *Existing Datasets*

	Reported HbA <sub>1c</sub> Clinical Outcomes	Population Size	Health Care Professional Target	Extraction Methodology
AusDiab <sup>1</sup>	No (Prevalence/Incidence)	~ 11,000	N/A	Questionnaire
ANDIAB <sup>2</sup>	Yes HbA <sub>1c</sub> 7.8% <b>National</b>	~ 1600	Specialist Diabetes Centres and Endocrinologists (16 sites)	Questionnaire
NEFRON <sup>3</sup>	Yes HbA <sub>1c</sub> 7.3% <b>National</b>	~ 4000	Primary Care – GPs (348 GPs)	Case Record Form
NPCC <sup>4</sup>	Yes ~ 38% HbA <sub>1c</sub> < 7% <b>Combined States</b>	~ 20,000	Primary Care – GPs (400-500 GPs)	Software Extraction Tool

- Our approach was to go straight to the source
  - Obtained ethics approval to collect the data from Pathology labs

# Data Collection

- De-identified raw data was obtained from private pathology labs.
  - The data is community data and comprised of both primary and secondary care
  - Over 1,000,000 raw data points were received covering a 6 month period
- Data cleaned and validated
  - By systematic processes, screening/diagnostic tests were removed.
    - Any single A1c < 6% was assumed to be a screening test and removed. This was ~ 15-20% of all tests.
  - Duplicate tests from the same patient were removed
    - Most recent test maintained for analysis
  - Resulted in ~270,000 data points in the map
- Summary data expressed visually as a map
  - State level; **Divisions of General Practice**; Postcode
  - Summary data only made available when the sample size within each area represented > 20% of the predicted 7% prevalence of diabetes

