Risk factors	Possible adverse effects during pregnancy and associated problems	Action	Level of care
Risk factors identified from the patient's history			
Maternal age			
15 years or less	Pregnancy may have a detrimental effect on the development of the patient's personality.	Determine the duration of pregnancy. If 20 weeks or less termination may be indicated.	2
16-19 years	Poor social circumstances. Pre-eclampsia. Anaemia.	Refer to social worker for support. Watch for proteinuria and a rise in blood pressure from 28 weeks. Regular Hb checks.	1
37 years or more	Medical conditions such as hypertension and diabetes are commoner.	Carefully look for medical problems at the first visit, and at 28 and 34 weeks Motivate for sterilisation.	2
37 years or more	Chromosome abnormalities are commoner, e.g. Down syndrome	Determine the duration of pregnancy: If 13 weeks or less, an ultrasound examination for nuchal thickness is done, followed at 22 weeks looking for structural defects. If more than 13 weeks, a genetic amniocentesis should be done between 16 and 22 weeks. Before referral, make sure that the patient will agree to termination of pregnancy, if this is indicated.	2
General history			
Allergies	Penicillin allergy with an anaphylactic reaction is always dangerous, but rarely occurs.	Allergies must always be clearly documented on the folder and antenatal card.	1

Risk factors	Possible adverse effects during pregnancy and associated problems	Action	Level of care
Body Mass Index (BMI)	Cephalopelvic disproportion and shoulder dystocia. Hypertension and diabetes Use weight, height and attached BMI table. When reading BMI off table: With 1st visit in 2nd trimester, subtract 4 kg With 1st visit in 3rd trimester, subtract 8 kg	Ultrasound examination for accurate gestational age estimation at 18-22 weeks. Monitor for hypertension and glycosuria. BMI below 40 BMI above 40 but below 50 BMI above 50	 1 2 3
Diabetes mellitus (in the patient)	Pregnancy worsens the diabetes. Insulin requirements increase. Higher incidence of fetal death. Large babies with obstructed labour and birth injuries. Neonatal hypoglycaemia.	Careful control of the diabetes, in order to keep the blood glucose levels as close to normal as possible is absolutely essential.	3
Diabetes mellitus (family history)	There is an increased risk of the patient developing diabetes during pregnancy.	Careful screen for glycosuria: If absent – If present –	 1 2
Epilepsy	Convulsions may occur more frequently in pregnancy. Some anticonvulsant drugs may cause congenital abnormalities.	The dose of anticonvulsant drugs may need to be increased. Put the patient on a safe drug before pregnancy (e.g. carbamazepine). The drugs are not changed during pregnancy because of the danger of convulsions.	2
Congenital abnormalities (in the family)	Serious abnormalities tend to recur.	Arrange for ultrasound and amniocentesis at 16 weeks: If normal – If abnormal –	 1 2
Drugs or medication	Danger of teratogenesis. Points towards a disease NOT mentioned in the history.	Get accurate details and consult a doctor.	1
HIV	Mother-to-child transmission of HIV. With AIDS the mother's clinical condition may deteriorate.	Join a prevention of mother-to-child transmission programme. Refer to an antiretroviral (ARV) clinic for HAART. The stage of disease needs to be determined and noted. Check at each visit for symptoms and signs indicating progression at a more advanced stage of disease.	1 2

