Software solutions increase efficiency of genetic counseling for hereditary cancer

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Introduction

Analyses of time-use efficiency have determined that clinical genetic counseling services are time-consuming and labor-intensive, with as little as 25%-41% of a genetic counselor’s time spent on direct patient care and up to 3.5 to 7 total hours spent per patient.1,2 Survey results between studies conducted by Bernhardt et al. and McPherson et al. have indicated that there has been little improvement in the time-use efficiency for this field over a 20 year span. Additionally, one study of failed appointment rates (no-shows and cancellations) at genetics clinics found the average failed appointment rate to be 12%.3 Through the integration of software applications that aid in patient scheduling, patient health history collection, pedigree generation, clinical documentation, and a telemedicine-only service delivery model, the clinical genetic counselors at Color Genomics saw a dramatic decrease in time spent conducting non-direct patient care activities. Color Genomics saw an 8-25% time-use efficiency increase compared to industry average in the proportion of time spent on direct patient care without compromising patient satisfaction. Additionally, the failed appointment rate was significantly lower than industry average.

Materials & Methods

Genetic counselors at Color Genomics tracked time spent providing direct patient care (speaking directly with patients by phone) and conducting non-direct patient care activities (reviewing health history, making notes in chart, writing patient letters, etc.) using supportive software when providing over 400 post-test telemedicine genetic counseling sessions for clients who received a 19-gene hereditary breast and ovarian cancer panel (ATM, BARD1, BRCA1, BRCA2, BRIP1, CDH1, CHEK2, EPCAM, MLH1, MSH2, MSH6, NBN, PALB2, PMS2, PTEN, RAD51C, RAD51D, STK11, TP53). Short surveys were conducted after each genetic counseling session to assess perceived comprehension and satisfaction with genetic counseling and the overall testing process. The time-efficiency of using supportive software was calculated and compared to the same activity performed in the traditional way.

Results

The average total time spent per patient was 40 minutes compared to the industry average of 3.5-7 hours. Over 50% of the time spent per patient was towards providing direct patient care. There was a high degree of perceived comprehension and satisfaction with both genetic counseling and the overall testing process among respondents. Failed appointment rates were below industry average at 3.1%.

Discussion

Custom software tools have been implemented to improve the efficiency of genetic counseling including: online health history collection and self-directed pedigree creation, online scheduling and rescheduling, and templatized summary notes. Though many of the tools utilized by the genetic counselors at Color were built in-house by Color’s engineering team, there are comparable tools available from distributors that assist with scheduling, health history and pedigree generation, and note writing. Color Genomics has been able to integrate these time-saving features into a seamless interface which further reduces task-switching. Use of software tools in genetics clinics varies, but there is wide agreement that simply having the personal and family history collected prior to the appointment may save time for the counselors and allow for increased focus on counseling.5 Saving time and reducing the administrative workload placed on genetic counselors may aid in reducing distress which has been positively correlated with burnout and professional dissatisfaction.6 Randomized trials comparing telephone with in-person cancer genetic counseling have shown that telephone counseling achieves equal short-term outcomes as in-person counseling. These trials have shown no difference by group on patients’ knowledge, psychosocial outcomes (e.g., distress, decisional conflict, and cancer worry), satisfaction, or patient-centered communication.7 Color provides all genetic counseling by phone and provides all patients with online access to their results as well as written summaries of their genetic counseling sessions. There is a high level of satisfaction with the Color process as a whole, genetic counseling at Color, and comprehension of the results received. Genetic counselors at Color spent a larger percentage of their time providing direct patient care and spent 40 total minutes on average per patient, which allows for one counselor to see more patients per day or devote time to other activities. Additionally, counseling by phone may help to decrease failed appointment rates as patients do not need to travel or miss work to attend the appointment.

References