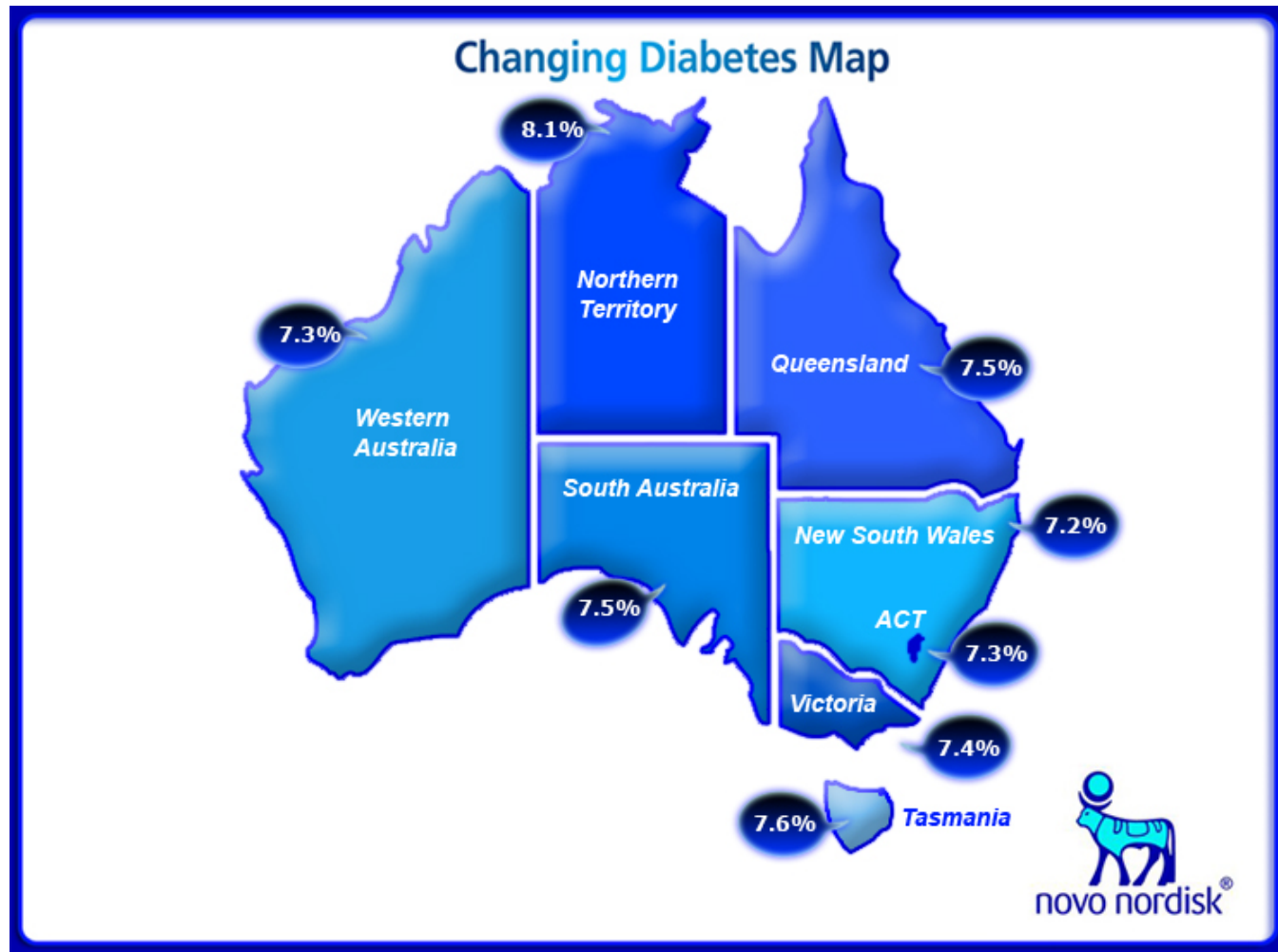
# Changing Diabetes Map Comparison

	Reported HbA <sub>1c</sub> Clinical Outcomes	Population Size	Health Care Professional Target	Extraction Methodology
AusDiab <sup>1</sup>	No (Prevalence/Incidence)	~11,000	N/A	Questionnaire
ANDIAB <sup>2</sup>	Yes HbA <sub>1c</sub> 7.8% <b>National</b>	~1,600	Specialist Diabetes Centres and Endocrinologists (16 sites)	Questionnaire
NEFRON <sup>3</sup>	Yes HbA <sub>1c</sub> 7.3% <b>National</b>	~4000	Primary Care – GPs (348 GPs)	Case Record Form
NPCC <sup>4</sup>	Yes ~38% HbA <sub>1c</sub> < 7% <b>Combined States</b>	~20,000	Primary Care – GPs (348 GPs)	Software Extraction Tool
<b>Changing Diabetes Map</b>	<b>Yes</b> <b>HbA<sub>1c</sub> for States, GP Divisions and Postcodes</b>	<b>~270,000</b>	<b>Primary Care and Secondary Care</b>	<b>Pathology Reports</b>

# Changing Diabetes Map- HbA<sub>1c</sub>

- Launched at the annual Australian Diabetes Society Meeting and at the Australian Parliamentary Futures Forum (Sept 2008)

<http://www.novonordisk.com.au>



# State Data by Division of General Practice

Data on the Division

Division location

7.5%

## Central Queensland Rural Division of General Practice

Avg HbA<sub>1c</sub>: **7.6%**

Population: **75,569**

Member GPs: **37**

HbA<sub>1c</sub> < 7  
**46.2%**

7.1 < HbA<sub>1c</sub> < 8  
**27.4%**

8.1 < HbA<sub>1c</sub> < 9  
**12.8%**

9 < HbA<sub>1c</sub>  
**13.6%**

M	F	M	F	M	F	M	F
45.6%	47.0%	28.2%	26.2%	12.8%	12.8%	13.4%	14.0%

Brisbane

Do you know the average HbA<sub>1c</sub> for your postcode?:

Lookup

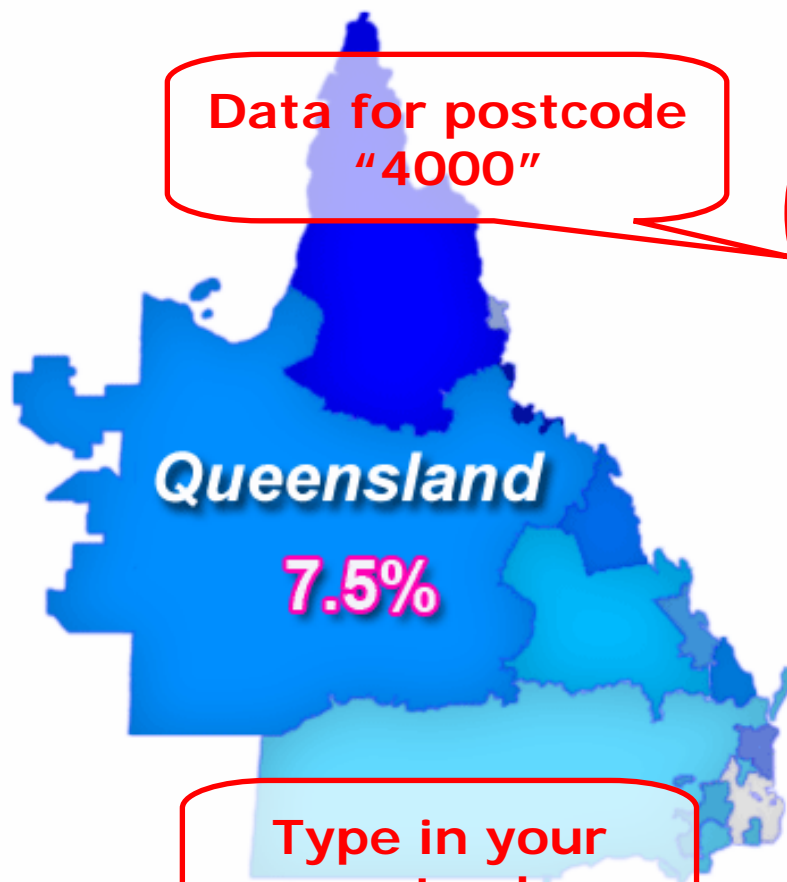
Return to Map of Australia



# State Data by Postcode

Data for postcode  
"4000"

