



# Measuring Quality of Diabetes Care: Linkage of Administrative and Laboratory Data

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# Acknowledgements

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- Saskatchewan Ministry of Health

## Dual mandate of HQC

- Measure and report on health care quality
- Support quality improvement

**Quality  
Insight**

*Measuring. Learning. Improving Health Care Together.*

- Program of quality measurement and monitoring
- Being built in collaboration with end users



# Quality Insight

*Measuring. Learning. Improving Health Care Together.*

## Introducing the Quality Insight measurement and reporting program



What is the state of health care quality in Saskatchewan?

Evidence and examples from elsewhere tell us that to adequately understand the current state of health care quality, assess the impact of improvement efforts, and determine whether we are holding the gains, Saskatchewan needs a program of continuous measurement and reporting. Such a program must also provide health system stakeholders with information on quality in ways that are most useful and meaningful to them.

The inaugural Quality Insight report serves as a starting point toward providing this comprehensive picture of the quality of care in Saskatchewan. This first iteration provides baseline information from the 5-year period spanning 2001/02 to 2005/06. The HQC envisions the development of this new measurement and reporting program to be a dynamic process involving collaboration with our stakeholders—to ensure that the program and its products meet the needs of those charged with managing and improving health care in Saskatchewan (i.e., health care leaders and decision-makers) and adapts to changing needs over time. It is our hope that the report will encourage consensus-building about the "what" and "how" of measuring health care quality in our province. Over the next year, we will be working with an advisory group consisting of provincial and regional-level decision-makers, as well as those involved in quality measurement, to revise and improve the design and content of the report. We encourage and welcome input into this process.

[Quality Insight report, 2008](#) (PDF, 92 pages)

[Quality Insight 2008 detailed data tables and figures for all indicators](#)

[A short note on statistical comparison methodology](#) (PDF)

[Technical Appendix](#) (PDF, 119 pages)

[News release](#)



### Health Clips

From the latest bulletin on innovation in health services

- "Pushin' Paper" - Lean for Service, Office and Technical Environments

- Bedside doctor

### Secure Forum Access

Click here to Access the Secure Forum

# Measuring Quality of Diabetes Care

Can Diabetes Assoc Best Practice Guidelines  
Diabetes. 2003;27(suppl 2):S1 –152)

(Can Journal of

Process	Intermed. outcome	Outcome
<p>HbA1c testing</p> <p>Use of recommended medications</p> <p>-anti-hypertensives</p> <p>Anti-lipidemics</p>	<p>Blood glucose control (HbA1c)</p> <p>Cholesterol (LDL) control</p> <p>Kidney function</p> <p>- Microalbuminuria</p> <p>- eGFR</p>	<p>Hospitalizations</p> <p>- hypo/hyperglycemia</p> <p>- Stroke, AMI, amputation</p> <p>End-stage renal disease</p> <p>Mortality (all cause)</p>

