Original Scholarship

Out-of-Network Air Ambulance Bills: Prevalence, Magnitude, and Policy Solutions

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Policy Points:

• Out-of-network air ambulance bills are a type of surprise medical bill and are driven by many of the same market failures behind other surprise medical bills, including patients’ inability to choose in-network providers in an emergency or to avoid potential balance billing by out-of-network providers.

• The financial risk to consumers is high because more than three-quarters of air ambulances are out-of-network and their prices are high and rising. Consumers facing out-of-network air ambulance bills have few legal protections owing to the Airline Deregulation Act’s federal preemption of state laws.

• Any federal policies for surprise medical bills should also address surprise air ambulance bills and should incorporate substantive consumer protections—not just billing transparency—and correct the market distortions for air ambulances.
Context: Out-of-network air ambulance bills are a growing problem for consumers. Because most air ambulance transports are out-of-network and prices are rising, patients are at risk of receiving large unexpected bills. This article estimates the prevalence and magnitude of privately insured persons’ out-of-network air ambulance bills, describes the legal barriers to curtailing surprise air ambulance bills, and proposes policies to protect consumers from out-of-network air ambulance bills.

Methods: We used the Health Care Cost Institute’s 2014-2017 data from three large national insurers to evaluate the share of air ambulance claims that are out-of-network and the prevalence and magnitude of potential surprise balance bills, focusing on rotary-wing transports. We estimated the magnitude of potential balance bills for out-of-network air ambulance services by calculating the difference between the provider’s billed charges and the insurer’s out-of-network allowed amount, including the patient’s cost-sharing. For in-network air ambulance transports, we calculated the average charges and allowed amounts, both in absolute magnitude and as a multiple of the rate that Medicare pays for the same service.

Findings: We found that less than one-quarter of air ambulance transports of commercially insured patients were in-network. Two-in-five transports resulted in a potential balance bill, averaging $19,851. In the latter years of our data, in-network rates for transports by independent (non-hospital-based) carriers averaged $20,822, or 369% of the Medicare rate for the same service.

Conclusions: Because the states’ efforts to curtail air ambulance balance billing have been preempted by the Airline Deregulation Act, a federal solution is needed. Owing to the failure of market forces to discipline either prices or supply, out-of-network air ambulance rates should be benchmarked to a multiple of Medicare rates or, alternatively, air ambulance services could be delivered and financed through an approach that combines competitive bidding and public utility regulation.

Keywords: air ambulances, out-of-network, surprise medical bills, balance bills.

Exorbitant out-of-network air ambulance bills are a serious and growing problem facing health care consumers. Air ambulances, which provide rapid medical transport for acutely ill or injured patients to reach higher-level health care facilities, may be either rotary (helicopter) or fixed-wing (airplane) transports. In urgent situations, patients are unable to select an in-network air ambulance
provider or even to decline the services. As a result, they can end up unexpectedly transported by an air ambulance provider not in their health plan's network, in which case the air ambulance provider may bill the patient for the difference between its full charges and the amount paid by the patient's insurance plan.

Out-of-network air ambulance bills are a type of surprise medical bill, those generated by the involuntary and unavoidable use of an out-of-network provider. Air ambulance bills share many of the same features of other surprise medical bills, such as consumers’ inability to choose in-network providers in an emergency and to avoid the potentially higher cost-sharing and balance billing by out-of-network providers. To an even greater extent than ordinary surprise medical bills, however, states are unable to regulate air ambulance providers’ billing practices because of the federal Airline Deregulation Act’s preemption of state laws. And even though Medicare and Medicaid generally prohibit balance billing, there are no protections against balance billing commercially insured patients for air ambulance services. Thus, despite some bold efforts by the states to address the problem, a federal solution is required.

Previous research has found that most air ambulance transports of commercially insured patients are provided out-of-network. The Government Accountability Office (GAO) reported that in 2017, 69% of air ambulance transports were out-of-network, and Garmon and Chartock found that between 2007 and 2014, 52% to 69% of air or water ambulances were out-of-network.\(^1,2\) Bai and colleagues found that the amounts charged to out-of-network patients—the provider’s “list price” before any discounts—are far higher than Medicare's payment rates and have been growing rapidly.\(^3\) Moreover, recent evidence indicates that average in-network prices have also risen rapidly over the past decade.\(^4\) These large charge and price increases have followed changes in the air ambulance industry, including greater private equity ownership and rising costs per transport driven by growing numbers of bases and vehicles and relatively flat demand.\(^1,5\)

Unexplored, however, are the magnitudes of commercial insurers’ payments to air ambulance providers and patients’ financial liability, for both in- and out-of-network air ambulance transports. Such data are necessary to provide a more complete picture of spending on air ambulance services, its growth over time, and the size of patients’ potential out-of-network bills. We also have few data detailing the breakdown of rural versus urban air ambulance utilization or the share of air
ambulance transports that cross state lines, which is important in order to understand the value of uniform federal protections.