Risk factors	Possible adverse effects during pregnancy and associated problems	Action	Level of care
Auto-immune diseases	Raised perinatal mortality rate. Early onset of severe pre-eclampsia.	Get detailed information about the disease and medication.	3
Psychiatric illness	Suicide is commoner. Illness may become worse during pregnancy.	Get detailed information about the disease and medication. Termination of pregnancy may be indicated (if duration of pregnancy is less than 20 weeks).	2
Rubella	Congenital abnormalities.	Ask about fever and a skin rash in the first trimester of pregnancy and also about contact with rubella. Antibody titres can confirm or exclude diagnosis.	1
Thyrotoxicosis (hyperthyroidism)	Thyrotoxicosis and/or goitre in the neonate.	Get detailed information about the illness and medication. Thyroid hormone levels in cord blood.	2
		Systematic history	
Respiratory System			
Asthma	Prostaglandin F2 alpha is contra-indicated. Asthma usually improves during pregnancy.	Ask about medication and symptoms: Asymptomatic and not on steroids – Symptomatic and on steroids –	 1 2
Chronic cough more than 21 days. Night sweats and weight loss.	Possible tuberculosis and/or AIDS.	Single X-ray chest with fetus screened off and sputum for TB bacilli. A rapid test if HIV status unknown.	1
Active tuberculosis	Spread to other family members and the newborn infant.	If stable and on treatment. The newborn infant must be given isoniazid.	1
Cardiovascular System			
Hypertension: 1. Diastolic 90 mm Hg or more. 2. Antihypertensive treatment.	Pre-eclampsia, abruptio placentae, and IUGR or perinatal death.	Change to alpha methyldopa and stop diuretics: With good control and no proteinuria – With diastolic 90 mm Hg or more or proteinuria –	 2 3
Dyspnoea and orthopnoea	Symptoms of heart failure.	Underlying heart disease must be excluded or confirmed by the doctor.	2
Rheumatic heart disease	Cardiac output increases with increased risk of cardiac failure and maternal death.	No symptoms or signs of heart failure, and no stenotic heart valve lesions – Symptoms and signs of heart failure and/or stenotic heart valve lesions –	2 3

Risk factors	Possible adverse effects during pregnancy and associated problems	Action	Level of care
Varicose veins	May indicate previous venous thrombosis. Become worse during pregnancy.	Watch for possible thrombosis. Bedrest and elastic stockings.	1
Thrombo-embolism	Increased incidence in pregnancy with risk of maternal death.	Anticoagulant therapy during pregnancy may have to be considered.	3
Alimentary System			
Haemorrhoids	May get worse in pregnancy. May prolapse and thrombose.	Only conservative management needed.	1
Jaundice	Danger if the patient is a carrier of the hepatitis B virus. Can infect the infant during delivery.	Test for the hepatitis B antigen: If antigen absent – If antigen present (the infant must be given hyperimmune globulin and be immunised) –	1 2
HIV positive and on HAART	High risk for serious liver damage	Stop nevirapine and refer to an ARV clinic	2
Urinary system			
Pyelonephritis	High risk of recurrence.	Midstream urine (MSU) for culture to be sure that the infection is completely treated.	1
Cystitis	Common in pregnancy.	MSU for culture if symptomatic.	1
Surgical History			
Myomectomy	Danger of ruptured uterus.	Elective caesarean section indicated.	2
Thyroidectomy	Hypothyroidism can develop during pregnancy with the danger of abortion.	If hyperthyroidism was the indication for surgery, manage as for thyrotoxicosis. Look carefully for an operation scar. Thyroid function tests are indicated.	2
Chest surgery	High risk of thrombosis of artificial heart valves in pregnancy.	Warfarin: danger of teratogenesis in the 1st and bleeding in the 3rd trimester. Correct use of anticoagulant therapy.	3
Previous obstetric history			
Abruptio placentae	Tends to recur: 10% chance after 1 previous abruption. 25% chance after 2 previous abruptions.	Advise the patient: Induce labour at 38 weeks. Deliver at 34 weeks, antenatal steroids for lung maturity must be given –	 2 3
Diabetes mellitus	Recurs in successive pregnancies. Complications already mentioned.	Random blood glucose if there is glycosuria.	2