## CDA Guideline Recommendations

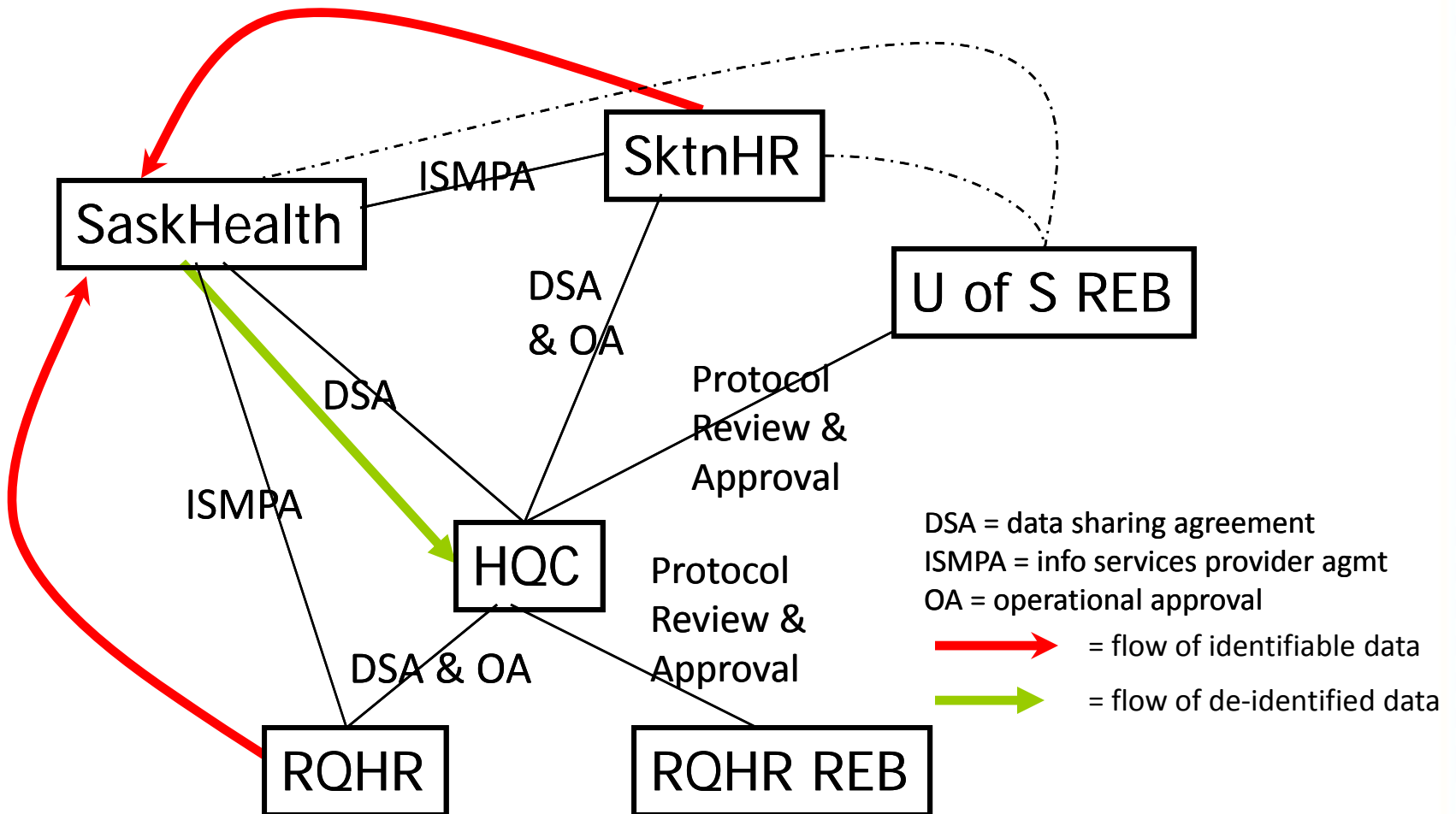
- HbA1c should be measured once every 3 months (4x/yr) to ensure blood glucose control goals are met or maintained
- HbA1c should ideally be maintained at  $\leq 7.0\%$  to prevent complications of diabetes
- HbA1c  $> 9.0\%$  indicates poorly controlled glucose

## Accessing Data

- Data Sharing Agreement for access to Saskatchewan Ministry of Health administrative health data
  - Hospital (DAD); Medical Billings (MSB);
  - Prescription meds (all ages); Person Registry; Vital Stats
- Only 2 labs in SK licensed for HbA1c testing: Regina and Saskatoon
  - Data sharing agreements with Regional health authorities to access laboratory data

