

## Appendix 1

eTable 1: Characteristics, by clinical indicator, 2012 - 2013

| Indicator ID | Indicator Description  | Age Inclusion Criteria | No. of Sites |    |    |    | Strength of Recommendation <sup>#</sup> | Care Type    | Quality Type <sup>*</sup> |
|--------------|--|------------------------|--------------|----|----|----|---|--------------|---------------------------|
|              |  |                        | GP           | SP | ED | IP |   |              |                           |
| DIAB01       | Children and adolescents with type 1 diabetes, at diagnosis, received investigations for insulin antibodies.   | 6 months - 15 years    | 1            | 1  | 27 | 21 | Consensus-based recommendation          | Diagnosis    | Underuse                  |
| DIAB02       | Children and adolescents with type 1 diabetes, at diagnosis, received investigations for GAD antibodies.   | 6 months - 15 years    | 1            | 1  | 27 | 21 | Consensus-based recommendation          | Diagnosis    | Underuse                  |
| DIAB03       | Children and adolescents newly diagnosed with type 1 diabetes were screened for coeliac disease (total IgA, anti-gliadin Ab, tissue transglutaminase Ab).  | 6 months - 15 years    | 1            | 3  | 26 | 21 | Grade B                                 | Diagnosis    | Underuse                  |
| DIAB04       | Children and adolescents newly diagnosed with type 1 diabetes were screened for thyroid dysfunction (TSH, FT4).  | 6 months - 15 years    | 1            | 3  | 26 | 21 | Grade B                                 | Diagnosis    | Underuse                  |
| DIAB05       | Children and adolescents diagnosed with type 1 diabetes who presented with suboptimal glycemic control (e.g. HbA1c greater than 10% or or 86mmol/mol) were assessed for co-occurrence of psychological disorders using a validated screening tool. | 6 months - 15 years    | 3            | 2  | 24 | 17 | Consensus-based recommendation          | Routine care | Underuse                  |
| DIAB06       | Children and adolescents diagnosed with type 1 diabetes who presented with insulin omission were assessed for co-occurrence of psychological disorders using a validated screening tool.   | 6 months - 15 years    | 0            | 0  | 13 | 10 | Consensus-based recommendation          | Routine care | Underuse                  |
| DIAB07       | Children and adolescents diagnosed with type 1 diabetes who presented with disorder eating behaviours were assessed for co-occurrence of psychological disorders using a validated screening tool.   | 6 months - 15 years    | 0            | 0  | 9  | 5  | Consensus-based recommendation          | Routine care | Underuse                  |
| DIAB08       | Children and adolescents diagnosed with type 1 diabetes who presented with recurrent admissions for diabetic ketoacidosis (DKA) were assessed for co-occurrence of psychological disorders using a validated screening tool.                       | 6 months - 15 years    | NA           | 0  | NA | 9  | Consensus-based recommendation          | Routine care | Underuse                  |
| DIAB09       | Children and adolescents with type 1 diabetes had an intensive glycemic control plan implemented that included MDI or CSII.  | 6 months - 15 years    | 7            | 8  | 32 | 26 | Grade B                                 | Routine care | Underuse                  |

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|              |   |                        | GP           | SP | ED | IP |   |                |                           |
| DIAB10       | Children and adolescents with type 1 diabetes had an intensive glycemic control plan implemented that included frequent insulin dose adjustment.  | 6 months - 15 years    | 7            | 8  | 32 | 26 | Grade B                                 | Routine care   | Underuse                  |
| DIAB11       | Children and adolescents with type 1 diabetes had an intensive glycemic control plan implemented that included blood glucose level monitoring at least four times per day.  | 6 months - 15 years    | 7            | 8  | 32 | 26 | Grade B                                 | Routine care   | Underuse                  |
| DIAB12       | Children and adolescents with type 1 diabetes had an intensive glycemic control plan implemented that included monitoring of HbA1c at least 4-monthly.  | 6 months - 15 years    | 7            | 8  | 32 | 26 | Grade B                                 | Routine care   | Underuse                  |
| DIAB13       | Children and adolescents with type 1 diabetes who presented with signs of DKA had their level of dehydration recorded as mild (less than 4%), moderate (4-7%) or severe (greater than 7%).                            | 6 months - 15 years    | NA           | NA | 32 | 24 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB14       | Children and adolescents with type 1 diabetes who presented with signs of DKA had their vital signs monitored.  | 6 months - 15 years    | NA           | NA | 32 | 24 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB15       | Children and adolescents with type 1 diabetes who presented with signs of DKA had their level of consciousness assessed using the Glasgow coma scale.   | 6 months - 15 years    | NA           | NA | 32 | 24 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB16       | Children and adolescents with type 1 diabetes who presented with signs of DKA had their airway and breathing assessed and maintained.   | 6 months - 15 years    | NA           | NA | 32 | 24 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB17       | Children and adolescents with type 1 diabetes who presented with signs of DKA had their blood glucose, urea and electrolytes (sodium, potassium, calcium, magnesium, phosphate) assessed at the time of presentation. | 6 months - 15 years    | NA           | NA | 32 | 23 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB18       | Children and adolescents with type 1 diabetes who presented with signs of DKA had their blood ketones (bedside test) assessed at the time of presentation.  | 6 months - 15 years    | NA           | NA | 32 | 23 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB19       | Children and adolescents with type 1 diabetes who presented with signs of DKA had their venous blood gas (including bicarb) assessed at the time of presentation.   | 6 months - 15 years    | NA           | NA | 32 | 23 | Consensus-based recommendation          | Emergency care | Underuse                  |