In this article, we use a large nationwide data set of commercial medical claims to examine the prevalence and magnitude of out-of-network air ambulance bills, in-network payment rates, and patients' liability for rotary-wing services. Focusing on interfacility transports, we also describe the commercial air ambulance rates' markup over Medicare's rates and the share of air ambulance transports originating in urban versus rural areas. Next, we explain the market failures that have resulted in increasing spending on air ambulances. Finally, we describe the legal barriers to the states' regulation of air ambulance billing practices and propose two federal solutions to protect consumers from excessive out-of-network air ambulance bills. One would combine a prohibition on balance billing with minimum insurer out-of-network payments based on Medicare's rates. The other proposed solution would entail a regional competitive bidding framework.

Data and Methods

We evaluated Health Care Cost Institute (HCCI) commercial claims data from 2014 through 2017, which comprise claims from Aetna, Humana, and UnitedHealthcare (including more than 40 million covered lives in each year). The data include a network status indicator, the actual prices that insurers allow for in- and out-of-network services (allowed amounts), providers' charges, and patients' cost-sharing information.

We first looked at the share of air ambulance claims in- (versus out-of-) network. Next, in order to estimate the prevalence and magnitude of potential balance bills for out-of-network rotary-wing air ambulance services, we calculated the difference between the providers' billed charges and the insurers' out-of-network allowed amount (including any cost-sharing by patients). Because our data do not include any information on the magnitude of actual balance bills sent to patients, this calculation represents the potential liability that such a patient could face.

We then calculated the average and median charges and allowed amounts for in-network air ambulance services, both in absolute magnitude and, when possible, as a multiple of the rate that Medicare pays for the same service. Payments for air ambulance services generally have two components: a base rate and an additional per-mile rate. For
transports from rural areas, Medicare pays an additional 50% for both the base and the mileage rates. Thus, to compare commercial payment rates with Medicare's rates, it is necessary to know whether the pickup was in a rural or an urban area. Because the HCCI data do not include a geographic indicator for where an air ambulance pickup occurred, for this analysis we restricted the data to a subset of interfacility transfers for which we can identify the location of the facility from which the patient was transferred.

Finally, among this subset of interfacility transfers, we determined the share of air ambulance transports that crossed state lines.

### Results

Our analytic sample was made up of 36,312 air ambulance claims over the four-year study period. Of these claims, 77% were out-of-network (including those missing a network status) (Table 1). In total, 36% of the claims were missing a network status. They did, however, appear to be out-of-network claims delivered by hospital-based providers. Tables 2, 3, and 4 describe the characteristics of those claims missing a network status that led us to believe that they were out-of-network claims. Of these 36,312 claims, 89% were for rotary-wing services, and the remaining 11% were for fixed-wing services. Accordingly, the rest of our analyses focus on rotary-wing services, of which 77% were also provided

![](https://example.com/table1.png)

**Table 1. Shares of Air Ambulance Claims by Network Status, 2014-2017**

|                        | In-Network | Out-of-Network | Total |
|------------------------|------------|----------------|-------|
| Rotary-Wing Claims     | 7,250      | 24,965         | 32,215|
| % of Rotary-Wing Claims| 23%        | 77%            | 89%   |
| Fixed-Wing Claims       | 1,213      | 2,884          | 4,097 |
| % of Fixed-Wing Claims  | 30%        | 70%            | 11%   |
| Total Air Ambulance Claims | 8,463    | 27,849         | 36,312|
| % of Total Claims       | 23%        | 77%            | 100%  |

*Analysis of 2014-2017 Health Care Cost Institute commercial claims data.
Claims with missing network status are assumed to be out-of-network.
| Network Status       | Metric            | 2014 | 2015 | 2016 | 2017 | 2014-2017 |
|---------------------|-------------------|------|------|------|------|-----------|
| **Rotary-Wing Claims** |                   |      |      |      |      |           |
| Hospital-Based      |                   |      |      |      |      |           |
| In-Network          | # of Claims       | 1,137| 835  | 1,116| 1,491| 4,579     |
|                     | % of Rotary-Wing Claims | 15% | 11%  | 12%  | 18%  | 14%       |
| Missing Network     | # of Claims       | 2,603| 2,965| 3,411| 2,562| 11,541    |
|                     | % of Rotary-Wing Claims | 35% | 40%  | 38%  | 31%  | 36%       |
| Non-Hospital-Based  |                   |      |      |      |      |           |
| In-Network          | # of Claims       | 448  | 446  | 1,265| 512  | 2,671     |
|                     | % of Rotary-Wing Claims | 6%  | 6%   | 14%  | 6%   | 8%        |
| Out-of-Network      | # of Claims       | 3,274| 3,215| 3,264| 3,671| 13,424    |
|                     | % of Rotary-Wing Claims | 44% | 43%  | 36%  | 45%  | 42%       |
| **Total Rotary-Wing Claims** | # of Claims | 7,462| 7,461| 9,056| 8,236| 32,215   |
| **Fixed-Wing Claims** |                   |      |      |      |      |           |
| Hospital-Based      |                   |      |      |      |      |           |
| In-Network          | # of Claims       | 142  | 119  | 142  | 152  | 555       |
|                     | % of Fixed-Wing Claims | 15% | 12%  | 12%  | 15%  | 14%       |