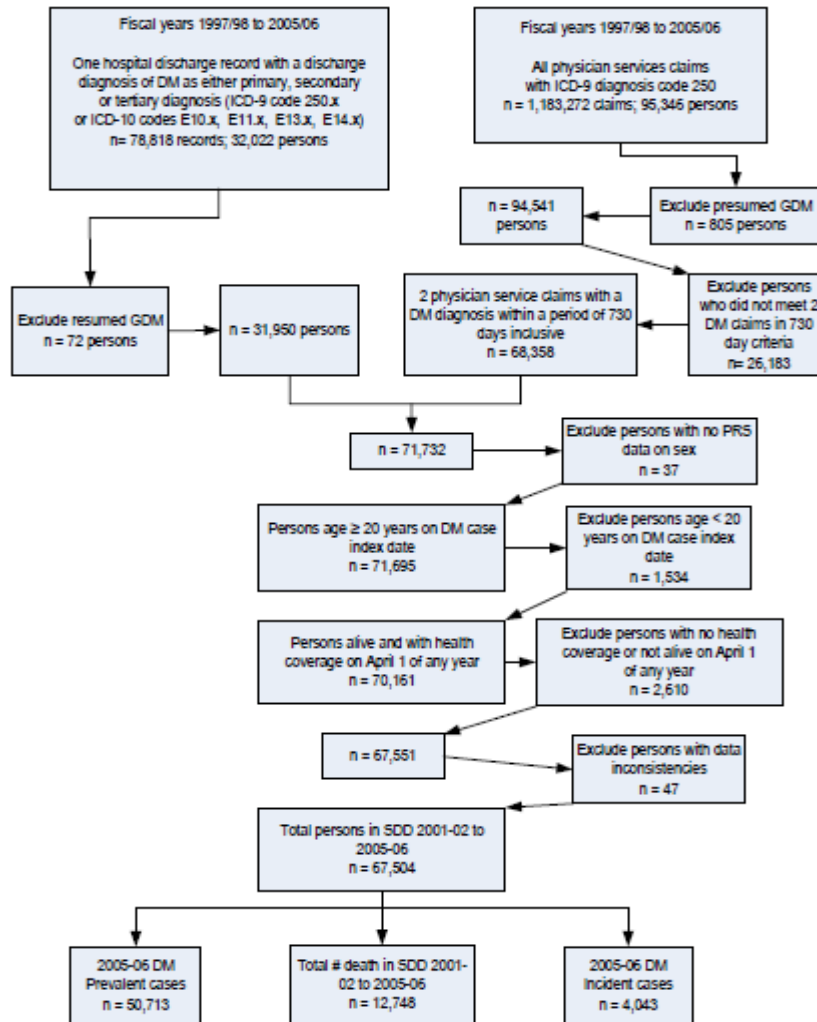
# Methods

## Ethics and Privacy



# Methods

Figure 3.1 Development of the Saskatchewan Diabetes Database (SDD),  
Fiscal years 2001/02 to 2005/06



## Sask Diabetes Database (SDD)

- Hosp with any ICD10-CA dx in: E10.x, E11.x, E13.x, E14.x

Or

- 2 MD billings within 730 days with ICD9 of 250.

Exclude:

- presumptive gestational diabetes mellitus
