



### Fetal Medicine – New Frontiers

Fetal medicine is becoming increasingly important due to the medical advances which have expanded the ability to assess for fetal abnormalities and improve outcomes.

Today, more fetal impairments than ever, whether from genetic or environmental causes, can be diagnosed, treated, and even sometimes fixed prior to birth. These tests and procedures, however, carry their own risks. Great care must be taken to determine the cases that might benefit from fetal intervention. Additionally, as with many advances in medicine, implementation can often result in significant expenses, both for insured and insurer.

This article will discuss advances in fetal medicine and the potential benefits of such treatments. In addition, consideration will be given to whether specialized fetal cover might help contain the often catastrophic costs of congenital claims for both parents and insurers.



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#### What Is Fetal Medicine?

Fetal medicine is the medical specialty encompassing testing for and treating a broad range of fetal pathologies and malformations. Sometimes referred to as maternal-fetal medicine (MFM) or perinatology, fetal medicine focuses on managing the health concerns of the fetus as well as the mother prior to, during, and shortly after pregnancy. It first emerged as a specialty in the 1960s, when advances in research and technology first made it possible for fetal complications to be discovered and sometimes treated in utero.

Structural and functional abnormalities are found to occur in an estimated 3% to 6% of all births worldwide, according to the Centers for Disease Control and Prevention (U.S.). Causes may be genetic factors, chromosomal defects, or environmental circumstances such as maternal nutrition and exposure to toxins or viruses during gestation.



Lack of timely prenatal care as well as effective critical care during and after birth can mean a high percentage of impaired fetuses are likely to die either at birth or in their first year of life. Indeed, in some countries birth defects are the leading



cause of mortality in infants and young children. Of those who survive, their quality of life – depending on conditions and severity – is likely to be poor, and their treatments, which can include multiple surgeries, are both lengthy and expensive.

### What Is Available?

Today, the range of tests and treatments that are available during gestation is quite broad. Several abnormalities can be detected as well as monitored and treated, reducing the need for more complex, lengthier, and invasive neonatal treatments. The right point of intervention as well as the type of intervention, however, can be crucial. In some cases intervention is more effective in utero, whereas other conditions benefit more from monitoring in utero and post-delivery (i.e., neonatal) intervention.

The prenatal screenings which can detect fetal impairments and abnormalities include amniocentesis, ultrasounds and MRIs, maternal blood plasma studies to detect for chromosomal abnormalities, and tests to determine the presence or absence of genetic diseases. A second group of prenatal screens, the Fetal Biophysical Profile (BPP), assesses fetal well-being and identifies fetuses that are potentially compromised. The tests examine heart rate with fetal movement, breathing movements, gross fetal body movement (“kick

counts”), muscle tone, and amniotic fluid volumes. BPPs are especially recommended for pregnant women whose medical histories include high blood pressure, diabetes, autoimmune diseases, Rh incompatibility, prior early labor(s), premature rupture of membranes, or placental problems.

Screenings can also provide information about high-risk pregnancies where fetal impairment is not a factor. For example, fetal station or lie (the fetal position in the uterus), can be crucial, as transverse or breech pregnancies are high-risk. Finally, fetal screenings provide information that can enable effective transitions to neonatal care. This can be especially necessary for situations such as multiple fetus pregnancies, which comprise approximately 3% of all births in the U.S. and require close monitoring throughout gestation and after birth.



Many conditions require careful monitoring, targeted drug regimens, and well-planned postnatal care. For certain conditions, however, especially in cases where the fetus might not survive long after birth without intervention, fetal surgery (sometimes called prenatal or antenatal surgery) is recommended.

Fetal anomalies which can be corrected surgically before birth include: fetal-fetal transfusion syndrome, spina bifida, diaphragmatic hernia, several congenital heart diseases, tumors, pulmonary obstructions, hydrothorax, and laryngeal or bronchial atresia. Survival rates for these surgeries vary, but generally, surgery, whether open or endoscopic, can substantially reduce neonatal mortality risk. In some cases, such as for congenital diaphragmatic hernia, prenatal and then neonatal corrective surgeries have been demonstrated to reduce mortality risk.

Endoscopic surgery (or fetoscopy) refers to surgery on fetuses still in the uterus. Open fetal surgery, which has been likened to a caesarean, refers to procedures where the fetus is removed from the uterus for the procedure and then replaced (along with the amniotic fluid) once the surgery is complete. These surgeries can be performed as early as 15 weeks gestation. The minimally invasive surgeries have been shown to be effective to repair twin-twin transfusion and spina bifida. The more invasive open surgeries are performed primarily to repair abnormalities such as heart defects and myelomeningocele (spina bifida cystica).

## Underwriting and Claims Considerations

How insurers currently cover fetal medical procedures varies from market to market. Most companies view fetal procedures as preventive care and therefore do not cover them, and many have historically had exclusions for congenital conditions as well.

With the number and scope of prenatal screens increasing, claims for congenital diseases have been rising in number and cost. Still, in markets where these conditions are covered, costs generally do not exceed USD \$30,000. This is lower than the costs incurred to treat congenital conditions even in just the first year of life. It may therefore be more cost-

effective to treat conditions such as fetal lung and heart defects and spina bifida in utero, as doing so can save costs compared to postnatal procedures.

Today, regulators are increasingly requiring insurers to cover congenital conditions, and some insurers have been proactive in providing cover ahead of being required to do so. Insurers considering proactively providing benefits specifically for fetal medicine needs should determine whether and under what criteria they might cover fetal medicine procedures as well as those who have undergone them. Clear guidance both for internal use and for customer clarity should be provided, especially when determining what is medically necessary. This will avoid confusion once a claim is filed.

Insurers should also review how their companies and policies define “medical necessity” and provide clear definitions and guidelines, because not all fetal pathologies are amenable to prenatal treatment. Additionally, as each market views fetal medicine differently, claims assessors need to be sure they understand what their company’s policies will permit and not permit. For example, policies generally will exclude experimental treatment. Insurers need to be certain that any fetal treatment or procedure being considered has already been proven clinically effective in order to cover it.

## Conclusion

Insurers today are increasingly assessing the benefits fetal medicine might impart to the unborn rather than waiting until after birth. They are therefore beginning to consider the pros and cons of fetal medicine coverage and both the positive and negative cost implications in providing this cover.

For now, insurers should strongly consider the benefits of fetal medicine to mitigate fetal mortality and reduce morbidity in newborns. They also need to evaluate the cost and price their products accordingly. In the future, this growing medical specialty is likely to have a significant impact on the insurance industry, thus the benefits and risks must be understood and quantified to benefit all.

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