Continued
### Table 2. Continued

| Network Status | Metric       | 2014 | 2015 | 2016 | 2017 | 2014-2017 |
|---------------|--------------|------|------|------|------|-----------|
| Missing Network\(^b\) | # of Claims  | 337  | 327  | 400  | 328  | 1,392     |
|               | % of Fixed-Wing Claims | 36%  | 33%  | 35%  | 32%  | 34%       |
| Non-Hospital-Based | # of Claims  | 116  | 164  | 252  | 126  | 658       |
| In-Network    | % of Fixed-Wing Claims | 12%  | 16%  | 22%  | 12%  | 16%       |
| Out-of-Network\(^b\) | # of Claims  | 350  | 388  | 343  | 411  | 1,492     |
|               | % of Fixed-Wing Claims | 37%  | 39%  | 30%  | 40%  | 36%       |
| Total Fixed-Wing Claims | # of Claims  | 945  | 998  | 1,137| 1,017| 4,097     |

\(^a\)Analysis of 2014-2017 Health Care Cost Institute commercial claims data.

\(^b\)Our data sample had no out-of-network claims for hospital-based providers and no missing network status claims for non-hospital-based providers.
Table 3. Counts of Rotary-Wing Air Ambulance Claims Paid in Full by Network Status and Year, 2014-2017

| Network Status            | Metric                        | 2014 | 2015 | 2016 | 2017 | 2014-2017 |
|---------------------------|-------------------------------|------|------|------|------|-----------|
| In-Network                | # of Claims Paid in Full      | 72   | 32   | 374  | 27   | 505       |
|                           | % of In-Network Claims        | 5%   | 2%   | 16%  | 1%   | 7%        |
| Out-of-Network\(^b\)      | # of Claims Paid in Full      | 1,676| 1,698| 1,607| 1,499| 6,480     |
|                           | % of Out-of-Network Claims    | 51%  | 53%  | 49%  | 41%  | 48%       |
| Missing Network\(^b\)     | # of Claims Paid in Full      | 1,282| 1,472| 1,745| 1,025| 5,524     |
|                           | % of Missing Network Claims   | 49%  | 50%  | 51%  | 40%  | 48%       |
| All Network Status        | # of Claims Paid in Full      | 3,030| 3,202| 3,726| 2,551| 12,509    |
|                           | % of Total Claims             | 41%  | 43%  | 41%  | 31%  | 39%       |
| Potential Balance Bill: Out-of-Network\(^b\) |                | 1,598| 1,517| 1,657| 2,172| 6,944     |
| Potential Balance Bill: Missing Network Status\(^b\) |                | 1,321| 1,493| 1,666| 1,537| 6,017     |
| % of Claims with Potential Balance Bill |                |      |      |      |      |           |
| Out-of-Network Only\(^b\) |                | 21%  | 20%  | 18%  | 26%  | 22%       |
| Out-of-Network and Missing Network Status\(^b\) |                | 39%  | 40%  | 37%  | 45%  | 40%       |

\(^a\)Analysis of 2014-2017 Health Care Cost Institute commercial claims data.
\(^b\)Our data sample had no out-of-network claims for hospital-based providers and no missing network status claims for non-hospital-based providers.
Table 4. Prevalence and Magnitude of Rotary-Wing Air Ambulance Claims Not Paid in Full and Out-of-Network and Missing Network Status Claims, 2014-2017