- Age < 20

**50,713** prevalent cases  
in FY 2005-06

## Laboratory data linkage

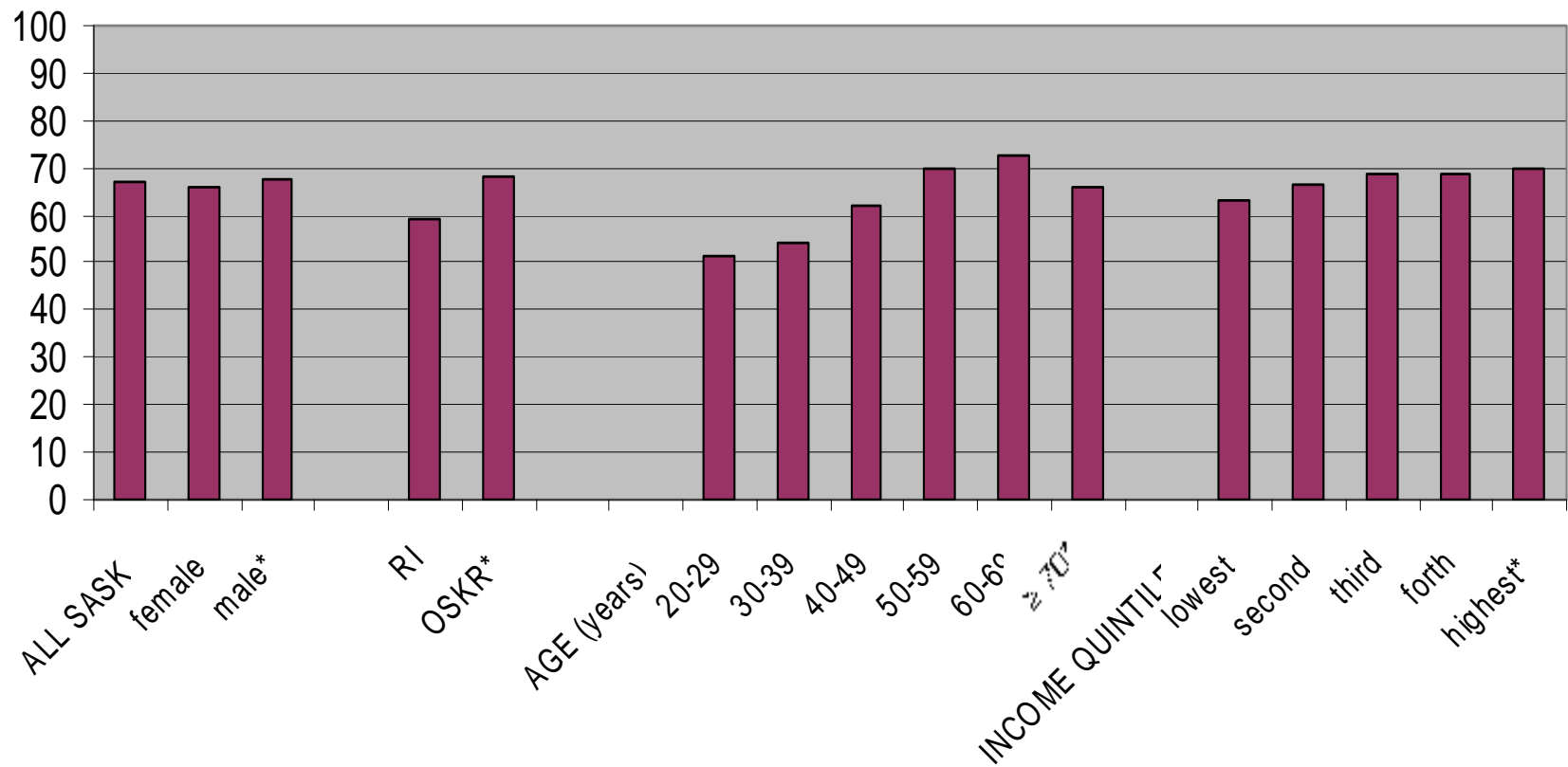
- All test records for individuals tested at least once for the test of interest, during the sampling period
- Linked by encrypted Health Card Number to individuals in the SDD (some name/sex/DOB matching where HCN was missing)

