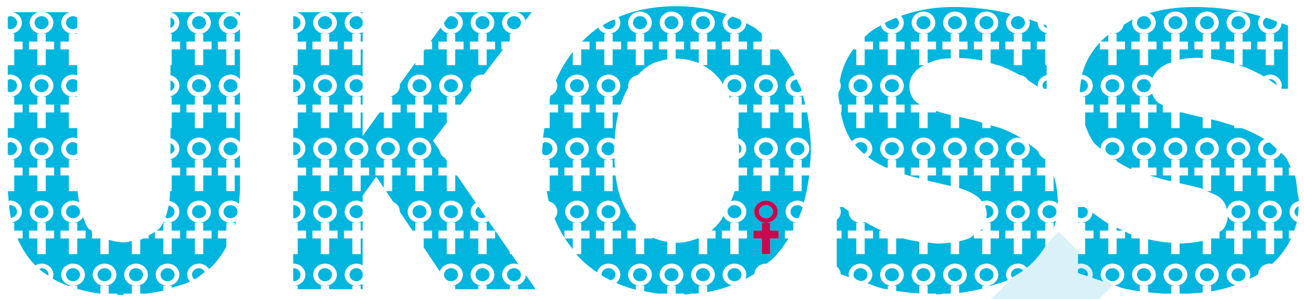
ID Number:



UK Obstetric Surveillance System

Diabetic Ketoacidosis in Pregnancy

Study 04/19

Data Collection Form - CASE

Please report any woman delivering on or after the 01/04/19 and before 31/03/20

Case Definition:

Any pregnant woman, with diabetes (Types 1 & 2, MODY or GDM), who is admitted to hospital for the management of ketoacidosis (irrespective of the level of blood glucose).

Instructions

1. Please do not enter any personally identifiable information (e.g. name, address or hospital number) on this form.
2. Fill in the form using the information available in the woman's case notes.
3. If the woman has received secondary mental health care (prior to or during her current pregnancy) please consult with the woman's most recent psychiatric team to complete this form. If you are unable to contact a psychiatrist involved in the woman's care please contact the UKOSS administrator and provide details of the mental health team she was receiving care from.
4. Tick the boxes as appropriate. If you require any additional space to answer a question please use the space provided in section 7
5. Please complete all dates in the format DD/MM/YY, and all times using the 24hr clock e.g. 18:37
6. If codes or examples are required, some lists (not exhaustive) are included on the back page of the form.
7. If you do not know the answers to some questions, please indicate this in section 7
8. If the woman has not yet delivered, please complete the form as far as you are able, excluding delivery and outcome information, and return to the UKOSS Administrator. We will send these sections again for you to complete two weeks after the woman's expected date of delivery.
9. If you do not know the answers to some questions, please indicate this in section 7.
10. If you encounter any problems with completing the form please contact the UKOSS coordinator or use the space in section 10 to describe the problem.

Royal College of Obstetricians and Gynaecologists

Bringing to life the best in women's health care

Please return the completed form to:

UKOSS
National Perinatal Epidemiology Unit
University of Oxford, Old Road Campus
Oxford, OX3 7LF

Fax: 01865 617775
Phone: 01865 289714

Case reported in: ____________________

NPEU

CASE

Section 1: Woman's details

1.1 **Year of birth:** Y Y Y Y

1.2 **Ethnic group:**[1*] *(enter code, please see back cover for guidance)*

1.3 **Was the woman in paid employment at booking?** Yes ☐ No ☐

If Yes, what is her occupation: ____________________

If No, what is her partner's (if any) occupation: ____________________

1.4 **Height at booking:** cm

1.5 **Weight at booking:** . kg

1.6 **What is the woman's smoking status?**

Never ☐ Current ☐ Gave up prior to pregnancy ☐ Gave up during pregnancy ☐

Section 2: Previous Obstetric History

2.1 **Gravidity**

Number of completed pregnancies beyond 24 weeks:

Number of pregnancies less than 24 weeks:

Number of pregnancies with congenital anomalies:

If no previous pregnancies, *please go to section 3*

2.2 **Did the woman have any of the following in previous pregnancies?** *(please tick all that apply)*

