

BACKGROUND

- Approximately 63 million American adults—about 1 in 4 U.S adults— served as caregivers in 2025¹
- Caregiving intensity has grown significantly, with caregivers dedicating an average of 27 hours per week and 30% providing care for five or more years. Two-thirds assist with at least one activity of daily living¹
- Half of working caregivers experience employment disruptions, and 1 in 4 reports feelings of isolation¹
- The United States confronts an unprecedented caregiving crisis driven by aging demographics, shifting family structures, and evolving workplace dynamics²

OBJECTIVE

- **This study aims to create a comprehensive framework to estimate caregiver impact for use in economic modeling, addressing the lack of standardized evaluation methods and identifying relevant data sources**
- **A hypothetical case study is developed to illustrate the framework's practical application in estimating caregiver impact across selected domains**

METHODS

- A targeted literature review was conducted to assess caregiving impact on caregivers' lives, relevant data sources, policies/guidelines, and modeling approaches. This targeted review analyzed 52 publications across multiple disease areas
- Findings from targeted literature review informed the development of a modeling framework that identifies key quantitative and qualitative areas for estimating the impact on caregivers for a specific disease and treatment
- To illustrate the framework's practical application, hypothetical caregiving profiles were developed for a disease with three severity levels (low, medium, high). Three treatment scenarios were created, each maintaining patients at different levels of disease severity over one year

Table 1. Treatment scenarios and patient distribution by disease severity over a year

Treatment	Efficacy	Patients Distribution by Disease Severity		
		Low Severity	Medium Severity	High Severity
Tx A	High	60%	30%	10%
Tx B	Medium	40%	35%	25%
SOC	Low	10%	20%	70%

- Caregiver impacts were estimated per patient over one year. For each treatment scenario, impacts were calculated as a weighted average based on the hypothetical disease severity distribution. Four domains were selected from recommended area and from quantifiable with proxy data

Table 2. Hypothetical caregiving needs across domains and disease severity

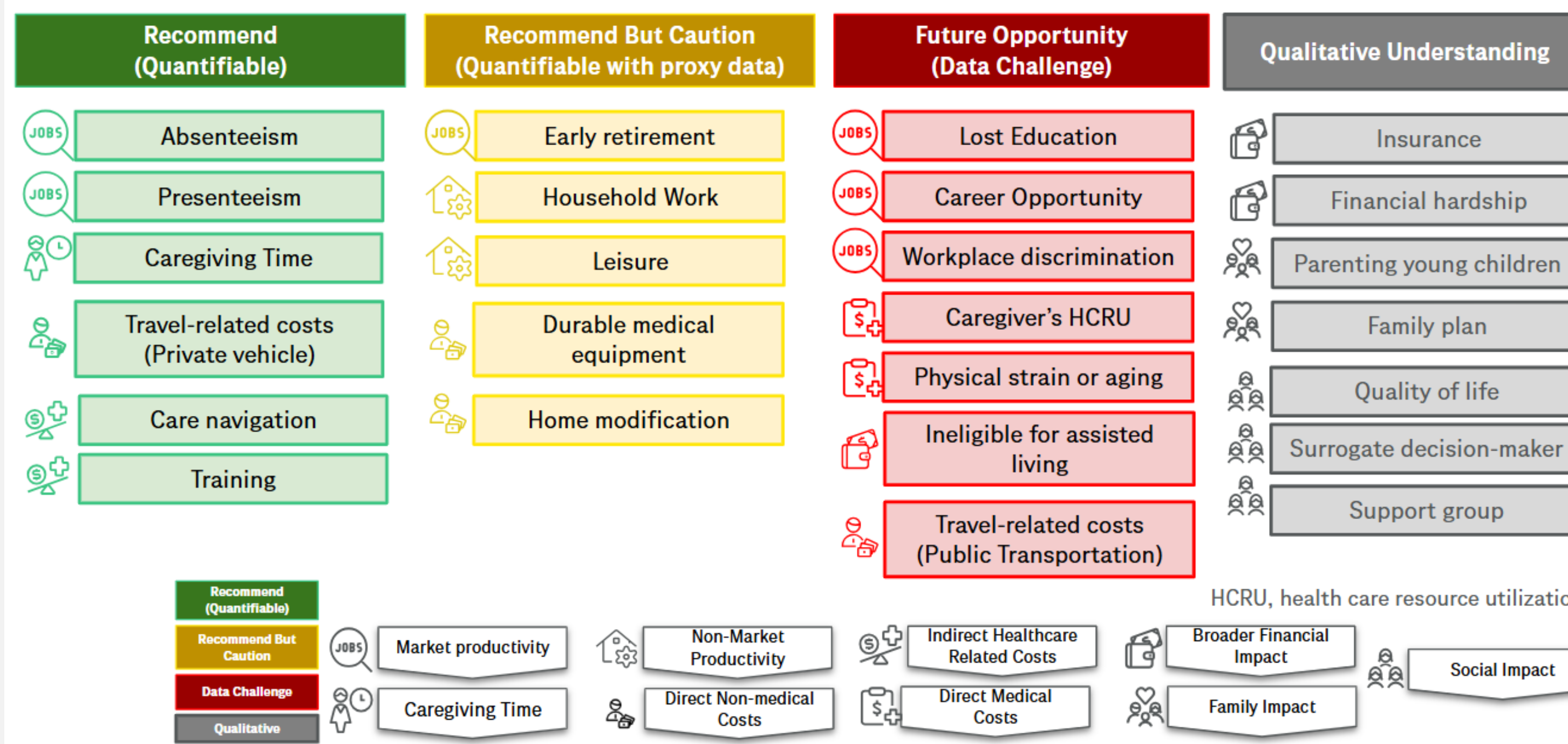
Hypothetical Inputs	Low Severity	Medium Severity	High Severity
Absenteeism: work-hours missed per month	5	9	20
Hours spent on caregiving per week	1	3	8
Increased household work hours per week	0.5	3	6
Reduced leisure hours per month	2	5	10

