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Lung: Research

Risk of Financial Toxicity Among Adults Undergoing Lung and Esophageal Resections for Cancer

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ABSTRACT

BACKGROUND Although financial toxicity, defined as the harmful financial burden experienced by patients undergoing cancer treatment, has been of growing interest, data in thoracic oncology are lacking. This study aimed to examine the risk of financial toxicity among patients undergoing surgical resection of thoracic malignant diseases.

METHODS Adults undergoing lobectomy, pneumonectomy, or esophagectomy for cancer were identified in the 2012 to 2021 National Inpatient Sample. Risk of financial toxicity was defined as health expenditure (total hospitalization costs for the uninsured and maximum out-of-pocket costs for the insured) exceeding 40% of postsubsistence income. Multivariable logistic regressions were used to identify factors associated with financial toxicity risk.

RESULTS Of 384,340 patients, 69.5% had government-funded insurance, 27.2% had private insurance, and 1.0% were uninsured. Compared with patients with insurance, uninsured patients were more commonly Black and Hispanic and less commonly electively admitted. Mortality, complications, length of stay, and costs were comparable regardless of insurance status. Approximately 68.9% of uninsured and 17.3% of insured patients were at risk of financial toxicity, and the incidence of financial toxicity remained stable over time. After risk adjustment, complications were associated with a greater than 2-fold increased risk of financial toxicity among uninsured patients (adjusted odds ratio, 2.21; 95% CI, 1.38-3.55). Among the insured patients, Black, Hispanic, and publicly insured patients demonstrated a greater risk of financial toxicity, while patients undergoing minimally invasive operations and receiving care at metropolitan hospitals exhibited a lower risk of financial toxicity.

CONCLUSIONS Concordant with previous work examining financial toxicity in abdominal oncologic surgery, thoracic surgery demonstrates a comparable burden of financial toxicity. Referral policies and care subsidization may be considered in patients at risk for financial toxicity who are undergoing resections for thoracic malignant diseases.

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Financial toxicity *is defined as the harmful financial burden experienced by patients undergoing cancer treatment.*

Thoracic malignant diseases, including lung and esophageal cancers, are increasingly encountered in clinical practice. According

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to the National Cancer Institute, an estimated $174 billion in annual health care expenditures are attributable to cancer care, with nearly $24 billion spent on lung cancer in the United States.[1,2] Although esophageal cancer accounts for only 1% of new cancer cases in the United States, it is among the most costly cancers to treat.[3] Such high health care costs translate to excessive out-of-pocket payments for patients undergoing cancer treatment, who are 2.5 times more likely to file for bankruptcy.[4] The term *financial toxicity* has been developed to describe the harmful financial burden experienced by patients undergoing cancer treatment.[5] A growing body of literature has linked financial toxicity with adverse patient outcomes, including higher mortality, poor treatment adherence, and reduced quality of life.[6-9]

Data on financial toxicity among thoracic oncologic patients are sparse, and previous studies are dated or limited in scope.[6,10,11] A recent study of 232 survivors of lung cancer reported that unmet social needs were associated with lower quality of life and higher financial toxicity, a finding highlighting the long-term impact of financial hardship on quality of survivorship.[12] Notably, a majority of cancer treatments can involve surgical procedures that have been shown to induce additional risk of catastrophic health expenditures and financial distress.[13] In a single-center study of 1477 patients who underwent resection for lung cancer, more than 40% of individuals experienced financial toxicity and were more likely to report detrimental coping mechanisms, such as decreased spending on food or clothing and increased loans.[14] Investigating financial toxicity in thoracic oncologic surgery at the national level is crucial to developing financially protective policies that may help improve the cost-effectiveness of cancer care.

The present study characterized the risk of financial toxicity among patients undergoing resections for thoracic malignant diseases across the United States. Additionally, we examined temporal trends over a 10-year period and risk factors associated with financial toxicity by insurance status. We hypothesized that patients with thoracic cancer who undergo surgery would be at significant risk of financial toxicity, particularly patients who are uninsured.

PATIENTS AND METHODS

DATA SOURCE AND STUDY POPULATION. This was a retrospective cohort study using the 2012 to 2021 National Inpatient Sample (NIS). Maintained by the Healthcare Cost and Utilization Project (HCUP), the NIS is the largest publicly available all-payer inpatient database in the United States and provides accurate estimates for nearly 97% of all US hospitalizations by using robust survey weighting methodology.[15] Given the deidentified nature of the NIS, the present study was deemed exempt from full review by the Institutional Review Board at the University of California, Los Angeles.

