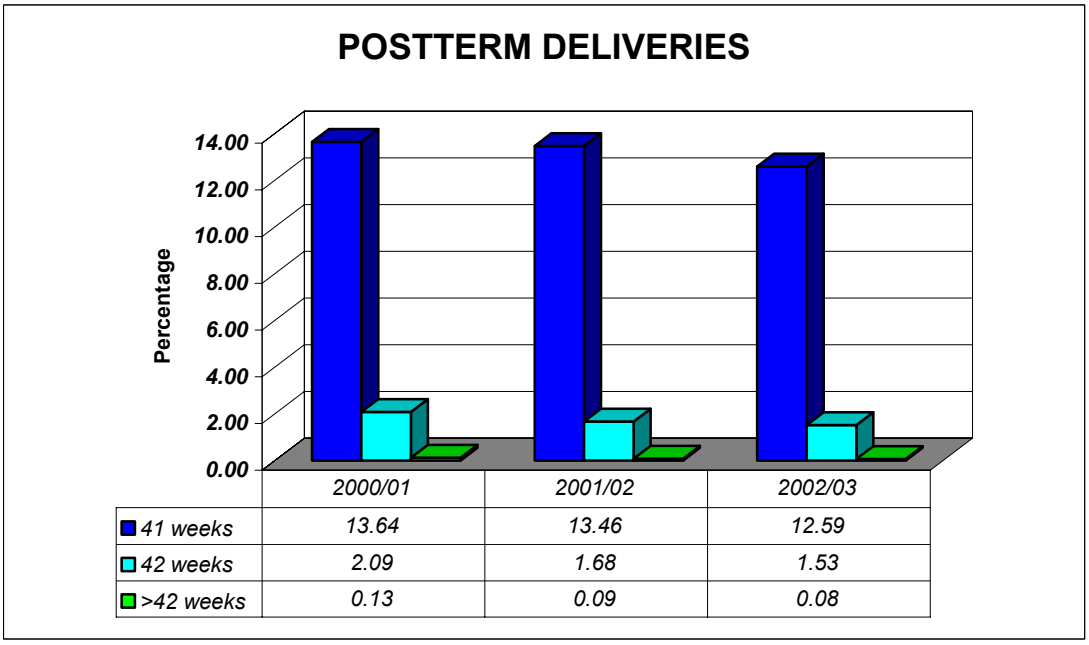
Obstetric Guideline 7

POSTTERM PREGNANCY

I. INTRODUCTION

Postterm pregnancy is defined as pregnancy beyond 42 weeks or 294 days gestation from the LMP.[1] Traditionally, it is from 42 weeks gestational age that risk of adverse fetal and neonatal outcomes, and particularly risk of perinatal death, are increased.[1] However, it is known that the risk of adverse perinatal outcomes may increase as early as 41 completed weeks and is associated with placental insufficiency.[1,2]

Data obtained from the B.C. Perinatal Database Registry (BCPDR) and depicted in the graph below shows the percentage of pregnancies in BC that went to 41 completed weeks (41-41$^{6}/_{7}$), 42 completed weeks (42-42$^{6}/_{7}$), and beyond 42 completed week's gestation for the periods of 2000/2001 (total deliveries 40,051), 2001/2002 (total deliveries 39,862), and 2002/2003 (total deliveries 39,791). The trend over the three-year period shows a decreasing percentage of pregnancies in each of the gestational age categories.



	2000/01	2001/02	2002/03
41 weeks	13.64	13.46	12.59
42 weeks	2.09	1.68	1.53
>42 weeks	0.13	0.09	0.08

Source: BC Perinatal Database Registry

Historically, postterm pregnancy has been managed in two ways: either inducing labour at 41to 42 weeks gestation, or awaiting the onset of spontaneous labour while monitoring fetal well being with ultrasound, electronic fetal monitoring, and daily fetal movement counts. Up until 1992 it was unclear which was the better approach for management. In 1992 the results of an international randomized control trial[3] suggested that induction of labour results in a lower rate of cesarean section than serial antenatal monitoring, while the rates of perinatal mortality and neonatal morbidity are similar.