Risk factors	Possible adverse effects during pregnancy and associated problems	Action	Level of care
Ectopic pregnancy	High risk of recurrence.	Gynaecological examination to confirm intra-uterine pregnancy (ultrasound if uncertain).	1
Grande multiparity (5 or more pregnancies have reached viability)	Medical conditions are commoner. Obstetric complications are commoner: IUGR, multiple pregnancy, abnormal lie, obstructed labour and postpartum haemorrhage.	Motivate for sterilisation. Look for medical conditions at the first visit. Look for abnormal lie after 34 weeks.	2
Infertility	Ectopic pregnancy and multiple pregnancy commoner.	Gynaecological examination to confirm intra-uterine pregnancy and the size of the uterus. (Ultrasound examination is indicated.)	2
Caesarean section(s)	Danger of ruptured uterus with previous vertical uterine incision, or with two or more caesarian sections.	Get details of the indication and type of incision from old records. Elective caesarean section at 39 weeks if 2 previous caesarean sections or a vertical incision.	2
Congenital abnormalities	Possible genetic inheritance. High risk of recurrence.	Genetic counselling. Amniocentesis and ultrasound may be useful.	2
Abortion	More than two first trimester abortions. One or more mid-trimester abortions.	Genetic amniocentesis indicated. If history indicates an incompetent cervix, a MacDonald stitch may be indicated (inserted at 14-16 weeks).	2 2
Perinatal death	Highest risk group for another perinatal death to occur (especially when the cause is unknown).	Get a detailed history and the notes from the previous pregnancy.	2
Postpartum haemorrhage and retained placenta	Tend to recur in successive pregnancies.	Deliver in hospital.	2
Pre-eclampsia	Two groups: 1. Primigravidas with pre-eclampsia close to term. 2. Previous pregnancy with pre-eclampsia developing in late 2nd or early 3rd trimester of pregnancy.	Low risk of recurrence. High risk of recurrence. Low dose aspirin (Disprin) 75 mg daily from 14 weeks.	1 2
Primigravida	Higher incidence of pre-eclampsia late in pregnancy.	Careful attention to blood pressure and proteinuria.	1
Vacuum extraction or forceps delivery	May indicate cephalopelvic disproportion.	Careful use of the partogram in labour.	1

Risk factors	Possible adverse effects during pregnancy and associated problems	Action	Level of care
Preterm labour	High risk of a recurrence in the same pregnancy.	Assess the cervix regularly from 26 to 32 weeks for changes, more regular bed rest, no intercourse in the second half of pregnancy. If there is cervical incompetence, a MacDonald suture may be indicated.	3
Present obstetric history			
Antepartum haemorrhage	Abruptio placentae and placenta praevia are both serious complications. Local causes, e.g. vaginitis, cervicitis, can also cause bleeding.	If not currently bleeding and there is no fetal distress: 1. Do speculum examination: No local cause. Treatable local cause present. 2. Sonology shows placenta praevia.	 2 1 3
Asymptomatic bacteriuria	33% incidence of pyelonephritis in these patients. High risk of preterm labour.	Course of antibiotics. Repeat urine culture at next antenatal visit.	1
Diastolic blood pressure of 90 mm Hg or more	Hypertension or pre-eclampsia.	Repeat after 30 minutes rest on her side: If diastolic 90-99 mmHg without proteinuria, start alpha methyl dopa. If diastolic 100 mmHg or more or proteinuria, admit to hospital.	 2 2
Reduced fetal movements	Fetal distress or intra-uterine death.	Duration of pregnancy 28 weeks or more. Repeat kick charts: Good count without IUGR. Good count with IUGR. If count remains poor, admit to hospital.	 1 2 2
Glycosuria 3+ or more	Probable diabetes.	Random blood glucose estimation: 8 to 11 mmol/l – arrange for fasting blood glucose estimation. 11 mmol/l or more = diabetes. Admit to hospital for control if diabetes diagnosed.	 1 2
Glycosuria 1+ and 2+	Possible diabetes.	Arrange for random blood glucose estimation. Less than 8 mm/l is normal.	1
Haemoglobin less than 10 g/dl	Anaemia in pregnancy.	Arrange full blood count. If confirmed anaemia – Refer.	2
Haematuria	Possible cystitis. Bilharzia, if endemic in the area.	Urine microscopy and culture. Treat cystitis.	1