Pre-eclampsia ☐ GDM ☐ Preterm deliveries ☐ Sepsis ☐

Shoulder dystocia (defined as difficulty delivering the shoulders of a baby necessitating internal manoeuvres) ☐

2.3 **Did the woman have any other previous pregnancy problems?**[2*] Yes ☐ No ☐

If Yes, please specify: ____________________

Section 3: Previous Medical History

3.1 **What type of diabetes does this woman have?**

Type 1 ☐ Type 2 ☐ GDM ☐ MODY ☐ Other ☐

If Other, please specify: ____________________

3.2 **What was the year of first diagnosis?** Y Y Y Y

3.3 **Did this woman have pre-diabetes?** Yes ☐ No ☐

If Yes, what year was it diagnosed? Y Y Y Y

3.4 **Was the woman known to have any of the following complications of diabetes?** *(please tick all that apply)*

Diabetes Retinopathy ☐ Nephropathy ☐ Diabetes neuropathy ☐

Diabetes Gastroparesis ☐ Microvascular disease ☐ Macrovascular disease ☐

3.5 **Did the woman receive pre-pregnancy counselling?** Yes ☐ No ☐ Not known ☐

3.6 **Did the woman attend a pre-conception clinic?** Yes ☐ No ☐ Not known ☐

CASE

3.7 What treatments did she receive before and during pregnancy? *(please tick all that apply)*

	Pre-pregnancy	1st trimester (0-14 weeks)	2nd Trimester (14-26 weeks)	3rd Trimester (after 28 weeks)
Oral hypoglycaemics	☐	☐	☐	☐
Insulin	☐	☐	☐	☐
Statins	☐	☐	☐	☐
Anti-hypertensives	☐	☐	☐	☐
High dose (5mg) Folate	☐	☐	☐	☐
Normal dose (400mcg) folate	☐	☐	☐	☐
Aspirin	☐	☐	☐	☐

3.8 Did the woman have any of the following?

Hypertension	Yes ☐	No ☐	Not known ☐
Hypothyroidism	Yes ☐	No ☐	Not known ☐
Hyperthyroidism	Yes ☐	No ☐	Not known ☐
Other endocrine disorders	Yes ☐	No ☐	Not known ☐

If Other, please specify: ______________________________

3.9 Did the woman have any other pre-existing medical problem?[3*] Yes ☐ No ☐

If Yes, please specify: ______________________________

Section 4:

Section 4a: This Pregnancy

4a.1 Final Estimated Date of Delivery (EDD):[4*] D D / M M / Y Y

4a.2 Was this a multiple pregnancy? Yes ☐ No ☐

If Yes, please specify number of fetuses: ☐☐

4a.3 What was the date and gestation of the first booking visit? D D / M M / Y Y ☐☐ *wks*

4a.4 What was the type of clinic setting where the woman was receiving care? *(please tick the most appropriate)*

A routine obstetric ANC ☐ Joint diabetic ANC ☐ Separate ANC and diabetic clinic ☐

Section 4b: Diagnosis of DKA

4b.1 What was the date of diagnosis of DKA? D D / M M / Y Y

4b.2 Was the woman receiving any of the following immediately prior to the episode of DKA? *(Please tick all that apply and indicate drug name and dose)*

		Drug	Dose
Oral hypoglycaemics	Yes ☐ No ☐	______	______
Insulin	Yes ☐ No ☐	______	______

		Drug	Dose
Statins	Yes ☐ No ☐		
Anti-hypertensives	Yes ☐ No ☐		
High dose (5mg) Folate	Yes ☐ No ☐		
Normal dose (400mcg) folate	Yes ☐ No ☐		
Aspirin	Yes ☐ No ☐		

4b.3 **What was the suspected aetiology of the DKA?** *(please tick one only)*

- Infection - please specify site: ______ ☐
- Medication error ☐
- Steroid administration ☐
- Other medication(s) or mechanisms - please specify: ______ ☐
- Not known ☐

4b.4 **What were the woman's blood and urinary investigations at the time of diagnosis?** *(please use the values nearest to the date and time of diagnosis)*