All adult patients undergoing pulmonary lobectomy, pneumonectomy, or esophagectomy with a diagnosis of lung or esophageal cancer were identified using relevant International Classification of Diseases, 9th and 10th Revision (ICD-9/10) codes (Supplemental Table 1). Patients with mesothelioma or missing key variables such as age, sex, hospitalization charges, insurance payer, and in-hospital mortality were excluded (1.3%). Insurance status was defined in accordance with the HCUP data dictionary, where patients with self-pay comprised the uninsured cohort, whereas patients with insurance coverage, including private, government-provided Medicare or Medicaid, or other unspecified primary payer, were classified as insured (Figure 1).[15] Hospital charges were converted to costs by applying hospital-specific cost-to-charge ratios and adjusted for inflation using the 2021 Medical Expenditure Survey Personal Health Care Cost Index.[16]

PATIENT CHARACTERISTICS AND OUTCOMES. Additional patient and hospital characteristics, including age, sex, income quartile, race, elective admission, transfer status, and hospital region and teaching status, were defined using the HCUP data dictionary.[15] The Elixhauser Comorbidity Index, a validated composite of 30 comorbidities, was used to quantify the overall burden of chronic conditions.[17] Individual comorbidities and a history of chemoradiation therapy were identified using the appropriate ICD-9/10 diagnosis codes (Supplemental Table 1). Minimally invasive operations, including laparoscopic and robotic-assisted, were ascertained using ICD-9/10 procedure codes. Perioperative complications, including respiratory (respiratory failure, pneumonia, pneumothorax), infectious (sepsis, wound infection), thromboembolic (deep vein thrombosis, pulmonary embolism), cardiac (cardiac arrest, tamponade), renal (acute kidney injury), cerebrovascular (stroke), and hemorrhagic, were also identified using ICD-9/10 diagnosis codes (Supplemental Table 1).

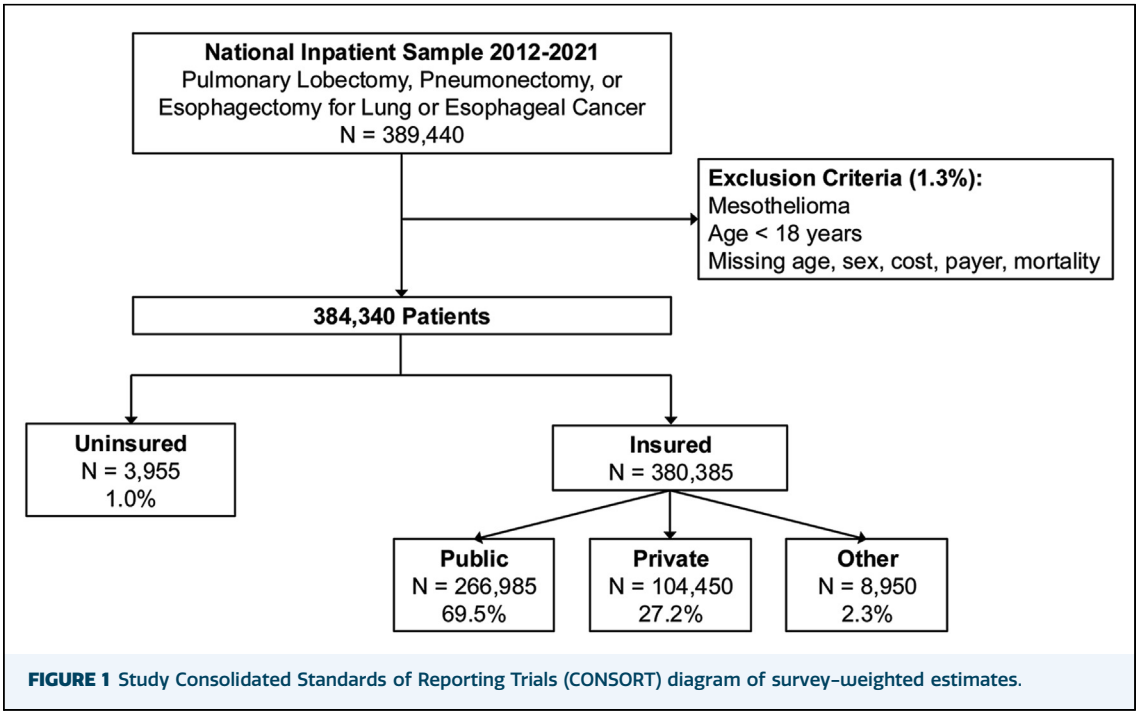

FIGURE 1 Study Consolidated Standards of Reporting Trials (CONSORT) diagram of survey-weighted estimates.