|                      | Out-of-Network (Non-Hospital-Based) | Missing Network Status (Hospital-Based) |
|----------------------|-------------------------------------|-----------------------------------------|
|                      | Paid in Full | Not Paid in Full | Paid in Full | Not Paid in Full |
| Number of Claims     | 6,480       | 6,944            | 5,524       | 6,017            |
| % of Claims          | 48%         | 52%              | 48%         | 52%              |
| Mean Amounts<sup>c</sup> |            |                  |             |                  |
| Charge               | $34,493     | $37,025          | $37,188     | $37,747          |
| Allowed Amount       | $34,493     | $17,471          | $37,188     | $17,552          |
| Balance              | $0          | $19,554          | $0          | $20,194          |
| Insurer Payment      | $33,804     | $16,717          | $37,103     | $17,214          |
| Patient Cost-Sharing | $689        | $754             | $85         | $338             |
| Median Amounts<sup>c</sup> |            |                  |             |                  |
| Charge               | $34,919     | $36,698          | $37,672     | $37,909          |
| Allowed Amount       | $34,919     | $8,538           | $37,672     | $14,489          |
| Balance              | $0          | $15,172          | $0          | $18,187          |
| Insurer Payment      | $34,189     | $7,712           | $37,631     | $14,236          |
| Patient Cost-Sharing | $0          | $0               | $0          | $0               |

<sup>a</sup>Analysis of 2014-2017 Health Care Cost Institute commercial claims data.
<sup>b</sup>Our data sample had no out-of-network claims for hospital-based providers and no missing network status claims for non-hospital-based providers.
<sup>c</sup>Charge and allowed amount include the base rate and mileage.

out-of-network (see Table 1). Our finding that 77% of air ambulance transports were out-of-network is higher than prior estimates from the GAO (69%, using FAIR Health data) and Garmon and Chartock (52% to 69%, using MarketScan data), which may reflect differences in the plans, market segments, and years included in the data sources, as well as the fact that the GAO restricted its analysis to claims that did have a network status.
Among out-of-network rotary-wing claims, the insurer paid the air ambulance provider's full billed charges 48% of the time—at an average of $35,733—meaning that there was no potential balance to bill the patient (beyond any normal cost-sharing by the patient) (Table 5). (We found that insurers paid the in-network air ambulance providers their billed charges in full 7% of the time, even though in-network providers are prohibited from sending their patients a balance bill.) The vast majority of these approved charges for out-of-network providers were paid by the insurer, and for these cases, the patient’s cost-sharing averaged $411. Payers may be approving the air ambulance providers’ full billed charges to protect plan members from balance billing. Moreover, we found that this practice may be more common among self-insured plans. While the prevalence of and mean charges for out-of-network claims

| Table 5. Prevalence and Magnitude of Rotary-Wing Air Ambulance Claims Not Paid in Full, 2014-2017a |
|---------------------------------------------------------------|
| **Paid in Full** | **Not Paid in Full** |
| Number of Claims | | |
| Number of In-Network Claims | 505 | 6,745 |
| % of In-Network Claims | 7% | 93%b |
| Number of Out-of-Network Claimsc | 12,004 | 12,961 |
| % of Out-of-Network Claims | 48% | 52% |
| Total Rotary-Wing Claims | 12,509 | 19,706 |
| % of Claims Resulting in a Potential Balance Bill | | |
| Mean Amounts for Out-of-Network Claimscd | | |
| Charge | $35,733 | $37,360 |
| Allowed Amount | $35,733 | $17,509 |
| Balance | $0 | $19,851 |
| Insurer Payment | $35,323 | $16,948 |
| Patient Cost-Sharing | $411 | $561 |

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a Analysis of 2014-2017 Health Care Cost Institute commercial claims data.
b Includes in-network claims whose in-network contracted rates were less than full charges and whose in-network providers are prohibited from sending patients a balance bill.
c Claims with missing network status are assumed to be out-of-network.
d Charge and allowed amount include the base rate and mileage.
were similar, self-insured plans paid these out-of-network claims in full
50% of the time, whereas fully insured plans did so 38% of the time.

Of those out-of-network services that were not paid in full (across all
plan types), patients were liable for a potential balance bill for 40% of
all helicopter air ambulance rides, with an average potential surprise bill
of $19,851, in addition to standard out-of-network cost-sharing, which
averaged $561 (see Table 5). The average charges were similar for out-
of-network air ambulance providers whose charges both were and were
not paid in full (see Table 5), suggesting that such behavior represents
the insurers’ or the employers’ policy rather than the providers’ billing
practice.

The average allowed amount for in-network services ($23,821) was
80% of the average billed charges ($29,679), suggesting that insurers
receive only modest in-network discounts off charges in their negotia-
tions with air ambulance providers (Table 6). The average total charges
grew by 28% from 2014 to 2017 (across all network types), with a simi-
lar growth in charges by both in- and out-of-network providers. The av-
erage total allowed amounts for in-network providers increased by 28%
over the study period, while the average total out-of-network allowed
amounts rose by 12% (see Table 6).