The recommendations in this guideline are based predominantly on the results of a review completed by Crowley[4] and published in the Cochrane Library. The main results in this review are:

- Routine early pregnancy ultrasound reduces the number of women who require induction of labour for apparent postterm pregnancy
- Inducing labour at ≥ 41 weeks results in a lower rate of non-reassuring fetal heart tracings, a lower rate of meconium stained amniotic fluid, and a lower rate of fetal macrosomia (> 4,000 gms)
- Routine induction of labour at ≥ 41 weeks reduces perinatal mortality, predominantly because of the decreased stillbirth rate (OR 0.20, CI (95%) 0.06 – 0.70)
- Nipple stimulation in third trimester does not appear to affect the incidence of postterm pregnancy
- Routine induction does not increase the caesarean section rate for both nulliparous and parous women in postterm pregnancies compared to serial antenatal monitoring in postterm pregnancy

Also published in the Cochrane Library is Boulain's recent review of sweeping the membranes at term. When performed as a general policy in women at term, this intervention appears to be associated with reduced duration of pregnancy and reduced frequency of pregnancy continuing beyond 41 weeks (RR 0.59, 95% CI 0.46 to 0.74) and 42 weeks (RR 0.28, 95% CI 0.15 to 0.50).[5]

1.1 BC RATES OF CAESAREAN SECTION FOR SPONTANEOUS AND INDUCED LABOUR AT 41, 42, AND >42 WEEKS GESTATIONAL AGE (NULLIPAROUS & MULTIPAROUS)

Data tables provided by the BCPDR are included on page 3and 4 to depict provincial rates of caesarean section for both spontaneous and induced labour at 41, 42, and >42 weeks gestational age (nulliparous p.3 and multiparous p.4) for the time periods of 2000/2001, 2001/2002, and 2002/2003.

The rates of caesarean section are generally consistently higher in the induced group versus those who had spontaneous labour with expectant management, with the greatest difference in rates apparent in the nulliparous group. It is apparent from the higher rate of caesarean section in the induced groups that the provincial data do not replicate research findings reported in the literature. The reasons for this may include stringent research controls utilized during randomized clinical trials, strictly defined inclusion and exclusion criteria, and consistent methods of induction. Primary care providers should be selective regarding who is induced, and cognizant of the need for cervical ripening prior to initiating labour induction.

Deliveries of Nulliparous Mothers @ 41, 42, >42 Weeks
April 1, 2000 to March 31, 2003
British Columbia Perinatal Database Registry

APRIL 1, 2000 TO MARCH 31, 2001

Gestational Age (Completed Weeks)	Spontaneous Labour					Induced Labour				
	Vaginal		C/Section		Total Deliveries	Vaginal		C/Section		Total Deliveries
	#	%	#	%		#	%	#	%	
41	1178	75.76	377	24.24	1,555	825	60.62	536	39.38	1,361
42	151	72.95	56	27.05	207	153	55.84	121	44.16	274
>42	16	76.19	5	23.81	21	2	25.00	6	75.00	8

APRIL 1, 2001 TO MARCH 31, 2002

Gestational Age (Completed Weeks)	Spontaneous Labour					Induced Labour				
	Vaginal		C/Section		Total Deliveries	Vaginal		C/Section		Total Deliveries
	#	%	#	%		#	%	#	%	
41	953	71.65	377	25.86	1,330	861	59.13	595	40.87	1,456
42	114	72.15	44	27.85	158	120	59.70	81	40.30	201
>42	7	77.78	2	25.00	9	1	33.33	2	66.67	3

APRIL 1, 2002 TO MARCH 31, 2003

Gestational Age (Completed Weeks)	Spontaneous Labour					Induced Labour				
	Vaginal		C/Section		Total Deliveries	Vaginal		C/Section		Total Deliveries
	#	%	#	%		#	%	#	%	
41	1,007	72.87	375	27.13	1,382	801	58.17	576	41.83	1,377
42	117	70.91	48	29.10	165	97	53.89	83	46.11	180
>42	9	90.00	1	10.00	10	5	50.00	5	50.00	10

DELIVERIES INCLUDE STILLBIRTHS AND LIVE BIRTHS

Deliveries of Multiparous Mothers @ 41, 42, >42 Weeks
April 1, 2000 to March 31, 2003
British Columbia Perinatal Database Registry

APRIL 1, 2000 TO MARCH 31, 2001

Gestational Age (Completed Weeks)	Spontaneous Labour					Induced Labour				
	Vaginal		C/Section		Total Deliveries	Vaginal		C/Section		Total Deliveries
	#	%	#	%		#	%	#	%	
41	1,297	91.02	128	8.99	1,425	891	88.31	118	11.69	1,009
42	184	93.88	12	6.12	196	120	92.31	10	7.69	130
>42	13	86.67	2	13.33	15	6	85.71	1	14.29	7

APRIL 1, 2001 TO MARCH 31, 2002

Gestational Age (Completed Weeks)	Spontaneous Labour					Induced Labour				
	Vaginal		C/Section		Total Deliveries	Vaginal		C/Section		Total Deliveries
	#	%	#	%		#	%	#	%	
41	1,232	93.05	92	6.95	1,324	1,007	90.8	102	9.2	1,109
42	132	86.27	21	13.73	153	113	91.13	11	8.87	124
>42	11	84.62	2	15.38	13	6	100.00	0	0.00	6