ESTIMATION OF INCOME, MAXIMUM OUT-OF-POCKET EXPENDITURE, AND RISK OF FINANCIAL TOXICITY. In lieu of individual patient income, the NIS reports income quartiles that are based on residence Zip Codes.[15] We used previously reported methodology to estimate patient income by constructing gamma distributions representative of all potential incomes for each quartile; these gamma distributions have been shown to reasonably approximate the true distribution within the population.[18,19] The shape parameter was calculated as 1.568 on the basis of a US Gini index of 0.415.[20] The scale parameters were determined using the annual mean of NIS-defined income quartiles 1 to 3, whereas the 80th percentile was calculated for the highest income quartile, as previously described.[18] The shape and scale parameters for each income quartile are provided in Supplemental Table 2.

To calculate postsubsistence spending, we used publicly available government data on food expenditures provided by the Centers for Medicare & Medicaid Services.[21] Mean maximum out-of-pocket expenditure was calculated using payments for in-network essential health benefits for all individual health plans in the year 2021. Risk of financial toxicity was defined as hospitalization costs (for uninsured) or maximum out-of-pocket costs (for insured) greater than 40% of postsubsistence income.[22]

$$Postsubsistence\ Income = Estimated\ Income - Food\ Expenses$$

$$\frac{Uninsured\ Hospitalization\ Cost}{Postsubsistence\ Income} > 0.4 \quad or \quad \frac{Insured\ Mean\ Maximum\ Out\text{-}of\text{-}Pocket\ Payment}{Postsubsistence\ Income} > 0.4$$

STUDY OBJECTIVES AND STATISTICAL ANALYSES. The primary outcome of interest was risk of financial toxicity, whereas in-hospital mortality, perioperative complications, length of stay (LOS), and hospitalization costs were secondarily assessed. Categorical and continuous variables were reported as group proportions (%) and medians with interquartile range [IQR] and were compared using the Pearson χ^2 and

TABLE 1 Comparison of Baseline Patient, Operative, and Hospital Characteristics by Insurance Status

Characteristic	Uninsured (n = 3955)	Insured (n = 380,385)	*P* Value
Age, y	59 [53–63]	68 [62–74]	<.001
Female sex	47.0	51.4	.02
Income quartile			<.001
Fourth (highest)	17.5	24.5	
Third	18.9	25.3	
Second	29.1	26.2	
First (lowest)	34.5	24.0	
Race			<.001
White	66.8	82.3	
Black	13.8	8.0	
Hispanic	9.8	4.0	
Asian	4.9	3.2	
Other	4.7	2.5	
Comorbidities			
Elixhauser Comorbidity Index	3 [2–4]	4 [3–5]	<.001
Diabetes	16.2	19.7	.01
Hypertension	49.1	61.0	<.001
Obesity	8.7	10.9	.05
Congestive heart failure	3.8	5.8	.02
Coronary artery disease	14.4	20.4	<.001
Chronic pulmonary disease	46.6	46.3	.85
Liver disease	2.7	2.7	.99
Chronic kidney disease	2.8	7.2	<.001
Malnutrition	8.8	5.8	<.001
Smoking	54.1	57.5	.06
Chemoradiation history	6.3	6.9	.50
Elective admission	86.3	94.7	<.001
Transfer from outside facility	1.4	0.5	.002
Type of resection			<.001
Lobectomy	86.8	87.8	
Pneumonectomy	5.7	3.1	
Esophagectomy	7.5	9.1	
Minimally invasive approach	43.2	45.7	.18
Hospital region			<.001
Northeast	12.1	23.8	
Midwest	19.1	23.1	
South	58.2	37.8	
West	10.6	15.4	
Hospital teaching status			.07
Rural	4.2	3.0	
Metropolitan non-teaching	13.1	15.2	
Metropolitan teaching	82.7	81.8	

Values are median [interquartile range], %, or *P*.

Mann-Whitney *U* tests, respectively. Multivariable logistic regression models were developed to determine patient, operative, and hospital factors associated with risk of financial toxicity, stratified by insurance status. Variable selection was performed by applying the least absolute shrinkage and selection operator (LASSO) to reduce collinearity while decreasing overfitting.[23] Regression outcomes are reported as adjusted odds ratios (AOR) with 95% CIs. Statistical significance was set at $\alpha = 0.05$. All statistical analyses were performed using Stata software version 16.1 (StataCorp).