**33,920** individuals with diabetes with  $\geq 1$  HbA1c test in FY 2005-06

- These are cohort for all indicators involving the test *results*
- Cohort for test *count* indicators was the SDD.

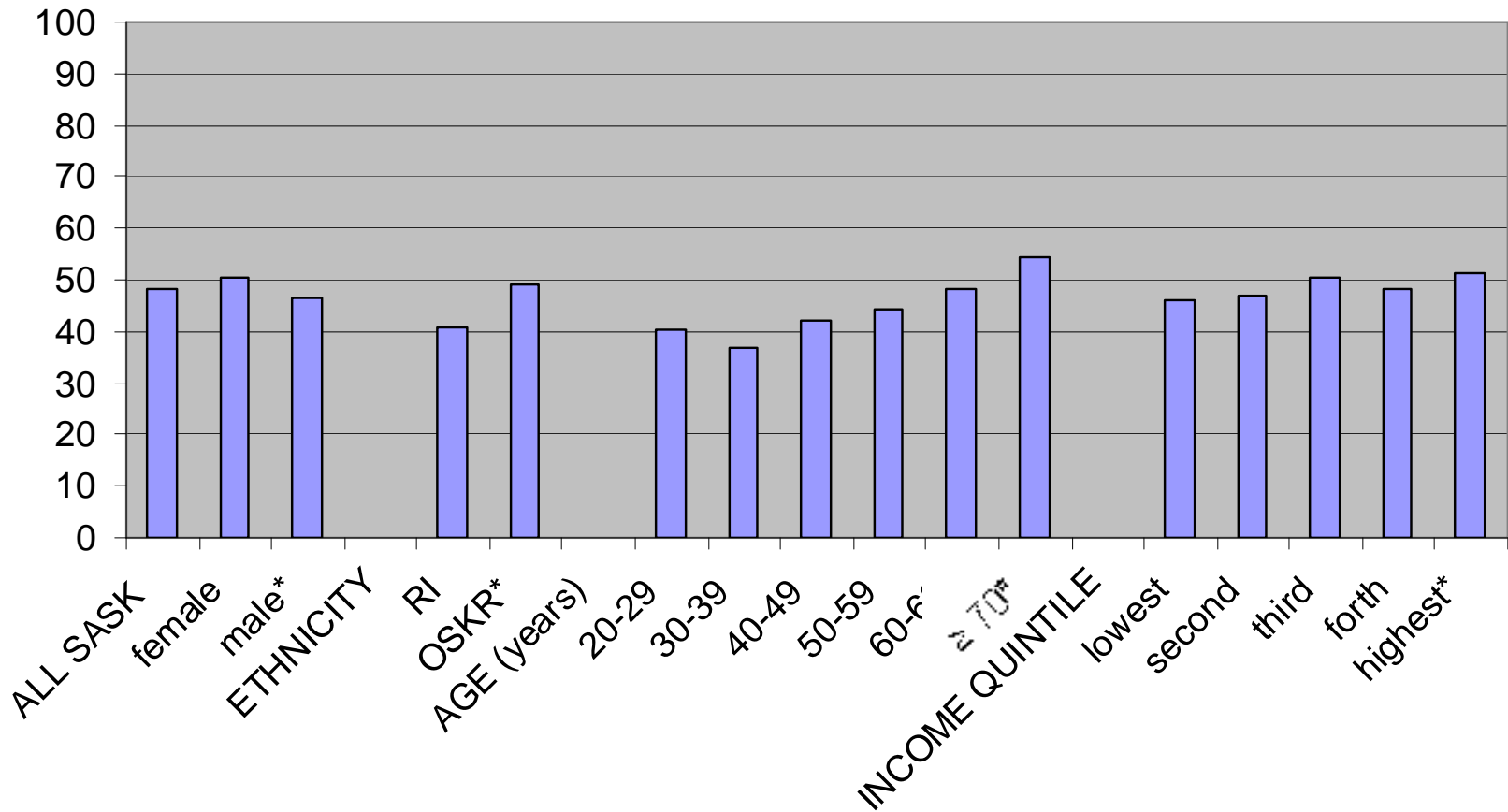
# Results

## Percent of SK residents $\geq 20$ yrs with diabetes who had at least one HbA1c test done during FY2005-06

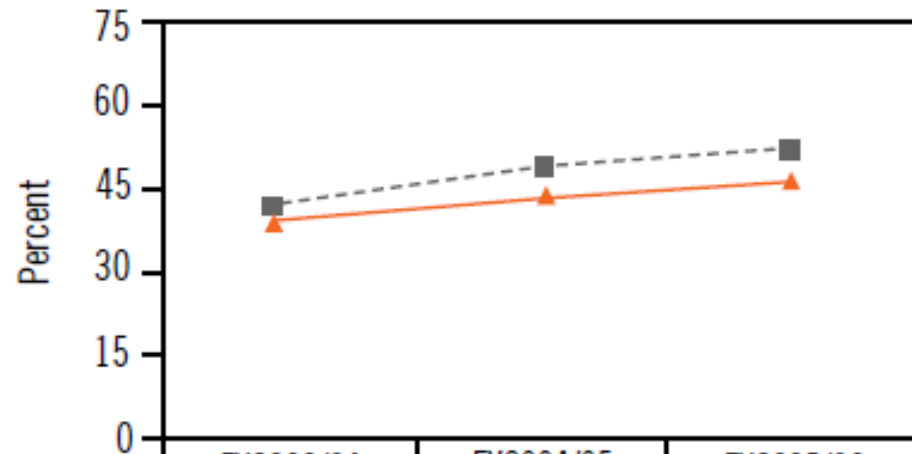


# Results

## Percent of SK residents $\geq 20$ yrs with diabetes who had HbA1c $\leq 7\%*$ , FY2005-06



## Gradual improvement in glucose control over recent years



	FY2003/04	FY2004/05	FY2005/06
-■- A1C ≤ 7.0%	42.6	47.4	48.5
-▲- LDL < 2.5 mmol/L	37.3	44.8	45.9

**Figure 2.8** Percentage of people with diabetes aged 20 years and over in Saskatchewan with a most recent A1C level less than or equal to 7% (A1C ≤ 7%), or, with a most recent LDL cholesterol level less than 2.5 mmol/L (LDL < 2.5 mmol/L), fiscal years 2003/04 to 2005/06.

- Population-based analysis of important care process and intermediate outcomes of diabetes care was enabled through linkage of laboratory data with admin data
- Can use these indicators to monitor improvement in diabetes care over time in response to improvement initiatives (e.g., SK CDM Collaborative; chronic disease management physician billing code; etc)
- Disparities in quality are evident – by age, ethnicity and income.
- Within a couple of years this work will be easier due to roll out of Sask Lab Data EHR module (will also enable ready access to province-wide lab results for tests performed in wide variety of labs) – issue then will be lab result standardization.

# All HQC quality indicator results available online:

[www.hqc.sk.ca](http://www.hqc.sk.ca)

→ Measurement and Reporting → Quality Insight

Annual updates in late Fall

Measures currently available for:

- Diabetes care
- Asthma care
- Post-AMI care
- Use of medications among community dwelling seniors
- Patient experience in acute care (survey)

Full Technical documentation (Technical Appendix in PDF)