Overall, approximately half the claims we analyzed were provided
by air ambulance providers who appeared to be affiliated with a hos-
pital’s outpatient department (defined by the place of service code on
the claim), and the other half appeared to be independent, non-hospital-
based air ambulance providers (Figure 1). Hospital-based providers have
a higher share of in-network claims (28%) than do non-hospital-based
providers (17%), which may indicate that air ambulances’ network par-
ticipation is more likely when part of a broader contract negotiation with
one or more facilities. However, both the average charges and allowed
amounts are higher for hospital-based air ambulance providers than for
non-hospital-based providers, particularly for in-network services (see
Figure 1), suggesting again that insurers are unable to gain much cost
advantage by bringing these services in-network.

To compare commercial charges and allowed amounts with Medicare’s
reimbursement rates, we looked at the subset of 2016 through 2017 in-
terfacility transfer claims for which we can identify whether the pickup
was in an urban or a rural area. Interfacility transfers comprised 59%
of all rotary-wing air ambulance claims during this time period, in-
cluding 51% for which we could identify the associated pickup facility
Table 6. Mean and Median Charges and Allowed Amounts for Rotary-Wing Air Ambulance Claims by Network Status and Year, 2014-2017

| Year | In-Network | | Out-of-Network | | All Network Status | |
|------|-----------|---|---------------|---|-------------------|---|
|      | # of Claims | Amount | % Change | # of Claims | Amount | % Change | # of Claims | Amount | % Change |
| Mean Charge<sup>c</sup> | | | | | | | | | |
| 2014 | 1,585     | $24,938 | | 5,877 | $31,974 | | 7,462 | $30,480 | |
| 2015 | 1,281     | $26,055 | 4% | 6,180 | $34,971 | 9% | 7,461 | $33,440 | 10% |
| 2016 | 2,381     | $32,236 | 24% | 6,675 | $37,770 | 8% | 9,056 | $36,315 | 9% |
| 2017 | 2,003     | $32,708 | 1% | 6,233 | $41,230 | 9% | 8,236 | $39,158 | 8% |
| 2014-2017 | 7,250 | $29,679 | 31% | 24,965 | $36,577 | 29% | 32,215 | $35,024 | 28% |
| Median Charge<sup>c</sup> | | | | | | | | | |
| 2014 | 1,585     | $24,014 | | 5,877 | $31,893 | | 7,462 | $30,566 | |
| 2015 | 1,281     | $24,911 | 4% | 6,180 | $35,350 | 11% | 7,461 | $33,440 | 10% |
| 2016 | 2,381     | $31,590 | 27% | 6,675 | $38,790 | 10% | 9,056 | $36,164 | 11% |
| 2017 | 2,003     | $30,878 | −2% | 6,233 | $42,006 | 8% | 8,236 | $39,653 | 7% |
| 2014-2017 | 7,250 | $28,683 | 29% | 24,965 | $36,774 | 32% | 32,215 | $34,842 | 30% |

Continued
Table 6. Continued

| Year      | In-Network |         | Out-of-Network |         | All Network Status |         |
|-----------|------------|---------|----------------|---------|--------------------|---------|
|           | # of Claims | Amount  | % Change       | # of Claims | Amount  | % Change       | # of Claims | Amount  | % Change       |
| Mean Allowed Amount<sup>c</sup> | 2014 1,585 | $21,385 |               | 5,877 $24,299 |               | 7,462 $23,680 |               |
|           | 2015 1,281 | $21,553 | 1%             | 6,180 $26,039 | 7%       | 7,461 $25,269 | 7%           |
|           | 2016 2,381 | $23,662 | 10%            | 6,675 $27,233 | 5%       | 9,056 $26,294 | 4%           |
|           | 2017 2,003 | $27,387 | 16%            | 8,236 $27,346 | 4%       |               |              |
|           | 2014-2017 7,250 | $23,821 | 28% | 24,965 $26,272 | 12% | 32,215 $25,720 | 15% |
| Median Allowed Amount<sup>c</sup> | 2014 1,585 | $20,297 |               | 5,877 $26,227 |               | 7,462 $24,785 |               |
|           | 2015 1,281 | $18,872 | −7%            | 6,180 $27,730 | 6%       | 7,461 $26,214 | 6%           |
|           | 2016 2,381 | $22,440 | 19%            | 6,675 $27,909 | 1%       | 9,056 $26,000 | −1%          |
|           | 2017 2,003 | $24,800 | 11%            | 8,236 $25,494 | −2%      |               |              |
|           | 2014-2017 7,250 | $22,207 | 22% | 24,965 $27,037 | −1% | 32,215 $25,628 | 3% |

<sup>a</sup>Analysis of 2014-2017 Health Care Cost Institute commercial claims data.

<sup>b</sup>Claims with missing network status are assumed to be out-of-network.