RESULTS

DEMOGRAPHIC COMPARISON. Of an estimated 384,340 patients undergoing pulmonary or esophageal resections for cancer, 266,985 (69.5%) had government-funded insurance, 104,450 (27.2%) had private insurance, and 3955 (1.0%) were uninsured. Compared with the insured cohort, uninsured patients were younger (59 years vs 68 years; $P < .001$) and had a lower burden of comorbidities (3 vs 4; $P < .001$) (Table 1). Uninsured patients were more commonly in the lowest income quartile (34.5% vs 24.0%; $P < .001$) and of Black and Hispanic race (Black: 13.8% vs 8.0%; Hispanic: 9.8% vs 4.0%; $P < .001$) (Table 1). In addition, uninsured patients demonstrated lower rates of elective admission and higher rates of interhospital transfer (Table 1). History of chemoradiation and rates of minimally invasive operations were similar between the cohorts. More than 80% of all cases were performed at metropolitan teaching hospitals. Across both groups, lobectomy was the most frequently performed operation, followed by esophagectomy and pneumonectomy (Table 1).

OUTCOMES ANALYSIS. Unadjusted clinical and financial outcomes are shown in Table 2. The uninsured and insured cohorts experienced similar rates of mortality (1.8% vs 1.5%; $P = .64$) and perioperative complications (27.9% vs 26.9%; $P = .51$). Furthermore, both groups demonstrated similar LOS (5.9 days vs 5.3 days; $P < .001$) and hospitalization costs ($24,500 vs $24,300; $P = .19$). Esophagectomy operations accrued the highest costs ($47,400 [IQR, $34,400-$69,300]), followed by pneumonectomy ($26,100 [IQR, $19,300-$38,800]) and lobectomy ($24,100 [IQR, $18,200-$32,800]; $P < .001$) (Figure 2). Hospitalization costs remained stable over the study period regardless of payer status.

ESTIMATED INCOME AND MAXIMUM OUT-OF-POCKET EXPENDITURE. Figure 3 depicts the gamma distributions for estimation of patient income by quartile. Among uninsured patients, the estimated median income was $45,300 [IQR, $22,800-$80,600], whereas the median income among insured patients was $50,700 [IQR,

$25,800-$91,200]. According to the Bureau of Labor and Statistics, food expenses ranged from $4075 for patients earning less than $5000 annually to $12,163 for individuals making more than $150,000 annually. The mean maximum out-of-pocket expenditure was $5425, with a range of $0 to $8550. Under the Affordable Care Act, the maximum out-of-pocket limit was $7000 for a US health plan covering a single individual in 2021.[24]

RISK OF FINANCIAL TOXICITY. The risk of financial toxicity was significantly higher among uninsured patients relative to insured (68.9% vs 17.3%; $P < .001$). Although insured patients demonstrated a similar risk of financial toxicity regardless of procedure type, 93.9% of uninsured patients who underwent esophagectomy were at risk of financial toxicity compared with 75.7% of uninsured patients undergoing pneumonectomy and 67.4% of uninsured patients undergoing lobectomy. Over the 10-year study period, the estimated risk of financial toxicity remained stable across both groups, with the uninsured cohort persistently at greater risk of financial toxicity compared with the insured cohort (Figure 4).

Within the uninsured cohort, the lowest income quartile was associated with a 4.4-fold increase in odds of financial toxicity risk (AOR, 4.42; 95% CI, 2.37-8.25) (Figure 4A, Supplemental Table 3). In addition, uninsured patients with elective admission had significantly lower odds of financial toxicity risk (AOR, 0.47; 95% CI, 0.24-0.93) compared with patients with nonelective admission. Undergoing esophagectomy (AOR, 6.89; 95% CI, 1.87-25.4; reference: lobectomy) and the incidence of any perioperative complication (AOR, 2.21; 95% CI, 1.38-3.55) were associated with significantly increased odds of financial toxicity risk (Figure 5A).

Among the insured cohort, public insurance (Medicare: AOR, 1.10; 95% CI, 1.04-1.17; Medicaid: AOR, 1.33; 95% CI, 1.21-1.46; reference: private) as well as Black (AOR, 1.22; 95% CI, 1.12-1.32) and Hispanic (AOR, 1.22; 95% CI, 1.09-1.37; reference: White) race were associated with greater odds of financial toxicity risk (Figure 5B) (Supplemental Table 4). Furthermore, patients who underwent minimally invasive operations (AOR, 0.92; 95% CI, 0.88-0.97) and received care at a metropolitan hospital (nonteaching: AOR, 0.74; 95% CI, 0.65-0.85; teaching: AOR, 0.75; 95% CI, 0.66-0.85; reference: rural) were at significantly lower risk of financial toxicity (Figure 4B). Of note, transfer status was not significantly associated with risk of financial toxicity across both cohorts.