- Estimated caregiver hours were then monetized using an opportunity cost approach to estimate the economic value of caregiving time and illustrate the magnitude of impact
- We used average wage per hour, fringe benefit, average weekly work hours and employment rate from US Bureau of Labor Statistics³

RESULTS

Figure 1. Caregiver Impact Domains

This framework organizes caregiver impact domains to provide a structured and systematic comparison of caregiver impact across diseases, severity levels, and treatment options



Summary of targeted literature review on caregiver impact

- **Caregiving affects diverse domains of caregivers' lives across both qualitative and quantitative areas⁴**
 - **Time Reallocation:** Absenteeism, presenteeism, caregiving time, increased household work, leisure lost
 - **Health and Emotional:** Stress, depression, physical decline
 - **Financial:** Out-of-pocket costs, insurance insecurity, medical equipment
 - **Family and Social:** Family planning, parenting challenges, isolation
- Existing data sources for assessing caregiver impact include national surveys (Behavioral Risk Factor Surveillance System), national studies (Health and Retirement Study, National Health and Aging Trends Study, National Study of Caregiving), and commercial claims databases (MarketScan⁵, OptumHealth⁶)
- Growing attention is being paid to caregivers. CMS adopted a CPT code for caregiver training⁷, and ICER recommends including caregiver impact in value assessments⁸
- Existing methods for quantifying caregiver impact include cost-of-illness analyses, regression-based outcomes, and economic modeling