Risk factors	Possible adverse effects during pregnancy and associated problems	Action	Level of care
Multiple pregnancy	Greater risk of preterm labour. High incidence of perinatal death and pre-eclampsia. Anaemia.	Regular vaginal examinations from 26 weeks for cervical effacement and dilatation. Careful monitoring of proteinuria and rising blood pressure. Do Hb more frequently. Ultrasound examination for growth and chorionicity: • Monochorionic (one placenta) • Dichorionic (two placentas)	 3 2
Pyelonephritis in current pregnancy	High risk of recurrence.	Follow-up urine culture to ensure that treatment was successful.	2
Polyhydramnios	Congenital abnormalities. Multiple pregnancy. Diabetes mellitus. Rh sensitisation may be present.	Ultrasound examination and random blood glucose estimation are indicated. Check blood groups, and possible sensitisation. Exclude oesophageal atresia in the infant immediately after birth.	2
Proteinuria	Pre-eclampsia or renal disease, e.g. chronic nephritis or nephrosis, may be present.	Exclude urinary tract infection. Test urine for protein: Trace (150 mg/l) can be normal. 1+ (500 mg/l) and blood pressure normal. More than 1 + indicates pre-eclampsia or serious kidney disease. Admit to hospital.	 1 2 2
Ruptured membranes	Preterm labour and chorioamnionitis.	If 36 weeks or more admit to hospital, wait until the membranes have been ruptured for 6 hours, then induce labour with oxytocin. If 34 weeks or less transfer to level 2 hospital.	1 2
Rhesus negative	Rh-sensitisation with hydrops fetalis.	If no antibodies, retest for antibodies at 26, 32 and 38 weeks. If antibodies present: Titre less than 1:16. Titre above 1:16 or more.	1 2 3
Preterm labour	Preterm infant.	If 34 weeks or more deliver in level 2 hospital. If less than 34 weeks admit to level 3 hospital. Consider suppression of labour with a beta2 stimulant.	2 3
VDRL and FTA/ TPHA positive, or VDRL titre 1:16 or more	Congenital syphilis.	Patient must receive full treatment.	1

Risk factors	Possible adverse effects during pregnancy and associated problems	Action	Level of care
VDRL titre less than 1: 16 and FTA or TPHA not available	No history of full treatment of woman and partner in past 3 months.	Patient must be fully treated.	1
Uterus larger than dates	Multiple pregnancy. Polyhydramnios. Diabetes. Large fetus. Incorrect dates.	Arrange for sonology and random blood glucose estimation. With a large fetus there is a danger of disproportion Be ready for shoulder dystocia.	2
Uterus smaller than dates	IUGR. Oligohydramnios Fetal death. Incorrect dates.	Careful measurement of fundal growth and fetal movement counts: Good growth over a period of 2 weeks. No growth over a period of 2 weeks. With few or no fetal movements, admit to hospital.	 1 2 2
Abnormal lie	Breech, oblique or transverse lies suggest possible placenta praevia, multiple pregnancy or disproportion.	Less than 34 weeks, not important. If more than 34 weeks: exclude the named complications, and refer to a doctor for external cephalic version at 36 weeks, if there are no contraindications: Successful version. All others.	 2 1
Social history			
Alcohol	Fetal alcohol syndrome.	Counselling: no alcohol should be drunk during pregnancy.	1
Religion (Customs)	Fear that certain customs will not be fulfilled, e.g. with regard to abortions, placenta, etc.	Counselling: Religious beliefs will be respected.	1
Single mother and/or unwanted pregnancy	Complications of pregnancy are commoner because of usually poorer socio-economic circumstances.	Social support may be needed. Advise about an effective method of family planning. Sterilisation may be indicated in a multipara.	1
Smoking	Danger of IUGR.	Advice to the patient: strongly advise her to stop smoking. Encourage her if she stops. Careful attention to fundal growth.	1
Poor socio-economic circumstances	Pregnancy complications will occur more commonly. Malnutrition, infection and anaemia also occur commonly.	Social support necessary. Advise on effective method of family planning. Sterilisation may be indicated in a multiparous patient.	1