TABLE 2 Unadjusted Clinical and Financial Outcomes Stratified by Insurance Status[a]

Outcome	Uninsured (n = 3955)	Insured (n = 380,385)	*P* Value
Mortality	1.8	1.5	.64
Complications			
Respiratory	23.9	21.8	.15
Infectious	2.3	2.2	.84
Thromboembolic	1.3	0.7	.05
Cardiac	0.5	0.6	.74
Renal	4.4	5.9	.07
Cerebrovascular	0.4	0.4	.92
Hemorrhagic	1.9	1.9	.96
Any complication	27.9	26.9	.51
Length of stay, d	5.9 [4.2–8.9]	5.3 [3.8–8.0]	<.001
Cost, $1000s	24.5 [18.2–36.4]	24.3 [17.9–34.3]	.19

Values are %, median [interquartile range], or *P*. [a]Any complication is a composite of respiratory, infectious, thromboembolic, cardiac, renal, cerebrovascular, and hemorrhagic complications.

COMMENT

With medical expenses increasingly associated with bankruptcy, we aimed to model the potential magnitude of financial toxicity in a nationally representative cohort of patients undergoing thoracic oncologic operations. Rates of mortality, complications, LOS, and costs were similar between uninsured and insured patients. Patients who underwent esophagectomy accrued the highest hospitalization costs regardless of insurance status. Of note, approximately 70% of uninsured and 17% of insured patients were at risk of financial toxicity, and this disparity in financial toxicity persisted over the 10-year study period. Within the uninsured cohort, the risk of financial toxicity was associated with the lowest income quartile, nonelective admission, esophagectomy operations, and the incidence of any complication. Among the insured cohort, public insurance and Black and Hispanic race were associated with increased risk of financial toxicity, whereas a minimally invasive approach and treatment at metropolitan hospitals were associated with decreased risk of financial toxicity. Several of these findings warrant further discussion.

Financial burden has increasingly been recognized as an important metric in the quality of cancer care, which often accumulates greater out-of-pocket expenditures than care for other chronic diseases.[4,5,7,24-27] Particularly among uninsured

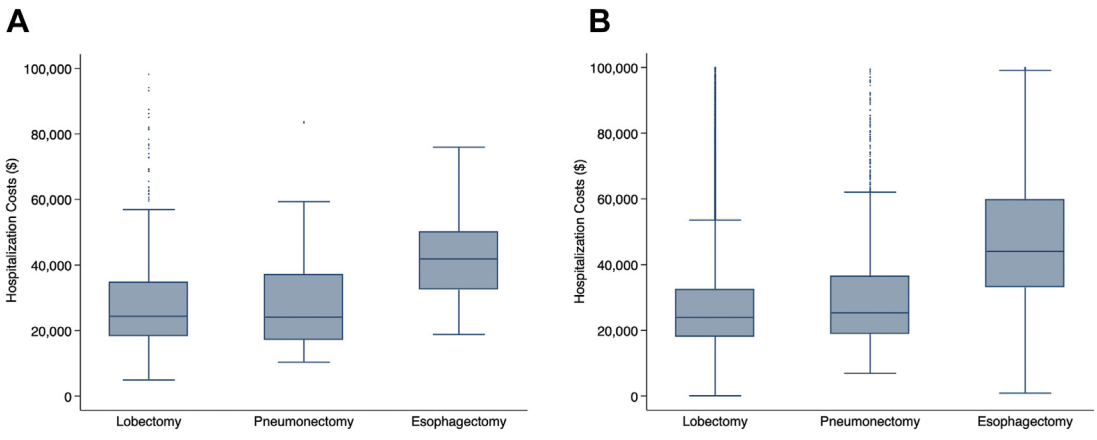

FIGURE 2 Median hospitalization costs by type of resection among (A) uninsured and (B) insured patients. Patients are not pictured (A: 2.0%; B: 2.1%) if cost was greater than $100,000.

patients, the median hospitalization costs of $24,500 comprised more than one-half of the cohort's estimated annual income of $45,300, thus exemplifying the significant burden of financial toxicity experienced by nearly 70% of uninsured patients. Similar to previous national analyses gastrointestinal and gynecologic oncologic patients, uninsured patients with thoracic cancer patients were at significantly greater risk of financial toxicity compared with insured patients, a finding underscoring the importance of health coverage in cost mitigation.[18,22] However, we found that 17% of insured patients were still at risk for financial toxicity, likely because of high deductibles and cost sharing that led to underinsurance of patients with cancer.[27] In a 2019 national consumer finances survey, 32% of single-person privately insured households did not have more than $2000 saved in assets, which would be insufficient to meet the calculated mean maximum out-of-pocket cost of $5425.[28] Despite improvements in quality and access to health care through more standardized enhanced recovery pathways, having insurance does not