LIMITATION



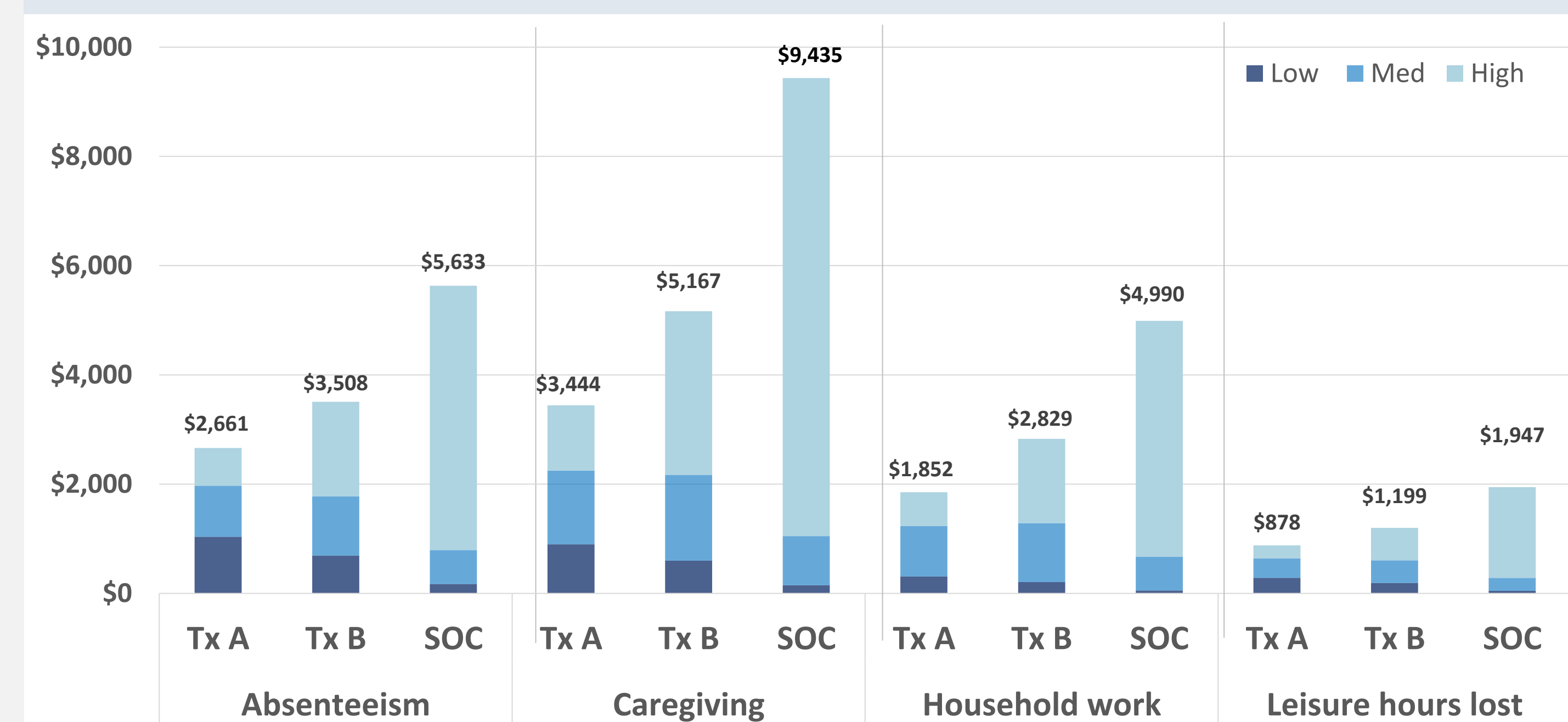
This case study uses hypothetical inputs and assumptions to illustrate the framework's application. Real-world data are needed to accurately quantify caregiver impact across diseases and severity levels

RESULTS CONTINUED

Table 3. Estimated hours over a year across caregiver impact domains

Domain	Treatment	Low Severity	Medium Severity	High Severity	Total
		Absent work hours			
	Tx A	36	32	24	92
	Tx B	24	38	60	122
	SOC	6	22	168	196
Caregiving hours					
	Tx A	31	47	42	120
	Tx B	21	55	104	179
	SOC	5	31	291	328
Household work hours					
	Tx A	16	47	31	94
	Tx B	10	55	78	143
	SOC	3	31	218	252
Leisure hours lost					
	Tx A	14	18	12	44
	Tx B	10	21	30	61
	SOC	2	12	84	98

Figure 3. Caregiver impact costs per patient over a year across treatment scenarios



- **Caregiving hours represented the largest economic impact**, followed by absenteeism and increased household work
- Lost leisure hours contributed the smallest economic impact, as the relative hours lost were modest compared to other domains
- **Total caregiver impact increased with disease severity, with the greatest economic impact observed at the highest severity level**
- Treatments that maintained patients at lower disease severity reduced total caregiver impact by more than half compared to standard of care (e.g. Tx A vs SOC)
- **Treatments that slow disease progression reduce overall caregiver burden**, as high severity level accounted for the largest share of caregiver impact

CONCLUSION

- Despite the significant and increasing burden of caregiving on families and society, current evidence shows considerable shortcomings in how caregiver impact is assessed
- To address this, health economics and outcomes research needs to evolve by systematically integrating caregiving impacts
- Data collection to inform caregiving assessment needs to improve, and standardized measurement approaches should be implemented

References

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Disclosures

S. Kowal and F. El Moustaid are employees of Genentech, Inc., and shareholders of F. Hoffmann-La Roche Ltd

Abbreviations

CDC, Centers for Disease Control and Prevention; CMS, Centers for Medicare & Medicaid Services; CPT, Current Procedural Terminology; ICER, The Institute for Clinical and Economic Review; SOC, Standard of care