BMI Table

	Height in cm														
Weight in kg		140	145	150	155	160	165	170	175	180	185	190	195	200	205
	48	24.5	22.8	21.3	20.0	18.7	17.6	16.6	15.7	14.8	14.0	13.3	12.6	12.0	11.4
	51	26.0	24.3	22.7	21.2	19.9	18.7	17.6	16.7	15.7	14.9	14.1	13.4	12.8	12.1
	54	27.6	25.7	24.0	22.5	21.1	19.8	18.7	17.6	16.7	15.8	15.0	14.2	13.5	12.8
	57	29.1	27.1	25.3	23.7	22.3	20.9	19.7	18.6	17.6	16.7	15.8	15.0	14.3	13.6
	60	30.6	28.5	26.7	25.0	23.4	22.0	20.8	19.6	18.5	17.5	16.6	15.8	15.0	14.3
	63	32.1	30.0	28.0	26.2	24.6	23.1	21.8	20.6	19.4	18.4	17.5	16.6	15.8	15.0
	66	33.7	31.4	29.3	27.5	25.8	24.2	22.8	21.6	20.4	19.3	18.3	17.4	16.5	15.7
	69	35.2	32.8	30.7	28.7	27.0	25.3	23.9	22.5	21.3	20.2	19.1	18.1	17.3	16.4
	72	36.7	34.2	32.0	30.0	28.1	26.4	24.9	23.5	22.2	21.0	19.9	18.9	18.0	17.1
	75	38.3	35.7	33.3	31.2	29.3	27.5	26.0	24.5	23.1	21.9	20.8	19.7	18.8	17.8
	78	39.8	37.1	34.7	32.5	30.5	28.7	27.0	25.5	24.1	22.8	21.6	20.5	19.5	18.6
	81	41.3	38.5	36.0	33.7	31.6	29.8	28.0	26.4	25.0	23.7	22.4	21.3	20.3	19.3
	84	42.9	40.0	37.3	35.0	32.8	30.9	29.1	27.4	25.9	24.5	23.3	22.1	21.0	20.0
	87	44.4	41.4	38.7	36.2	34.0	32.0	30.1	28.4	26.9	25.4	24.1	22.9	21.8	20.7
	90	45.9	42.8	40.0	37.5	35.2	33.1	31.1	29.4	27.8	26.3	24.9	23.7	22.5	21.4
	93	47.4	44.2	41.3	38.7	36.3	34.2	32.2	30.4	28.7	27.2	25.8	24.5	23.3	22.1
	96	49.0	45.7	42.7	40.0	37.5	35.3	33.2	31.3	29.6	28.0	26.6	25.2	24.0	22.8
	99	50.5	47.1	44.0	41.2	38.7	36.4	34.3	32.3	30.6	28.9	27.4	26.0	24.8	23.6
	102	52.0	48.5	45.3	42.5	39.8	37.5	35.3	33.3	31.5	29.8	28.3	26.8	25.5	24.3
	105	53.6	49.9	46.7	43.7	41.0	38.6	36.3	34.3	32.4	30.7	29.1	27.6	26.3	25.0
	108	55.1	51.4	48.0	45.0	42.2	39.7	37.4	35.3	33.3	31.6	29.9	28.4	27.0	25.7
	111	56.6	52.8	49.3	46.2	43.4	40.8	38.4	36.2	34.3	32.4	30.7	29.2	27.8	26.4
	114	58.2	54.2	50.7	47.5	44.5	41.9	39.4	37.2	35.2	33.3	31.6	30.0	28.5	27.1
	117	59.7	55.6	52.0	48.7	45.7	43.0	40.5	38.2	36.1	34.2	32.4	30.8	29.3	27.8
	120	61.2	57.1	53.3	49.9	46.9	44.1	41.5	39.2	37.0	35.1	33.2	31.6	30.0	28.6
	123	62.8	58.5	54.7	51.2	48.0	45.2	42.6	40.2	38.0	35.9	34.1	32.3	30.8	29.3
	126	64.3	59.9	56.0	52.4	49.2	46.3	43.6	41.1	38.9	36.8	34.9	33.1	31.5	30.0