Commentary: Cost-effectiveness—Like it or Luddite

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Central Message

Cost-effectiveness studies are only as reliable as their measures of cost and effectiveness.

See Article page 2230.

Diana Krall, GRAMMY award-winning jazz artist, gave a virtuoso performance at the 99th Annual Meeting of the American Association for Thoracic Surgery. It was impressively orchestrated—rather like the study of Ferket and colleagues¹ in this issue of the *Journal*, in which 23 authors and more than 200 investigators have evaluated the cost-effectiveness of concomitant mitral repair for patients with moderate ischemic mitral regurgitation undergoing coronary bypass surgery. Cost-effectiveness is the jazz of health care research—considered modern for decades, it has a unique language, instruments, and mindset, and it is evangelized by fans who think it sounds great. It also has detractors, who dislike how it sounds but grumble quietly, to avoid being labeled as Luddites. Particularly popular with politicians and thought leaders, it comes with elaborate rules, is technically demanding, and occasionally incomprehensible. Is it for you? Find out with our short quiz.

1. Do you want to know the average incremental cost of greater quality and length of life 10 years after surgery? The goal of this study is to determine whether adding mitral repair to coronary artery bypass surgery in patients with moderate ischemic mitral regurgitation is more “economically attractive” at 10 years than is coronary artery bypass grafting alone.
2. Are the results of the Cardiothoracic Surgical Trials Network mitral trials applicable to your patients? This analysis derives its clinical and cost data from these trials. The exhaustively debated limitations of those trials are the limitations of this study.
3. Are you confident that computer programmers can accurately simulate 10-year outcomes from 2-year follow-up? These two Cardiothoracic Surgical Trials Network trials only report 2-year data, so Ferket and colleagues¹ use computer simulation combined with results from the Cardiothoracic Surgical Trials Network severe mitral regurgitation trial to project 10-year events and costs.

4. Could you trust reliability of cost data when fewer than 172 of 301 participants had complete hospital billing data, which varied widely? For the remaining 129 cases (43%), Ferket and colleagues¹ imputed cost, because they did not have this data.
5. Can we accurately quantify the value that we place on health and years of life expectancy? In this study (and most cost-effectiveness research), quality-adjusted life-years are the units used to evaluate treatment efficacy. These are calculated from the answers provided by historical cohorts to questions such as: “Imagine your life expectancy is 20 years. How much of your remaining life would you give up to eliminate severe angina so that you have perfect health?” Alternatively, participants are asked to rank symptoms on rating scales, where the extremes represent death and perfect health. The study methodology assumes that these ratings remain stable across diverse patient populations, with no allowances made for changing priorities in the face of chronic illness or imminent death.

A cost-effectiveness analysis is only as reliable as its measures of cost and effectiveness.² The investigators¹ deserve recognition for trying to develop reliable measures, even if the study limitations highlight major knowledge gaps and the primacy of individualized decision making. Irrespective, if you answered yes to these 5 questions, congratulations—you are a thought leader, you may be a jazz aficionado, and this opus will entertain you for hours.

References

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