Investigation	Result (please indicate NK if not known or not done)
Venous blood glucose level (mmol/L)	
Lactate (iu/L)	
Urea (mmol/L)	
Sodium (mmol/L)	
Potassium (mmol/L)	
Chloride (mmol/L)	
Creatinine (micromol/L)	
Blood ketones (mmol/L)	
Arterial gases	
pH	
BE (HCO3- mmol/L)	
pCO2 (kPa),	
pO2 (kPa)	
Urine dipstix	
Ketones	
Protein	
Nitrites	
Blood	

Section 4c: Management of DKA

4c.1 **Where was the woman first managed?** *(please tick one only)*

Medical ward ☐ Obstetric ward ☐ Obstetric HDU ☐ General HDU ☐ ITU ☐

4c.2 **What fluids did she receive?** Intravenous ☐ Oral ☐ Both ☐

4c.3 **What was the total volume of intravenous and oral fluid intake in the 24 hours immediately following diagnosis?** ☐☐☐☐ *ml*

4c.4 **How was insulin administered?** Intravenous ☐ Subcutaneous ☐ Both ☐

4c.5 **Did the woman have any further episodes of DKA?** Yes ☐ No ☐

If Yes, please state how many: ☐☐

4c.6 **Did the woman have a CTG undertaken at the time of her DKA?** Yes ☐ No ☐

If Yes, was this: Normal ☐ Abnormal ☐

If Abnormal, please describe abnormalities: ______

4c.7 **Were there any other problems in this pregnancy?[2*]** Yes ☐ No ☐

If Yes, please specify: ______

Section 5: Delivery

5.1 **Did this woman have a miscarriage?** Yes ☐ No ☐

If Yes, please specify date D D / M M / Y Y

5.2 **Did this woman have a termination of pregnancy?** Yes ☐ No ☐

If Yes, please specify date D D / M M / Y Y

If Yes to 5a.1 or 5a.2, please now complete sections 5b, 6a, 7 and 8

5.3 **Is this woman still undelivered?** Yes ☐ No ☐

If Yes, will she be receiving the rest of her antenatal care from your hospital? Yes ☐ No ☐

If No, please indicate name of hospital providing future care:

______

Will she be delivered at your hospital? Yes ☐ No ☐

If No, please indicate name of delivery hospital, then *go to Section 7*

______

5.4 **Was delivery induced?** Yes ☐ No ☐

If Yes, please state indication: ______

Was vaginal prostaglandin used? Yes ☐ No ☐

5.5 **Did the woman labour?** Yes ☐ No ☐

5.6 **Was delivery by caesarean section?** Yes ☐ No ☐

If Yes, please state:

Grade of urgency:[5*] ☐

Indication for caesarean section: ______

Method of anaesthesia: Regional ☐ General anaesthetic ☐

CASE

Section 6: Outcomes

Section 6a: Woman

6a.1 **Was the woman admitted to ITU at the time of her DKA (level 3 critical care)?** Yes ☐ No ☐

If Yes, duration of stay: ☐☐ *days*

OR Tick if woman is still in ITU (critical care level 3): ☐

OR Tick if woman was transferred to another hospital: ☐

6a.2 **Did the woman have either of the following?**

Cerebral oedema Yes ☐ No ☐

Aspiration pneumonia Yes ☐ No ☐

6a.3 **Did any other major maternal morbidity occur?**[6*] Yes ☐ No ☐

If Yes, please specify: ______________________

6a.4 **Did the woman have any other complications in the postnatal period?** Yes ☐ No ☐

If Yes, please specify: ______________________

6a.5 **Did the woman die?** Yes ☐ No ☐

If Yes, please specify date and time of death D D / M M / Y Y h h : m m (24hr)

What was the primary cause of death as stated on the death certificate?

(Please state if not known) ______________________

Was a post mortem examination undertaken? Yes ☐ No ☐

If Yes, did the examination confirm the certified cause of death/diagnosis?