APRIL 1, 2002 TO MARCH 31, 2003

Gestational Age (Completed Weeks)	Spontaneous Labour					Induced Labour				
	Vaginal		C/Section		Total Deliveries	Vaginal		C/Section		Total Deliveries
	#	%	#	%		#	%	#	%	
41	1,114	91.01	110	8.99	1,224	825	89.87	93	10.13	918
42	124	91.18	12	8.82	136	81	83.51	16	16.49	97
>42	10	100.00	0	0.00	10	3	100.00	0	0.00	3

DELIVERIES INCLUDE STILLBIRTHS AND LIVE BIRTHS

2000/2001 - Full Provincial Participation
(Births Under 300 - 55 facilities; Births 300 to 499 (Includes Home Births) - 3 facilities; Births 500+ - 22 facilities)
2001/2002 - Full Provincial Participation
(Births Under 300 - 51 facilities; Births 300 to 499 (Includes Home Births) - 6 facilities; Births 500+ - 21 facilities)
2002/2003 - Full Provincial Participation
(Births Under 300 - 48 facilities; Births 300 to 499 (Includes Home Births) - 8 facilities; Births 500+ - 20 facilities)

2. FETAL RISKS

- Fetal macrosomia
- Meconium aspiration
- Cerebral palsy
- Neonatal encephalopathy
- IPPV (with intubation)
- Perinatal death

3. CLINICAL MANAGEMENT **(See Appendix A: Postterm Clinical Management Algorithm)**

3.1 GESTATIONAL AGE CALCULATION

Gestational age must be assessed carefully to avoid delivery of a premature infant. Because actual dates of conception are rarely known, the LMP is used as the reference point. This, however, can make the accuracy of gestational age determination unreliable because of:

- Irregular menses
- A cycle length other than 28 days
- Recent cessation of the birth control pill
- Inconsistent ovulation times

Reviews compiled in the Cochrane Library[4,6] found that routine early pregnancy ultrasound reduces the number of women who require induction of labour for apparent post-term pregnancy. Based on this evidence, it is recommended is that all pregnant patients, and certainly those who do not have regular menses, have an ultrasound examination for gestational age assessment, prior to 20 weeks; preferably between 18 – 19 weeks. If there is more than a **one week** discrepancy between the LMP and the ultrasound findings, then **the ultrasound findings should be used to determine the EDD.**

Management options will depend on gestational age, absence/presence of maternal risk factors and/or evidence of fetal compromise, and maternal preferences/informed consent.

3.2 MANAGEMENT TO $40^{6}/_{7}$ WEEKS GESTATION

A. Healthy, uncomplicated pregnancy and fetal growth/amniotic fluid normal
For the healthy, uncomplicated pregnancy, there is no evidence to support elective induction of labour and there is no evidence to support commencement of serial antenatal monitoring - non stress test (NST) or Amniotic Fluid Index (AFI). (See Appendix B: Amniotic Fluid Index Interpretation).

B. Presence of maternal risk factors or evidence of fetal compromise
Recommend cervical ripening as necessary and induction (See BCRCP Obstetric Guideline 1: Induction of Labour) if there is evidence of maternal risk factors or evidence of fetal compromise such as:

- Intrauterine growth restriction:
  - symphysis-fundal height small for gestational age
  - IUGR and/or oligohydramnios diagnosed by ultrasound
  - maternal weight loss or inadequate weight gain
- Non-reassuring or non-reactive NST

3.3 MANAGEMENT AT 41 WEEKS GESTATION[7]

A. Healthy, uncomplicated pregnancy

Inform the woman of the options and risks/benefits of labour induction versus expectant management, and **offer** her labour induction. Establish the Bishop Score and ensure a ripening agent is used as necessary, prior to induction.

B. If mother declines induction, then provide expectant management:

- Daily fetal movement counts
- NST twice/week to 42 weeks
- Ultrasound to assess AFI twice weekly to 42 weeks
- **If either the NST or AFI is abnormal, then initiate induction immediately**
- **If AFI assessment is not available, then induce**
- **Induce at 42 weeks if NST and AFI normal**

3.4 MANAGEMENT DURING LABOUR AND DELIVERY

Consider amniotomy to diagnose thick meconium. If meconium stained amniotic liquor is present then consider risk of meconium aspiration; continuous fetal assessment with electronic fetal monitoring (EFM) is recommended. If meconium and variable decelerations are present, then consider amnioinfusion. If the woman has meconium stained liquor and a non-reassuring EFM tracing and is in a facility without operating room (OR) capability, then transfer to a facility with OR capability should be considered. Be prepared for shoulder dystocia and neonatal resuscitation at delivery (See Newborn Guideline 7: Newborn Resuscitation, Resources and Education).

