Chapter 2


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ABSTRACT

Comparative full economic evaluations are needed to evaluate whether telehealth-based systems can bring societal cost savings and economic benefits that exceed economic costs. However, economic evaluations of telehealth-based interventions across different health care fields have focused primarily on cost analysis, rather than on full economic analysis, which captures both the economic costs and economic benefits of two or more competing interventions. The authors provide a framework for Benefit-Cost Analysis that would render this method more applied. In particular, they are interested in the comparative economic evaluation of two categories of Autism Spectrum Disorders intervention programs: telehealth-based and in-person. Their framework can be used to economically evaluate whether telehealth service delivery offers greater societal net benefits—the difference between societal economic benefits and societal economic costs—than in-person delivery, and the threshold volume of telehealth encounters required for the telehealth delivery to reach a zero societal net benefit.

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INTRODUCTION

Economic evaluations of telehealth-based interventions have focused primarily on cost analysis – a partial economic analysis – rather than on economic analysis that captures both the economic costs and economic benefits – a full economic analysis – of two or more competing telehealth and/or in-person interventions. The most popular full economic evaluation methods in order of comprehensiveness include: Cost-Effectiveness Analysis (CEA), Cost Utility Analysis (CUA) and Benefit-Cost Analysis (BCA). Although telehealth intervention programs were initiated several decades ago in many health care fields, rigorous full economic evaluation of these programs remains rare (Da’valos, French, Burdick & Simmons, 2009). Reasons for such dearth include: data intensiveness and technical sophistication; multidimensionality of telehealth interventions; lack of funding for large-scale programs (Bashur, Shanon & Sapci, 2005); and reluctance to assign monetary values to health improvement outcomes (Bashur et al., 2005; Rearden, 2005). In addition, when compared to CEA studies, only a few BCA studies exist in the published empirical literature even for in-person service delivery (Drummond, Sculpher, Torrance, O’Brien & Stoddart, 2005). Our goal in this chapter is to provide a framework for BCA evaluation that would render this method more applied. In particular, we are interested in the comparative economic evaluation of two categories of Autism Spectrum Disorders (ASDs) intervention programs: telehealth-based and in-person. Furthermore, our framework could be adapted to other health care fields.

Pervasive Developmental Disorders are classified in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition, Text Revision (DSM-IV-TR) under five diagnostic categories: autistic disorder, Asperger’s disorder, pervasive developmental disorder—not otherwise specified (PDD NOS), childhood disintegrative disorder (CDD) and Rett syndrome (American Psychiatric Association, 2000). The term ASDs is used to refer to autistic disorder, Asperger’s disorder, and PDD NOS.

While economic evaluations of early and intensive behavioral interventions in ASDs exist (Jacobson, Mulick & Green, 1998; Ganz, 2007; Chasson, Harris & Neely, 2007), we are unaware of any existing full economic evaluation of the use of telehealth service delivery for diagnosis, treatment and management of Autism Spectrum Disorders (ASDs). This may be attributable to the recent introduction of telehealth interventions in ASDs (Terry, 2009). A systematic examination of recent telepractices in ASDs in terms of diagnostic assessments, educational consulting, and guidance and supervision of behavioral interventions concluded that telepractice is a promising service delivery model for individuals on the autism spectrum (Boisvert, Lang, Adrianopoulos & Boscardin, 2010).

The traditional in-person ASD service delivery system has been unable to address the increase in both demand for services and societal costs of caring for people on the autism spectrum. Telehealth service delivery has the potential to address these challenges. The gradual introduction of individual, large scale, and eventually, system interventions will require full evaluation analysis to economically justify such introduction and its possible widespread adaptation as not only a complementary, but also a competing system to the traditional in-person service delivery.

A full comparative economic evaluation analysis of in-person and telehealth delivery systems requires inclusion of all economic benefits and all economic costs of each system and includes a societal perspective comprised of the perspectives of all involved stakeholders. Full economic analysis of individual, large scale and system interventions are needed to evaluate: (1) whether telehealth service delivery offers greater societal net benefits (the difference between societal economic benefits and societal economic costs) than in-person delivery, (2) the threshold volume of