<sup>c</sup>Charge and allowed amount include the base rate and mileage.
Figure 1. Charges, Allowed Amounts, and Shares of Rotary-Wing Air Ambulance Claims for Hospital-Based and Non-Hospital-Based Providers, 2014-2017

Means of In-Network and Out-of-Network Charges and Allowed Amounts
Rotary-Wing Air Ambulance Claims, 2014-2017\textsuperscript{b,c}

|                      | In-Network | Out-of-Network | Total |
|----------------------|------------|----------------|-------|
| Hospital-Based       | 4,579      | 11,541         | 16,120|
| % of Hospital-Based Claims | 28%        | 72%            | 50%   |
| Non-Hospital-Based   | 2,671      | 13,424         | 16,095|
| % of Non-Hospital-Based Claims | 17%        | 83%            | 50%   |
| Total Claims         | 7,250      | 24,965         | 32,215|
| % of Total Claims    | 23%        | 77%            | 100%  |

\textsuperscript{a} Analysis of 2014-2017 Health Care Cost Institute commercial claims data.

\textsuperscript{b} Charge and allowed amounts include the base rate and mileage.

\textsuperscript{c} Claims with missing network status are assumed to be out-of-network.

Claim. Of these pickups, 53\% originated in urban areas, with the remaining 47\% originating in rural areas (Figure 2). For these claims, the average total in-network allowed amounts were $27,688 and $20,822 for hospital-based and non-hospital-based air ambulance providers,
respectively (Figure 3), which are roughly similar to the average in-network allowed amounts for the overall sample (Figure 4).

Data also allow Medicare comparisons for independent (non-hospital-based) air ambulance providers. For them, the average in-network
allowed amounts were 369% of Medicare’s reimbursement rate for the same service. We found that the markup over Medicare was higher for the mileage rate (488%) than the base rate (334%). We could not compute the equivalent metric for hospital-based providers because these
Figure 4. Comparison of Charges and Allowed Amounts for Rotary-Wing Interfacility Transfers Claims with All Rotary-Wing Claims, 2016-2017\(^a\)

\(^a\)Analysis of 2016-2017 Health Care Cost Institute commercial claims data.

\(^b\)Charge and allowed amount include the base rate and mileage.

\(^c\)Claims with missing network status are assumed to be out-of-network.
claims do not include mileage units in our data, but the base rate for these claims—which averages $17,729—was 433% of Medicare’s base rate (see Figure 3).

Finally, among this subset of interfacility transfers, 18% of them crossed state lines (see Figure 2).

Discussion

Out-of-network air ambulance bills exhibit the hallmarks of unfair surprise medical bills, and the market is characterized by high and fast-growing spending. The remainder of this article discusses why a federal regulatory solution is needed to fix the market for air ambulance services and how a federal solution should be crafted.

The Dysfunctional Market for Air Ambulance Service

For most medical services, patients almost always select providers that are in-network with their insurance plan, as doing so generally comes with lower cost-sharing. But given the urgent nature of air ambulance services, patients are typically unable to choose the operator to transport them and therefore can end up serviced by an out-of-network air ambulance. We found that more than three-quarters of air ambulance transports are out-of-network. In this situation, about half the time the commercial insurer pays the air ambulance’s billed charges in full. We did find, however, potential balance bills for air ambulances in 40% of cases, averaging nearly $20,000.

Without the ability to steer service volume, it may be difficult for insurers to contract with or secure much of a discount from air ambulance providers. The low volume of air ambulance services likely also contributes to the lack of price constraints. As a result, it is not surprising to see such high and rising charges from air ambulance companies, relative to Medicare’s rates, in addition to the infusion of private equity into the industry. Moreover, providers can use the threat of balance billing patients to demand higher contracted rates from payers, which may help explain the high in-network rates relative to what Medicare pays and why in-network discounts are relatively modest.
The Legal Landscape

We might expect the states to be the first line of defense against air ambulance surprise billing, as states are the primary regulators of both health care services and health insurance. Air ambulance providers, however, have repeatedly used federal preemption to beat back state regulations. Beyond the broad ERISA preemption that stymies many state efforts to regulate health plans,\(^8\) here the primary source of preemption is even more sweeping: the Airline Deregulation Act of 1978 (ADA).\(^9\)

For decades before 1978, the federal government regulated all commercial air transport services (scheduled or otherwise) essentially as public utilities, setting both fares and schedules. The Airline Deregulation Act eliminated this government oversight in favor of market competition, based on the premise that doing so would better serve consumers’ interests. To ensure that states did not step into the breach, the ADA has a sweeping preemption provision: “a state … may not enact or enforce a law, regulation, or other provision … related to a price, route, or service of an air carrier” (49 U.S.C. §41713 [1997]).

