Dear Care Provider:

Your patient is exploring the option of a new combined first trimester screen known as the Advanced First Trimester Screen or aFTS from Beam Radiology. This option offers the highest level of screening technology for aneuploidies T21, T18, T13, Monosomy X, and Triploidy by utilizing NIPT (non-invasive prenatal test) in combination with the first trimester anatomy ultrasound. Fetal sex determination is available when selected, for no additional fee.

> **ACOG recommends offering aneuploidy screening, like NIPT, to all pregnant women, regardless of maternal age.1,2**

Beam's program combines genetic screening technology with a comprehensive Advanced First Trimester ultrasound (aFTS), performed by highly trained obstetrical sonographers, at approximately 12 weeks gestation. This ultrasound component provides screening for anatomical anomalies.

Understanding the Options for Screening

	The Nuchal Translucency + NB Screen	The Advanced First Trimester Screen (aFTS)
Sensitivity & Specificity T21, T18,T13	Meets and exceeds the standard	>99%
False Positive Rate	5-7%	<0.1%
Timing	11-13 weeks and 6 days	10 weeks blood draw to any point in pregnancy, 11-16 weeks ultrasound. Target 12 weeks for the ultrasound.
Cost to Patient	Covered by AHS	$300 CAD for genetic screen

Advanced First Trimester Screen= genetic screening + first trimester anatomy ultrasound

aFTS= NIPT + Ultrasound

This will achieve the highest level of non-invasive screening possible and provide the heightened level of assurance your patient will truly value.

<u>Genetic Screening:</u>

The NIPT component utilizes cell free DNA from the maternal blood sample, and this can be collected as early as 10 weeks gestation and at any point up to delivery. Collection of the blood sample can be done at a Beam Radiology clinic. Payment will be tendered from the patient at the time of the blood draw. The cost for patients is $350 CAD. Beam Radiology is committed to offering the best testing options available and making them as accessible as possible to patients who desire them.

Results from the NIPT are typically available 7-10 days after the sample is received by the genetics lab. NIPT reports a **sensitivity and specificity of >99%.** When this is compared to the current model in Alberta, which AHS reports a sensitivity and specificity of 82-87%, the difference is clear. Also of great benefit to the pregnant patient is the **false positive rate** reported at only **0.1% for NIPT.** This results in far fewer referrals to genetic counselling and Maternal Fetal Medicine, as well as ordered invasive testing. The SOGC reports a false positive rate of 5-7% for the standard FTS offered in Alberta, that does not include genetic screening.

First Trimester Anatomy Ultrasound:

At the ultrasound the early fetal anatomy and the pregnancy environment will be assessed.

This comprehensive combined screening can be completed before the end of the first trimester. Any positive screening results will elicit communication from Beam, and recommendation for appropriate referrals.

What to Expect:

Once your patient has an accurate EDD, provided by the dating ultrasound, the next step is to have the bloodwork drawn at 10 weeks gestation, this is then followed by the First Trimester Anatomy ultrasound at approximately 12 weeks. When the genetic screening lab releases the report, Beam Radiology receives those results at the same time as the referring care provider. The NIPT report will also be provided to the patient at the time of the ultrasound, as long as the results are available**.** A combined report from the ultrasound, including the NIPT results, will be available on Netcare following the ultrasound.

Any **high risk NIPT** findings will result in the care provider being contacted directly, receiving a copy of the report, and recommended referral to Maternal Fetal Medicine. This often occurs before the time of the 12 week ultrasound.

Both the blood draw and the ultrasounds are performed at Beam Radiology clinics.

How to Order:

All that is required is the Beam requisition indicating the OBS series with NIPT. This completed requisition can be faxed to Beam Radiology to book the appointments appropriately, or the patient can bring this to the appointment. The patient will be charged at the time of the blood draw for the cost f the NIPT. Beam is able to offer this at a cost of $350 CAD, when booked in combination with the ultrasound.

If you have any questions or concerns, please feel free to reach out to Beam Radiology at 587-885-2988

1.American College of Obstetricians and Gynecologists. Screening for fetal chromosomal abnormalities. Obstet Gynecol. 2020(226);136(4):e48–e69. 2. Gregg AR, Skotko BG, Benkendorf JL et al. Noninvasive prenatal screening for fetal aneuploidy, 2016 update: a position statement of the American College of Medical Genetics and Genomics. Genet Med. 2016;18(10):1056-1065. 3. Taneja PA, Snyder HL, de Feo E et al. Prenat Diagn. 2016;36(3):237-243. 4. McCullough RM, Almasri EA, Guan X et al. PLoS One. 2014;9(10):e109173. 5. Ryan A, Hunkapiller N, Banjevic M et al. Fetal Diagn Ther. 2016;40(3):219-223. 6. Yaron Y. Prenat Diagn. 2016;36(5):391-396. 7. Norton ME, Jacobsson B, Swamy GK et al. N Engl J Med. 2015;372:1589-1597.