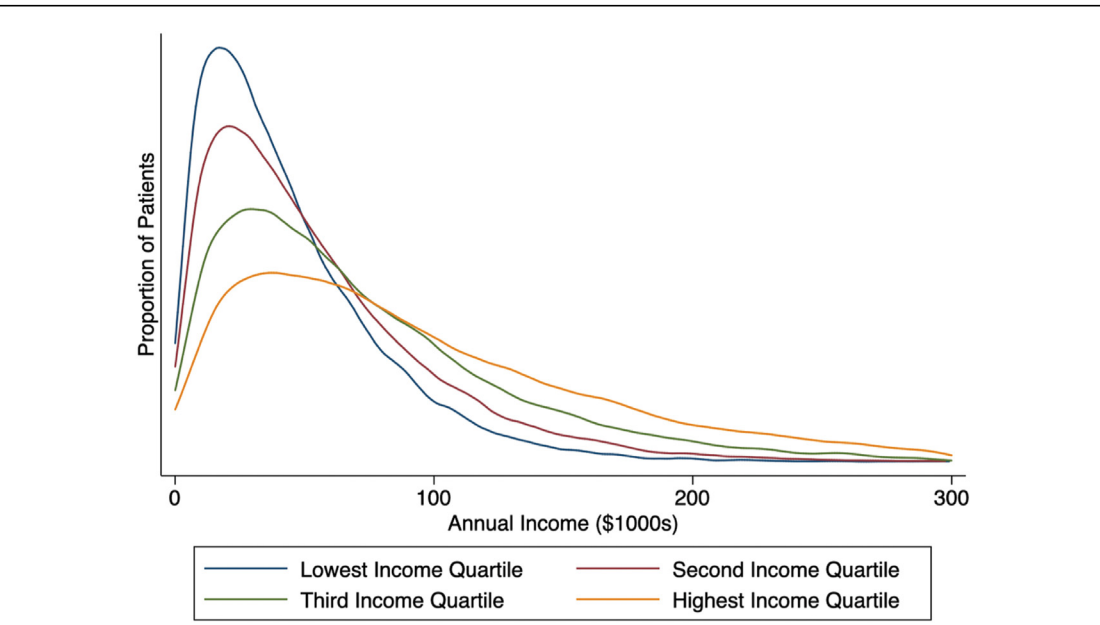

FIGURE 3 Gamma distributions for estimated patient income by quartile.

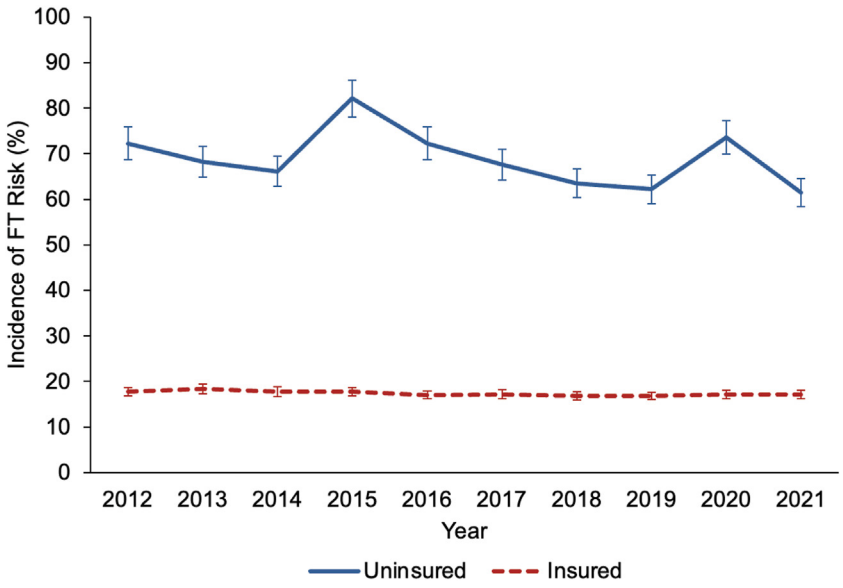

FIGURE 4 Temporal trends in the incidence of risk of financial toxicity (FT) stratified by insurance status.

make patients with thoracic cancer immune from the risk of financial toxicity, and the present study demonstrated no significant change in incident risk of financial toxicity regardless of insurance status over the past decade.[29] Further efforts to modify health care legislation and mitigate the risk of financial toxicity are needed to optimize the value of cancer care.