4000 - SPRING HILL GPpartners (Brisbane North)							
Avg HbA <sub>1c</sub> : <b>7.7%</b>				Population: <b>N/A</b>			
Avg Div HbA <sub>1c</sub> : <b>7.5%</b>				Member GPs: <b>N/A</b>			
HbA <sub>1c</sub> < 7		7.1 < HbA <sub>1c</sub> < 8		8.1 < HbA <sub>1c</sub> < 9		9 < HbA <sub>1c</sub>	
<b>37.4%</b>		<b>27.4%</b>		<b>19.6%</b>		<b>15.6%</b>	
M	F	M	F	M	F	M	F
37.8%	37.1%	27.7%	27.0%	20.2%	19.1%	14.3%	16.8%



Type in your  
postcode

Do you know the average HbA<sub>1c</sub> for your postcode?:





# Changing Diabetes Map- HbA<sub>1c</sub>

- Facilitates increased awareness and shows performance at State, Division & Postcode level
- Identifies hot spots for targeted interventions

State	Mean A1c	A1c < 7%	A1c 7.1 to 8	A1c 8.1 to 9	A1c > 9
ACT	7.3	56	23	11	11
NSW	7.2	56	24	11	9
NT	8.1	45	18	11	26
QLD	7.5	50	25	12	13
SA	7.6	41	33	14	12
TAS	7.6	46	27	13	14
VIC	7.4	49	27	13	11
WA	7.3	55	23	11	11

# Targeted Interventions?

- Could we achieve an annual 10% reduction in the percentage of patients with A1c > 7%?
- In Victoria there are an estimated 245,000 diabetes patients
  - Currently, 49.0% are on target.
  - Estimated 124,950 are not on target
  - There are 4333 F.W.E GP's in Victoria
- If each GP on average helped 2.8 patients with A1c >7% achieve target, 13000 extra patients would have an A1c < 7% equating to a 10% improvement.
  - In Qld (2.7), NSW (2.2), WA (2.8), Tas (3.2) ACT (2.6)
- The Changing Diabetes Map allows for tangible and targeted action to be measured and implemented

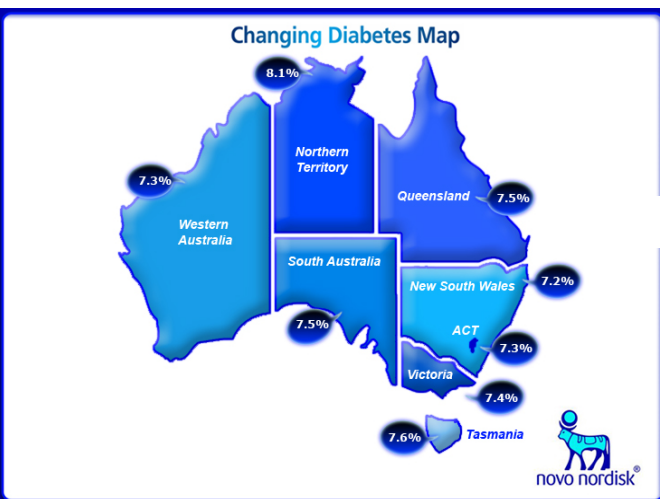
# Changing Diabetes Map Ambition

- NOW

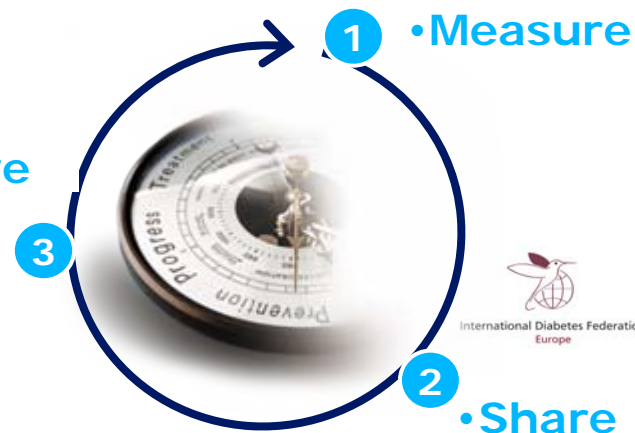
- We have and will continue to measure HbA<sub>1c</sub>
- The data will continue to be shared with the target audience for each region
- We can direct initiatives where they are needed most so that we can show an improvement in glycaemic outcomes

- FUTURE:

- By building on the current infrastructure of the Changing Diabetes Map, we can collect, maintain and monitor diabetes-related clinical and epidemiological data
- Ultimately, this will allow us to realise the national goals for diabetes so that we can turn diabetes around



• Improve



International Diabetes Federation Europe

The Oxford Health Alliance  
Confronting the Epidemic of Chronic Disease

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# Acknowledgements

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