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|              |   |                        | GP           | SP | ED | IP |   |                |                           |
| DIAB20       | Children and adolescents with type 1 diabetes who presented with signs of DKA and tested negative for ketones were managed with subcutaneous insulin.   | 6 months - 15 years    | NA           | NA | 12 | 10 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB21       | Children and adolescents with type 1 diabetes who presented with signs of DKA and had a normal pH in the presence of ketones were managed with subcutaneous insulin.  | 6 months - 15 years    | NA           | NA | 24 | 13 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB22       | Children and adolescents with type 1 diabetes who presented with signs of DKA and a BGL greater than or equal to 11.1 mmol/l had blood ketones tested on a capillary sample.  | 6 months - 15 years    | NA           | NA | 30 | 22 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB23       | Children and adolescents with type 1 diabetes who presented with severe DKA (blood glucose > 11 mmol/L, venous pH < 7.1, bicarbonate < 5 mmol/L) and hypoperfusion (delayed capillary return, tachycardia for age) received a bolus of 0.9% normal saline (10 ml/kg).                                       | 6 months - 15 years    | NA           | NA | 16 | 10 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB24       | Children and adolescents with type 1 diabetes who presented with severe DKA (blood glucose > 11 mmol/L, venous pH < 7.1, bicarbonate < 5 mmol/L) and hypoperfusion (delayed capillary return, tachycardia for age) received rehydration with normal saline and potassium.                                   | 6 months - 15 years    | NA           | NA | 14 | 13 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB25       | Children and adolescents with type 1 diabetes who presented with severe DKA (blood glucose > 11 mmol/L, venous pH < 7.1, bicarbonate < 5 mmol/L) and hypoperfusion (delayed capillary return, tachycardia for age) had their fluid type adjusted according to ongoing sodium, potassium and glucose levels. | 6 months - 15 years    | NA           | NA | 13 | 12 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB26       | Children and adolescents with type 1 diabetes who presented with DKA and a potassium greater than 5.5 mmol/l, or were anuric, had commencement of potassium replacement therapy deferred.   | 6 months - 15 years    | NA           | NA | 6  | 5  | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB27       | Children and adolescents with type 1 diabetes who presented with moderate to severe DKA had a repeat serum potassium within one hour of insulin being commenced.  | 6 months - 15 years    | NA           | NA | 23 | 14 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB28       | Children and adolescents with type 1 diabetes were provided with face-to-face education within 6 weeks of diagnosis by a qualified dietician on accurate carbohydrate counting.   | 6 months - 15 years    | 3            | 5  | 21 | 24 | Consensus-based recommendation          | Routine care   | Underuse                  |

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|              |  |                        | GP           | SP | ED | IP |   |                |                           |
| DIAB29       | Children and adolescents with type 1 diabetes had a comprehensive sick-day management plan in their medical record that included blood ketone measurement (or urine ketone measurement if blood ketone was not available). | 6 months - 15 years    | 7            | 9  | 32 | 26 | Consensus-based recommendation          | Routine care   | Underuse                  |
| DIAB30       | Children and adolescents with type 1 diabetes had a comprehensive sick-day management plan in their medical record that included written guidelines and details on 24-hour access to clinical advice.                      | 6 months - 15 years    | 7            | 9  | 32 | 26 | Consensus-based recommendation          | Routine care   | Underuse                  |
| DIAB31       | Children and adolescents with type 1 diabetes with DKA were referred at presentation for consultation with a local pediatric team.   | 6 months - 15 years    | NA           | NA | 30 | 25 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB32       | Children and adolescents with type 1 diabetes with hypernatremia or hyponatremia were referred at presentation for consultation with a local pediatric team.   | 6 months - 15 years    | 1            | 0  | 19 | 13 | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB33       | Children aged less than 18 months with type 1 diabetes who presented with DKA were transferred to and/or consulted with tertiary care for intensive care monitoring.   | 6 months - 15 years    | NA           | NA | 4  | 1  | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB34       | Children and adolescents with type 1 diabetes who presented with DKA and coma were transferred to and/or consulted with tertiary care for intensive care monitoring.   | 6 months - 15 years    | NA           | NA | 0  | 2  | Consensus-based recommendation          | Emergency care | Underuse                  |
| DIAB35       | Children and adolescents with type 1 diabetes who presented with DKA and signs of cerebral edema were transferred to and/or consulted with tertiary care for intensive care monitoring.                                    | 6 months - 15 years    | NA           | NA | 4  | 1  | Consensus-based recommendation          | Emergency care | Underuse                  |

**Legend:** ID=Identifier; GP=General Practitioner; SP=Specialist Pediatrician; ED=Emergency Department; IP=Inpatient; GAD= Glutamic acid decarboxylase; IgA=Immunoglobulin A; Ab=Antibodies; TSH=Thyroid Stimulating Hormone; FT4=Free Thyroxine (T4); HbA1c=Hemoglobin A1c; DKA=Diabetic Ketoacidosis; MDI=Multiple Daily Injections; CSII=Continuous Subcutaneous Insulin Infusion; BGL=Blood Glucose Level.

<sup>#</sup> Strength of recommendation as reported in individual CPGs. CPGs used a variety of classification schemes for allocating strength of recommendation in Grades (with A indicating the strongest recommendation in all classification schemes). Where Strength of Recommendation, or Level of Evidence, were not specified in the CPG, the term "Consensus-based recommendation" was assigned.

<sup>\*</sup> The type of quality of care assessed was classified as underuse or overuse: underuse refers to actions which are recommended, but not undertaken; overuse refers to actions which are not indicated, or are contraindicated, in the context of the indicator's inclusion criteria.