Risk factors associated with financial toxicity differed on the basis of insurance status. Among uninsured patients, elective admission was a protective factor, whereas the incidence of complications increased the risk of financial toxicity. Uninsured patients were more commonly of low income and minority race, and these social vulnerability factors have been linked with inadequate preoperative care and delayed diagnoses, which increase likelihood of experiencing complications.[30,31] Emergency operations and adverse postoperative events often require more intensive care and prolonged LOS, ultimately accruing greater costs.[32,33] Interestingly, although centralization of

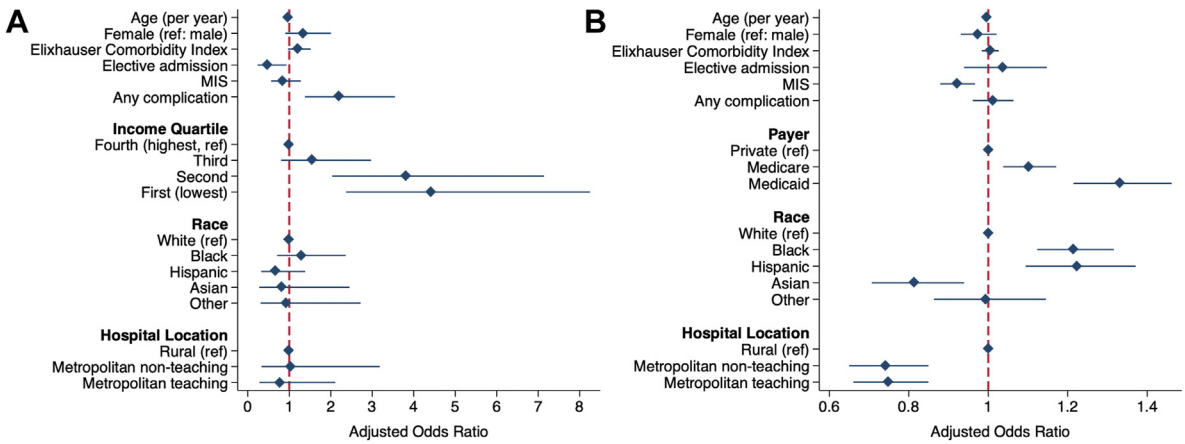

FIGURE 5 Factors associated with risk of financial toxicity among (A) uninsured and (B) insured patients. Any complication is a composite of respiratory, infectious, thromboembolic, cardiac, renal, cerebrovascular, and hemorrhagic complications. (MIS, minimally invasive surgery; ref, reference.)

surgical care has been proposed as a method of decreasing variation in value of care, the present analysis did not demonstrate a statistically significant association between the risk of financial toxicity and hospital location or transfer status.[34] We found that uninsured patients were more commonly treated in rural areas; thus, transferring to centers of excellence may require long travel time and could further exacerbate the financial burden on this population. Rather, our findings suggest that increasing access to high-quality preoperative evaluation may be most crucial to alleviating health care expenditure for uninsured patients with thoracic cancer. Although lung cancer screening guidelines are well established, the uninsured often lack access to screening services, and interventions such as free clinics serve as a vital resource for those without routine primary care.[35] Systemic strategies to optimize surgical care coordination and minimize barriers in access to preoperative care would be largely beneficial for this vulnerable population.

Consistent with previous literature, the presence of private or government-funded insurance coverage did not eliminate the risk of financial toxicity in thoracic oncologic resections.[36] Among insured patients, Medicare and Medicaid were associated with a significantly increased risk of financial toxicity compared with private insurance. Although premiums for public policies may be lower than private, our findings suggest that further cost containment strategies are still warranted to help lower-income patients cope with excessive costs.[37] For example, chemotherapy drug prices are often set high by the manufacturers, and recent federal agreements to expand price negotiations for Medicare and Medicaid have the potential to lower health care costs significantly among the publicly insured.[38] Furthermore, the increased risk of financial toxicity among Black and Hispanic patients may be evidence of systemic racism, historically built distrust, and limited access to thoracic cancer care despite having insurance, as previously suggested.[39] Early screening for financial hardship in addition to clinical screening is critical, and funding should be allocated toward comprehensive financial navigation services, particularly at safety-net hospitals in lower-income communities. Trained financial navigators can significantly help patients with understanding bills and out-of-pocket expenses and applying for cancer foundation or in-house financial assistance programs.[35,36] In contrast with the uninsured cohort, regionalization of care to thoracic centers of excellence may play a more important role among insured patients because metropolitan hospitals and minimally invasive technology were associated with a decreased risk of financial toxicity. In an effort to maintain access to high-quality surgical care, exploration of care subsidization, as discussed for the management of patients undergoing dialysis and diabetic patients, may aid in mitigating adverse financial impacts and allowing patients to receive necessary surgical oncologic care.[40]