Yes ☐ No ☐ Not known ☐

Section 6b: Infant 1

NB: If more than one infant, for each additional infant, please photocopy the infant section of the form **(before filling it in)** and attach extra sheet(s) or download additional forms from the website: www.npeu.ox.ac.uk/ukoss

6b.1 **Date and time of delivery:** D D / M M / Y Y h h : m m (24hr)

6b.2 **Mode of delivery:** Spontaneous vaginal ☐ Ventouse ☐ Forceps ☐ Vaginal Breech ☐

Pre-labour caesarean section ☐ Caesarean section after onset of labour ☐

6b.3 **Birthweight:** ☐☐☐☐ *g*

6b.4 **Sex of infant:** Male ☐ Female ☐ Indeterminate ☐

6b.5 **Was the infant stillborn?** Yes ☐ No ☐

If Yes, *please go to section 7*

6b.6 **5 min Apgar** ☐☐

6b.7 **Were the cord arterial and venous pH and base excess measured at delivery?** Yes ☐ No ☐

If Yes, please record below:

Venous	pH ☐.☐☐	BE ☐☐☐
Arterial	pH ☐.☐☐	BE ☐☐☐

CASE

6b.8 **Was the infant admitted to the neonatal unit?** Yes ☐ No ☐

6b.9 **Did the infant have any of the following?** *(please tick all that apply)*

Hypoglycaemia ☐ Respiratory Distress Syndrome ☐ Jaundice ☐

Cardiomyopathy ☐ None ☐

6b.10 **Did any other major infant complications occur?[7]*** Yes ☐ No ☐

If Yes, please specify ____________________

6b.11 **Did this infant die?** Yes ☐ No ☐

If Yes, please specify date of death D D / M M / Y Y

What was the primary cause of death as stated on the death certificate?

(Please state if not known) ____________________

Section 7: Further information

Please use this space to enter any other information you feel may be important.

Section 8: Your details

8.1 **Name of UKOSS representative completing the form:** ____________________

8.2 **Designation:** ____________________

8.3 **Today's date:** D D / M M / Y Y

You may find it useful in the case of queries to keep a copy of this form.

CASE

Definitions

1. UK Census Coding for ethnic group

WHITE
- 01. British
- 02. Irish
- 03. Any other white background

MIXED
- 04. White and black Caribbean
- 05. White and black African
- 06. White and Asian
- 07. Any other mixed background

ASIAN OR ASIAN BRITISH
- 08. Indian
- 09. Pakistani
- 10. Bangladeshi
- 11. Any other Asian background

BLACK OR BLACK BRITISH
- 12. Caribbean
- 13. African
- 14. Any other black background

CHINESE OR OTHER ETHNIC GROUP
- 15. Chinese
- 16. Any other ethnic group

2. Previous or current pregnancy problems, including:

Thrombotic event
Amniotic Fluid Embolism
Eclampsia
3 or more miscarriages
Preterm birth or mid-trimester loss
Neonatal death
Stillbirth
Baby with a major congenital abnormality
Small for gestational age (SGA) infant
Large for gestational age (LGA) infant
Infant requiring intensive care
Puerperal psychosis
Placenta praevia
Gestational diabetes
Significant Placental abruption
Post-partum haemorrhage requiring transfusion
Surgical procedure in pregnancy
Hyperemesis requiring admission
Dehydration requiring admission
Ovarian hyperstimulation syndrome
Severe infection e.g. Pyelonephritis

3. Previous or pre-existing maternal medical problems, including:

Cardiac disease (congenital or acquired)
Renal disease
Psychiatric disorders
Haematological disorders e.g. sickle cell disease, diagnosed thrombophilia
Inflammatory disorders e.g. inflammatory bowel disease
Autoimmune diseases
Cancer
HIV

4. Estimated date of delivery (EDD): Use the best estimate (ultrasound scan or date of last menstrual period) based on a 40 week gestation

5. RCA/RCOG/CEMACH/CNST Classification for urgency of caesarean section:

1. Immediate threat to life of woman or fetus
2. Maternal or fetal compromise which is not immediately life-threatening
3. Needing early delivery but no maternal or fetal compromise
4. At a time to suit the woman and maternity team

6. Major maternal medical complications, including:

Persistent vegetative state
Cardiac arrest
Cerebrovascular accident
Adult respiratory distress syndrome
Disseminated intravascular coagulopathy
HELLP
Pulmonary oedema
Mendleson's syndrome
Renal failure
Thrombotic event
Septicaemia
Required ventilation

7. Fetal/infant complications, including:

Respiratory distress syndrome
Intraventricular haemorrhage
Necrotising enterocolitis
Neonatal encephalopathy
Chronic lung disease
Severe jaundice requiring phototherapy
Major congenital anomaly
Severe infection e.g. septicaemia, meningitis
Exchange transfusion

CASE