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The Impact of Telemedicine on Indirect Patient Costs in an Outpatient Radiation Oncology Department

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Purpose/Objective(s): Patients incur more than medical-related expenses when attending necessary consultation and follow-up visits, including time and travel costs. With the rapid integration of telemedicine in response to the COVID-19 pandemic, our department gained another tool that has the potential to reduce the financial burden of cancer care for our patients. The aim of this study was to estimate the indirect cost savings (time, travel costs, opportunity costs) resulting from the use of telemedicine at a large, academic radiation oncology outpatient clinic located in a densely populated suburban setting. We hypothesize that telemedicine provides time- and cost-savings for patients.

Materials/Methods: All telemedicine and in-person visits scheduled at our main outpatient clinic over a one-week period in June 2021 were retrospectively reviewed. Care visits with patients residing outside of the state were excluded. Travel distance and time calculations were estimated using Google Maps and based on patients' reported home address. Travel cost was calculated using the IRS 2021 standard mileage rate of \$0.56 per mile. Opportunity cost was calculated by multiplying round-trip travel time with estimated hourly wage, derived by median household income per census block group and in the context of a 40-hour work week. Annual projections were calculated by multiplying weekly cost savings by 52.

Results: A total of 156 patients had scheduled visits in our department over one week, 115 of which were via telemedicine. There was no difference in gender, race, ethnicity, and insurance status between telemedicine and in-person visits. Those attending telemedicine vs in-person visits were younger in age (61 vs 68 yrs, $p=0.03$). There was no significant difference between distance or time traveled to the cancer center between telemedicine and in-person cohorts. For telemedicine visits, median per-visit round-trip travel time saved was 66 minutes (IQR, 39-168 minutes) with a travel cost savings of \$33.60 (IQR, \$17.92 - \$100.80), opportunity cost savings of \$67.04 (\$42.97 - \$118.56), and overall cost savings of \$110.57 (IQR, \$59.94 - \$202.04). Annually, telemedicine visits are estimated to save patients a total travel time of 12911.6 hours, travel costs of \$402,684, opportunity costs of \$530,588, and overall cost savings of \$933,272.

Conclusion: Telemedicine benefits patients with time- and cost-savings in an outpatient radiation oncology clinic. Our estimates are likely under-representative of the entire financial impact, as costs related to childcare, parking, tolls, hotels, and meals were not captured in our analysis. These unmeasured costs are likely amplified for those patients who live further from the clinic. Despite this, travel distance was not associated with utilization of telemedicine. In clinically appropriate situations, patient-centered metrics such time- and cost-savings should be considered when informing the choice between telemedicine and in-person visits.

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Physician Perspectives on Telemedicine in Radiation Oncology

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Purpose/Objective(s): Telemedicine enthusiasm and uptake in radiation oncology rapidly increased during the COVID-19 pandemic, but it is unclear if and how telemedicine should be utilized after the COVID-19 public health emergency (PHE) ends. Despite ongoing COVID-19 risks and public payer support for telemedicine, several private payers have stopped reimbursing telemedicine weekly see video visits. We performed a large single-institution assessment of provider perspectives on telemedicine after we had achieved a more mature level of adoption to better understand factors considered when determining to use telemedicine and to estimate the percent of visits that could be safely performed with telemedicine.

Materials/Methods: We distributed a survey to all radiation oncology attendings at our large academic institution in October 2021 to assess satisfaction, facilitators, and barriers to telemedicine implementation. We performed quantitative and qualitative analyses to characterize satisfaction and to identify factors influencing whether telemedicine is employed. For the qualitative analysis, two authors independently coded open-ended survey responses and identified categories and themes following established content analysis methodology. We calculated the average proportion of visits that providers expected could be appropriately performed with telemedicine without a clinically significant decline in the quality of care for each disease site and visit type.

Results: 60 of 82 eligible radiation oncologists (73%) responded to the survey. 78% of respondents were satisfied with telemedicine in the radiation oncology department, and 83% wished to continue offering video visits after the COVID-19 PHE ends. Common reasons providers endorsed for wanting to integrate telemedicine into practice included: patient and provider preference, increased access to care and clinical trials, allowing for greater relationship with the care team, and improved clinical safety, efficiency, and quality. Patient factors influencing whether physicians offer telemedicine included the patient's travel burden, patient preferences, and whether a physical exam is required. About 20% of new consultations and 50% of weekly management visits were estimated to be clinically appropriate for telemedicine. Central Nervous System/Pediatrics and Thoracic faculty considered telemedicine appropriate for the greatest proportion (50%) of new consultations. 93% of respondents felt comfortable determining whether telemedicine was appropriate.

Conclusion: Surveyed radiation oncologists were satisfied with telemedicine in their practice and wished to continue offering video visits in the future. Although provider perceptions of clinical appropriateness of telemedicine varied widely based on disease site and visit type, providers felt comfortable determining when telemedicine would be appropriate for patients. Our data suggest payers should continue to support this patient-centered technology.

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Psychosocial Screening in an Outpatient Community Radiation Oncology Center

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Purpose/Objective(s): Cancer patients frequently suffer from depression and psychosocial impairments due to their disease and treatment. Depression in cancer patients has been reported to decrease quality of life, increase morbidity, lengthen hospital stay, decrease motivation to obtain treatment, and reduce therapy adherence. Psychosocial services have been shown to help patients cope with treatment-related stress. However, there is currently very little data on the best way to identify patients who would benefit from