Interpretation of the present analysis requires acknowledgment of several limitations inherent in the retrospective, administrative design of the database. Given that individual patient incomes are not provided by the NIS, we performed income modeling using previously validated techniques.[18,24] Furthermore, the risk of financial toxicity was assessed on the basis of a single surgical episode of care and does not account for insurance premiums and out-of-network costs of surgical oncologic care. Given the inability to account for outpatient treatment, medication charges, postdischarge services, and readmission episodes, the financial burden may be underestimated. Postsubsistence income was defined on the basis of food and did not include housing expenditures, which may be higher in urban areas and may influence risk of financial toxicity at metropolitan hospitals. In addition, the NIS lacks clinical granularity regarding information such as the stage of disease and anatomic complexity and duration of each procedure, which may have helped stratify the burden of costs. Long-term outcomes and the biopsychosocial components of financial toxicity were also unable to be assessed, and future work examining how financial toxicity influences quality of life and survival rates in patients with thoracic cancer is warranted. Nonetheless, we used the largest all-payer inpatient database and implemented robust statistical methods to reduce the risk of introduced bias into the analysis.

In conclusion, our study used a nationally representative cohort to demonstrate that 70% of uninsured and 17% of insured patients who underwent thoracic oncologic resection were at risk of financial toxicity. Despite advancements in quality and access to health care, the risk of financial toxicity has remained unchanged over the past decade regardless of insurance status.

Factors associated with an increased risk of financial toxicity included uninsured status, Black and Hispanic race, public insurance, and incidence of complications, whereas elective admission, minimally invasive approaches, and treatment at metropolitan centers were associated with lower risk of financial toxicity. Given the persistent risk of financial toxicity, evaluation of systemic policy change in the subsidization of care and referral patterns is necessary to address the significant financial burden on patients and improve the value of thoracic oncologic care.

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DISCLOSURES

The authors have no conflicts of interest to disclose.

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Financial Toxicity in Thoracic Oncology: Money Isn't Everything, but it Certainly Matters

INVITED COMMENTARY:

Advancements in oncology have improved patient outcomes; however, they have also highlighted the financial pressures associated with cancer treatment. Financial toxicity—characterized as the negative impact that treatment expenses have on patients' quality of life—continues to be a critical concern in the field.[1] As the costs of cancer care escalate, identifying mechanisms to address financial toxicity should be of high priority.

In this issue of *The Annals of Thoracic Surgery*, Ng and colleagues[2] investigate financial toxicity in patients undergoing thoracic surgery, particularly focusing on oncologic resections through data derived from the National Inpatient Sample database. Their analysis, which spans from 2012 to 2021, reveals that roughly 69% of uninsured patients and 17% of insured patients experience financial toxicity, with this incidence remaining consistent over time. Importantly, complications in the index hospitalization significantly increase the risk of financial toxicity—more than doubling it for uninsured patients. In addition, but unsurprisingly, they highlight that Black, Hispanic, and publicly insured patients face a heightened risk of financial toxicity, whereas those undergoing minimally invasive procedures and at metropolitan hospitals have a reduced risk.

The authors deserve recognition for their insightful manuscript, which revisits the critical question, How can we provide high-value care to our patients? Despite great progress in medicine, it is all too easy to neglect the financial implications that may emerge when translating therapeutics into clinical practices. Yet, several limitations of this study should be noted. First, the National Inpatient Sample captures data pertaining only to a single hospitalization and does not encompass preoperative care, which often includes neoadjuvant therapy, or follow-up care. Second, the definition of post-subsistence income relied solely on food expenses and did not account for housing costs, which are often greater in urban settings and may result in an underestimation of financial toxicity.

These findings lead us to ask, How can we influence policy to enhance financial assistance plans for individuals affected by thoracic malignant neoplasms? The authors propose that adherence to screening guidelines focused on delivering high-value care could reduce complications related to diagnosis. However, uninsured patients often lack access to these essential screening services, highlighting the importance of interventions like free clinics that provide vital