

# The Evolution of a Telegenetic Counseling Program: Lessons Learned

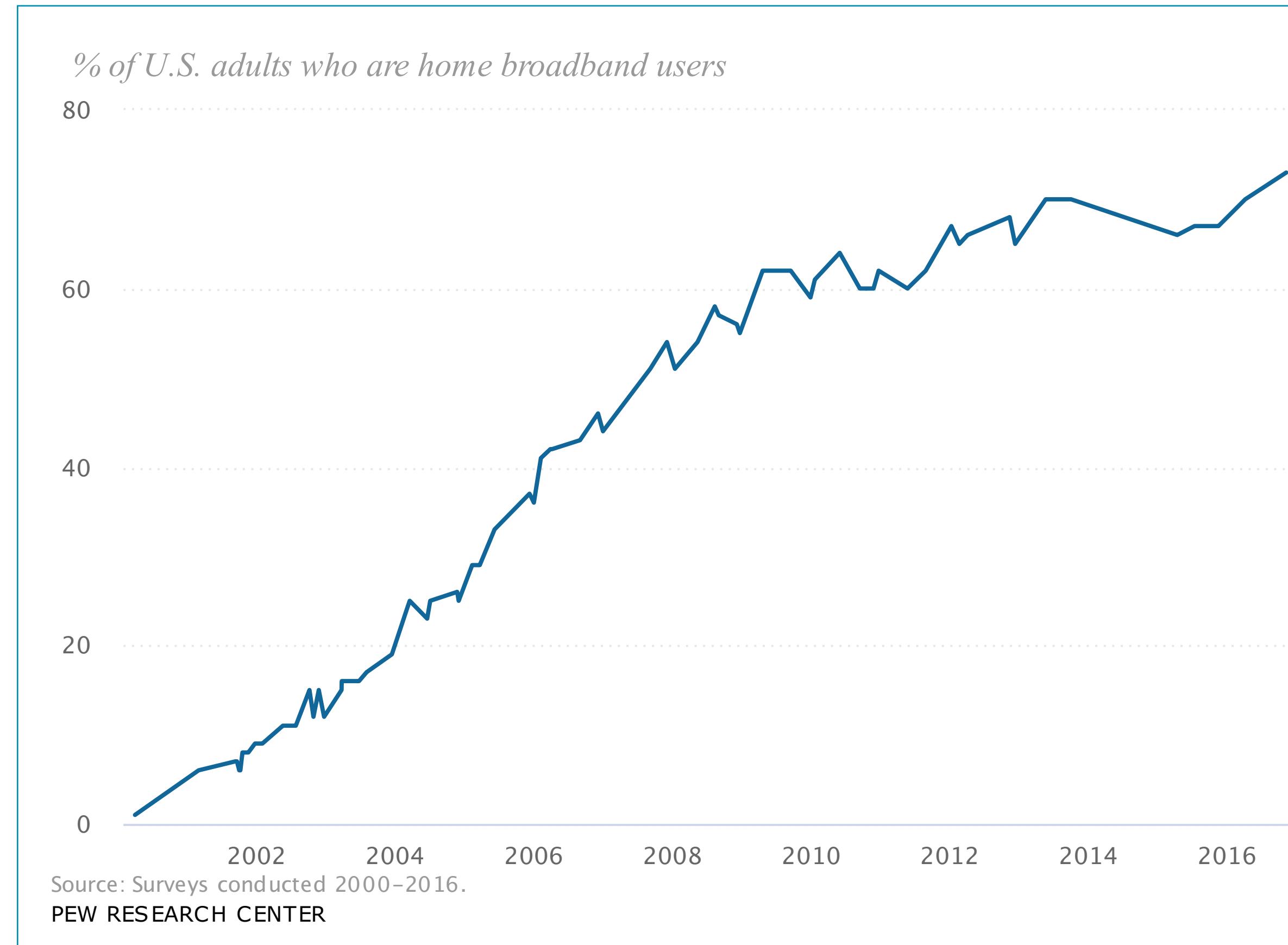
K. Fissell, D. Cutillo

Integrated Genetics, LabCorp Specialty Testing Group, Laboratory Corporation of America® Holdings, Westborough, MA

## I. Background

The expansion and growth of genetic testing in the past 10 years has been significant, with increased utilization of genetic testing through advancements such as cell-free DNA analysis, next generation sequencing, and microarray analysis. Physicians and patients routinely turn to genetic counseling to help patients understand the complexities of genetic risks and genetic testing options. Genetic counseling describes the interaction between a patient and a genetic counselor that includes an evaluation of personal and family history to determine patient specific risks for genetic disorders. A thorough explanation of those risks is followed by a discussion of available genetic testing options. Genetic counseling may also be utilized to explain the results of genetic testing and available options for follow-up based on those results. Similar to the growth of genetic testing, the expansion in telecommunication services has been equally impressive. There has been an enormous increase in the availability and accessibility of televideo communications through innovative platforms like Skype and FaceTime. Based on findings from the Pew Research Center, the overall percentage of US adults with access to home broadband connections has moved from 25% in 2005 to 75% in 2017 (Figure 1).