Unlike normal commercial air service, market competition has not worked well for medical transport. Deregulation produced a sharp drop in commercial air fares,\(^10\) in contrast with the rapidly rising prices for air medical transport. The air ambulance service was so new in 1978 that we have no data concerning the prevailing charges at the time that deregulation was adopted.\(^11\) An industry survey in 1982, however, reported that air ambulance charges averaged about $500, which is equivalent to about $1,350 now.\(^12\) The average charges of $35,024 between 2014 and 2017 (see Table 6) represent a more than 25-fold escalation in charges since shortly after the deregulation era began. This failure of the market has prompted a half dozen states to attempt some form of rate oversight of air ambulances.\(^13\) But courts have firmly rejected all of these state efforts, ruling that these state laws are preempted by the ADA.\(^14\)

States have sought creative ways to avoid preemption by, for instance, giving priority in assigning 911 response calls to companies that voluntarily comply with a fee schedule, but courts have also struck down these voluntary approaches.\(^13\) Indeed, courts have gone as far as ruling that states may not set air ambulance fee schedules even for their own government employee health plans or under their state-administered worker compensation funds.\(^15\) Nor may states apply generic consumer
protection laws, or even long-standing common law contract doctrine, to claims of excessive air ambulance billing.\textsuperscript{16}

Courts have enforced this absolute preemption even though the air ambulance industry did not exist when Congress enacted the ADA,\textsuperscript{10,17} and the act’s fundamental premise about the suitability of unregulated market forces does not apply to these services.\textsuperscript{18} As the Tenth Circuit explained:

There is certainly some persuasive force to the ... [argument that] states have been unable to “prevent air ambulance service providers ... from imposing exorbitant fees on patients who wrongly assume their insurance will cover the charges and are not in a position to discover otherwise” or engaging in other unscrupulous pricing behaviors that would not be sustainable in a true free market but are easily perpetuated in the warped market of air-ambulance services, ... [and so] surely Congress did not anticipate or intend such a result.... [Nev-ertheless] any deficiency in the plain language of the statute or the scope of its coverage must be corrected by Congress.\textsuperscript{19}

States continue to search for creative ways to circumvent this seemingly impenetrable preemption barrier. Wyoming, for instance, recently issued a proposal (in the form of a Medicaid Section 1115 waiver) to pay for all air ambulance services in the state through Medicaid, including services to the privately insured, in order to receive federal permission to regulate the industry as a public utility.\textsuperscript{20} Although CMS rejected the plan, Wyoming had proposed to set up a call center to dispatch air ambulances and solicit bids from air ambulance providers to service the state in exchange for a fixed monthly payment. For the privately insured, the state would recoup payments from private insurers and employer-based plans through its Medicaid “pay and chase” authority. CMS denied Wyoming’s waiver application, stating that Section 1115 waivers could not be used to circumvent the ADA and that the proposal was not budget neutral, as required.\textsuperscript{21} Even if such an approach were approved, because a substantial number of air ambulance transports cross state lines (18% in our data sample of interfacility transports), a uniform federal solution would still offer advantages.

Responding to widespread sentiment that federal law is frustrating much needed consumer protection, Congress, in its FAA Reauthorization Act of 2018,\textsuperscript{22} called for the creation of an advisory committee to study air ambulance billing, but the committee’s charge appears to center on developing proposals relating to price transparency
rather than on preventing, or limiting the size of, unfair out-of-network billing.23

Although we believe that a federal solution to out-of-network air ambulance bills is preferable, in the absence of a substantive federal solution, Congress should at least carve out air ambulance bills from the Airline Deregulation Act’s preemption to allow states to apply their own solutions.

**Policy Solutions**

Any solution to out-of-network air ambulance bills should protect consumers from out-of-network balance billing and counter the market distortions that have failed to discipline high and rising prices. In this section, we describe two policy options that would achieve these goals.

The market failures causing different types of unfair out-of-network bills are similar, and thus similar approaches proposed to address hospital and physician surprise medical bills can be fashioned for the air ambulance market.24 The consumer protections typically proposed for surprise medical bills should apply to out-of-network air ambulances: patients should be held harmless from owing more than the in-network cost-sharing amount; air ambulance providers should be prohibited from balance billing patients; and any cost-sharing the patient owes should be counted toward the patient’s in-network deductible and cost-sharing limits.

As with policies to address surprise medical bills in other settings, the most contentious aspect is how to determine the amount that private health plans owe the out-of-network air ambulance provider. In the context of the air ambulance market, it is critical to get the out-of-network benchmark “right” (ie, approximating an efficient market rate).

**Billing Regulation Benchmarked to Medicare Rates.** The goal of an out-of-network benchmark for reimbursement is to replicate a “market rate” to which the parties would agree in the absence of the ability to collect an out-of-network balance bill. But no market-based reference point is available in the absence of a functioning market.

