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Telehealth to provide prenatal genetics services: Feasibility and importance revealed during global pandemic

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Traditionally, prenatal genetic counseling is performed with face to face counseling in a prenatal diagnosis center. However, alternative forms of genetic counseling are available including use of telephone counseling, group counseling, and use of decision aids.^{1,2} Telegenetics services can benefit patients living in rural areas where there is limited access to providers with genetics expertise. Many women in the United States do not have access to prenatal genetic counseling and receive limited access to standard aneuploidy and carrier screening options because of insurance status even though these options should be offered to all pregnant women.³ Prenatal telegenetics services can address these inequalities but thus far have not been used broadly due to limited reimbursement and hospital unwillingness to provide the necessary start-up costs to implement prenatal genetics telehealth services.

Even though telehealth has been used successfully in other specialties, limited studies are available on use of this modality in prenatal genetics. One prior study assessed patient satisfaction with video counseling compared to face to face counseling and showed a high level of patient satisfaction when video conferencing was used to conduct prenatal genetic counseling consultations, suggesting that telehealth can be utilized successfully¹ in the prenatal setting.

Due to the global coronavirus pandemic, our reproductive genetics group arranged for all prenatal genetic counselors to work remotely to decrease risk of COVID-19 spread to patients and providers. The decision was made for all genetic counselors to move off site on March 15, 2020 and remote telephone/video encounters started March 17. Video visits are in process of being enabled through the electronic medical record system. In week 1, 58/91 (63.7%) telephone visits were done by our prenatal genetics team; the remainder were telephone visits performed by Maternal Fetal Medicine specialists for routine prenatal care or consultations. The reproductive genetics team was the first to move to remote encounters. After week 1, other obstetric providers including nurse practitioners, maternal fetal medicine physicians, and nutritionists were moved to remote encounters. Thus, the denominators in

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CONFLICT OF INTEREST

The authors declare no potential conflict of interest.

DATA AVAILABILITY STATEMENT

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

weeks 2 and 3 are higher than in week 1. In week 2, 43/172 (25%) remote visits were done by the reproductive genetics team and in week 3, 63/269 (23.4%) remote visits were done.

Our workflow is shown in Figure 1. One MD is at home reading ultrasounds while there is an in office MD available to do procedures such as chorionic villus sampling and amniocentesis. The genetic counselor is able to participate in video counseling for any new anomaly identified by entering a secure video-based chat. After the MD explains the ultrasound findings, the genetic counselor performs further counseling about the anomaly, offers diagnostic testing and, if accepted, places orders for genetic testing such as FISH (Fluorescent in situ hybridization), karyotype, chromosomal micro-array, and/or molecular testing.

In this model, patients still have access to a specific genetic counselor who they can see through video remote counseling enabling the counselor to appreciate visual cues and use visual aids. This model still gives the patient a non-MD contact to access for post-visit questions and a contact for psycho-social support, a skill that genetic counselors are uniquely trained in and that MDs cannot always provide to patient's satisfaction.⁴

In summary, video telehealth for prenatal genetic counseling is a viable alternative to counseling face to face and can be quickly adapted and scaled up to meet the needs of patients during a pandemic. When the pandemic is over, this model can be used to reach women in rural, underserved areas where access to providers with genetics expertise are limited. Further studies will be needed to determine which prenatal genetics services are most amenable to telehealth visits, how to optimize patient satisfaction, and determine what training and skills are needed for genetic counselors performing telehealth visits to optimize communication.

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What's already known about this topic?

- Telegenetics is a valuable modality for providing genetic counseling regarding prenatal genetic counseling.
- To date, there are few publications on the implementation of telehealth on prenatal genetic counseling services.

What does this study add?

- Here we include our workflow to implement rapid remote prenatal genetics services in the setting of a global pandemic.
- Our experience could inform others trying to develop a remote workflow during this pandemic and, in the future, enable patients with limited access to a provider with genetics expertise access to remote genetic counseling services during pregnancy.

FIGURE 1.
Workflow for prenatal diagnosis unit integrated with telegenetics