**Figure 1. % of US adults who are home broadband users**

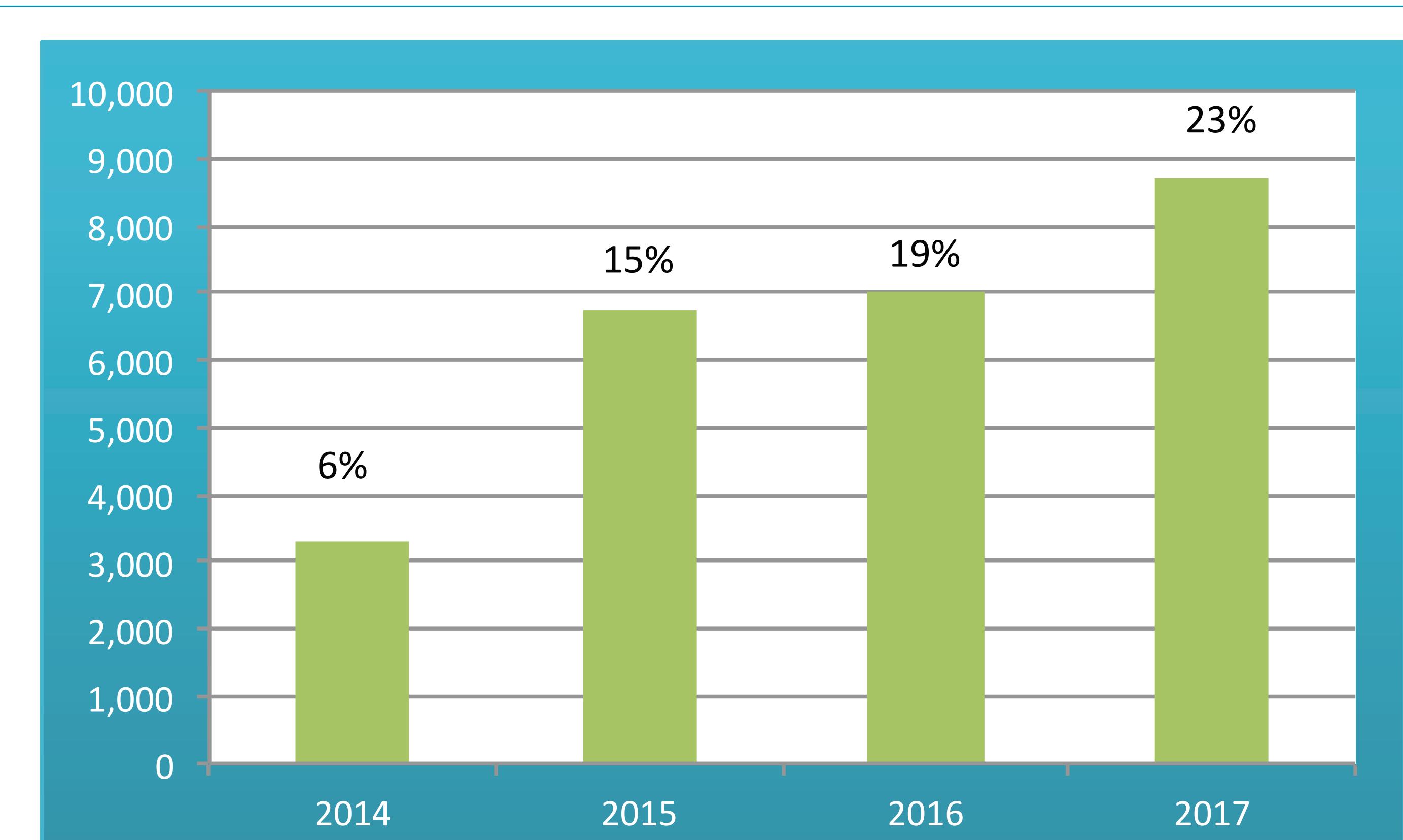


Source: Surveys conducted by the Pew Research Center

## II. Experience

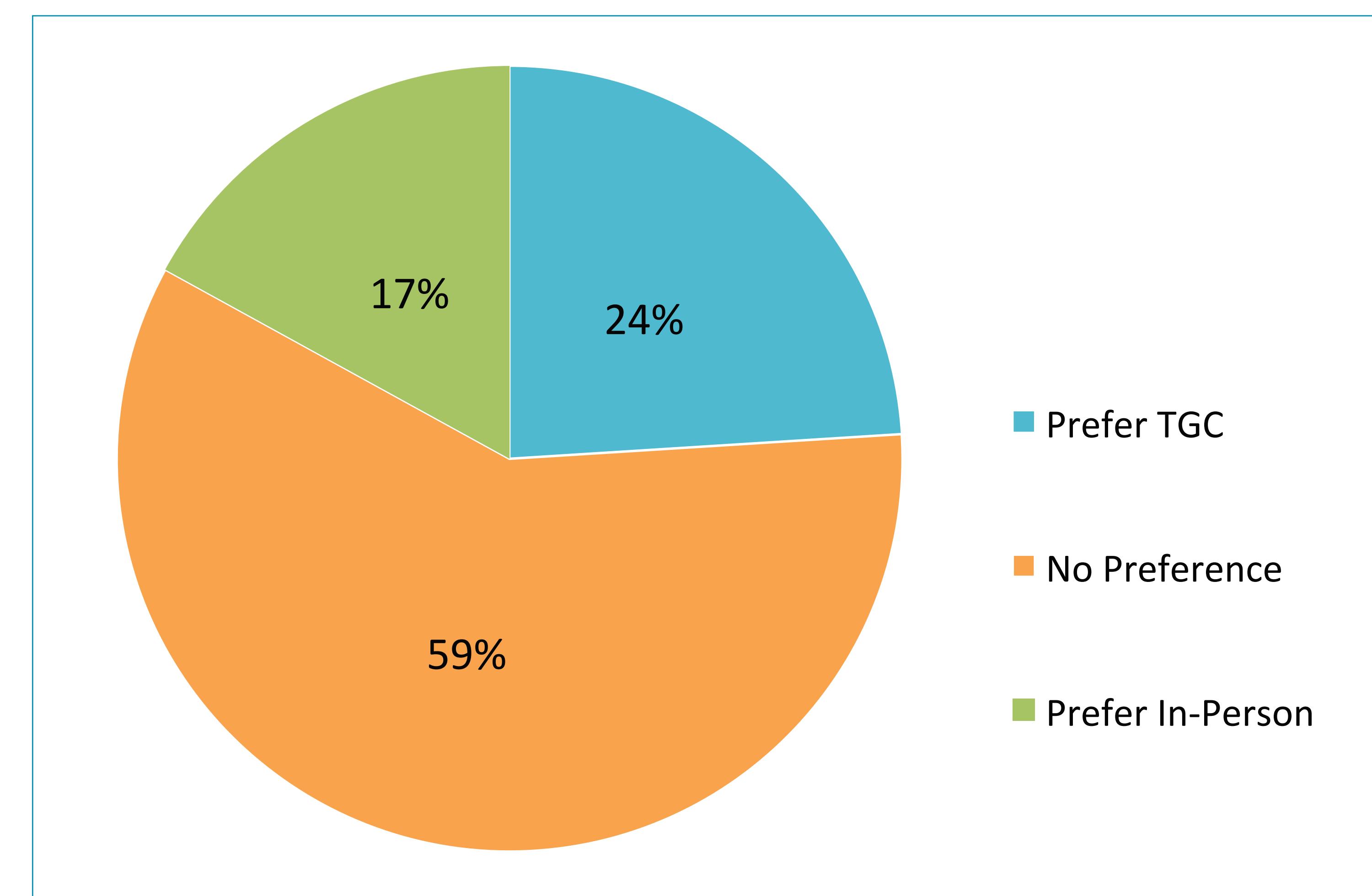
The combination of these two major trends has logically led to more tech-savvy ways of providing genetic counseling expertise to patients and physicians. The demand for genetic counseling services combined with the significant improvements in technology has driven the growth of our telegenetic counseling program. Since the inception in 2005, there has been a steady increase in the overall volume and percentage of patients seen with this modality, with the most significant growth in the past few years. Overall volume of telegenetic counseling patients more than doubled between 2014 and 2017. The percentage of patients seen by telegenetic counseling has increased in that time period from 6.2% to 22.8% with the remaining patients seen by more traditional in-person genetic counseling encounters (Figure 2).

**Figure 2. Telegenetic counseling volume and percentage of total patient volume 2014-2017**



When our telegenetic counseling program was originally launched in 2005, one of the goals of program development was to create a process that was equivalent to the experience of in-person genetic counseling. The video systems used for telegenetic counseling have changed during this time frame due to improvements in televideo equipment but have always been provided with security and encryption sufficient to comply with HIPAA guidelines. One key aspect of the patient experience is both an audio and video interaction between the patient and genetic counselor. The genetic counselor also has the capability to show the patient visual aids to assist in patient understanding. An evaluation of patient satisfaction following telegenetic counseling revealed high satisfaction and comfort with telegenetic counseling. When asked about overall patient satisfaction, on a scale of 1 to 5, the overall satisfaction was 4.6, between good and excellent. Following telegenetic counseling, when asked if they would prefer in-person genetic counseling over telegenetic counseling, the vast majority (>80%) either had no preference or preferred telegenetic counseling (Figure 3).

**Figure 3. Satisfaction data regarding genetic counseling modality preferences**



## III. Conclusion

Our experience providing telegenetic counseling to over 20,000 patients has clearly demonstrated that this technology based interaction provides high levels of satisfaction and allows for the provision of a much needed service to patients who may otherwise not have access to genetic expertise. The continued demand for genetic counseling services will likely spur the ongoing growth and acceptance of telegenetic counseling as an equivalent alternative to traditional in-person genetic counseling.