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3. Hannah, M., et al. (1992). Induction of labour as compared with serial antenatal monitoring in post-term pregnancy. The New England Journal of Medicine, 326(24), p.1587-92.
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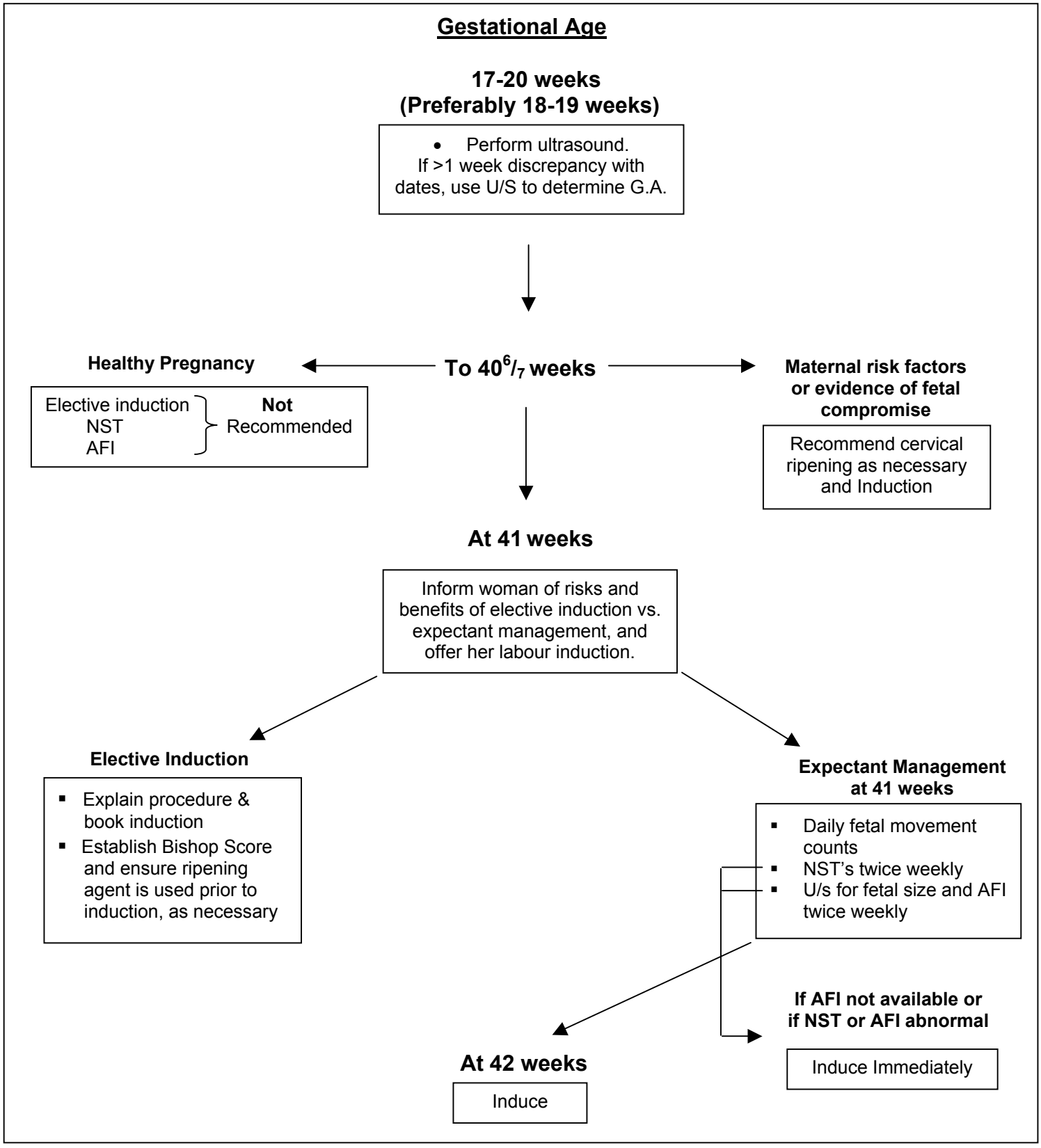
APPENDIX A

POSTTERM PREGNANCY
CLINICAL MANAGEMENT ALGORITHM



APPENDIX B

AMNIOTIC FLUID INDEX (AFI) INTERPRETATION[8]

The amount of amniotic fluid has a range of normal values, and is expressed as a score derived by adding up the centimeters of depth of four pockets of fluid seen on ultrasound. Some researchers feel one good pocket of 3 centimeters depth is enough to assume that there is an adequate amount of amniotic fluid around the rest of the baby, but traditionally the AFI is calculated as the sum of four pockets.

Normal	AFI 6 cm - 18 cm (5^{th} percentile to 95^{th} percentile) Mean approximately 12 cm
Oligohydramnios:	AFI < 5 cm ($<5^{th}$ percentile)
Polyhydramnios:	AFI > 18 cm (95^{th} percentile)

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