Federal legislative proposals to address surprise medical bills and air ambulance bills have proposed out-of-network payment methodologies based on median in-network rates.25,26 The preponderance of out-of-network air ambulance services (77% in our data) and the resulting
distortion of in-network rates point to the weakness of this approach. Payment methodologies based on median in-network contracted rates bake in the already excessive rates resulting from the very market failure that consumer protections are attempting to correct.\textsuperscript{27} Similarly, methods relying on arbitration to determine payment rates often direct arbitrators to consider in-network contracted rates or even charges, thus replicating the same problems with the added unpredictability and administrative costs of arbitration.\textsuperscript{28} That private payers are unable to secure significant discounts for network participation suggests they lack the bargaining power to resist air ambulance providers’ price demands.

Accordingly, a better approach would benchmark out-of-network reimbursement rates for air ambulances to a national payment standard—a rate based on a multiple of the Medicare rate for the service provided—determined with the goal of replicating an efficient market rate. Although serious disagreement persists regarding the adequacy of the Medicare rates, the problem is less that the Medicare air ambulance fee schedule is too low than that the private market has failed to discipline rising prices, excess capacity, or discriminatory pricing.

One reaction that many would have to government rate regulation is that the government might set the rate too low to maintain adequate service. We believe, however, that the government would maintain a close eye on the industry after the implementation of rate regulation to gauge whether access issues arise, in which case the agency would be authorized to increase payment rates. One good indicator of whether rate increases are needed is whether, for hospital-based carriers, hospitals find it necessary to subsidize air ambulances beyond the allowed rates. The GAO could continue to report on air ambulance services, rates, network status, market entry or exit, and access, to inform regulatory modifications if the GAO report finds evidence of under- or overpayment or access issues.

Like other health care services, Medicare in the past paid hospital-operated air ambulance providers based on their costs. In 2002, Medicare switched to a prospective fee schedule for air ambulance services, established through negotiated rule-making.\textsuperscript{29} The air ambulance base rate was set in 2002 to approximate costs at that time (67 Fed. Reg. 9100, 9117–9118 [2002]) and is adjusted annually based on the Consumer Price Index for All Urban Consumers (CPI-U) and a modest “productivity adjustment” (67 Fed. Reg. 9100, 9125 [2002]). The benefits
of using Medicare rates as a benchmark are administrative simplicity and the fact that Medicare already contains plausible adjustments for appropriate factors such as geography, rural versus urban origination, distance, and level of service. These Medicare adjustments would be reflected in the benchmark multiplier and updated over time.

Just as Medicare’s ambulance rates (for both ground and air) were initially set through negotiated rule-making with representatives of various stakeholders affected by the regulation, negotiated rule-making could be used to set the appropriate multiplier of these Medicare rates for private payers for out-of-network reimbursement, with the secretary of Health and Human Services given authority to make a final determination. Negotiated rule-making is an administrative process that a variety of federal agencies have successfully used to gather input from relevant interest groups to develop proposed rules that the agency then revises and adopts through the standard, public notice, and comment process. The negotiation could start using a multiple currently existing in a reasonably functioning geographic market, in which a larger share of air ambulance providers are in-network for historical or structural reasons and in which private rates are more closely related to efficient costs. The process of determining the multiplier would be contentious and would need to be calibrated to strike a balance between affordability and access, avoiding both agency-capture and widespread provider exit. We acknowledge the difficulty of this approach but believe it is worth exploring.

The lack in most areas of a functioning market for air ambulance services that is not distorted by balance billing requires the adoption of some type of benchmark for out-of-network rates. An objective benchmark unrelated to charges would strongly encourage insurers and air ambulance providers to establish a contracted rate or else default to a benchmark based on objective measures. Using median in-network rates or databases of commercial rates as a benchmark or resorting to arbitration, albeit preferable to a totally unregulated market, risks ossifying the current above-market rates resulting from a distorted market. Without a functioning market, some multiple of Medicare rates would likely be our best benchmark on which to base out-of-network air ambulance bills.

**Competitive Bidding/Public Utility Regulation.** An alternative approach would seek to create a functioning market for air ambulance services building on the model recently proposed by Wyoming. This approach resembles both a competitive bidding system and a public utility regulation model.
The federal government would determine the quantity, standards, and features of the air ambulance services needed to service different regions of the country. The air ambulance companies would then competitively bid for contracts to provide up to a certain quantity of services in a given region in exchange for a fixed monthly payment from the government. Multiple companies could be selected to service a given region to ensure adequate capacity, to allow smaller companies and new entrants to maintain a market presence, and to maintain competition in subsequent years’ competitive bidding. Administering separate bidding processes for different regions in the country (possibly state-by-state) also would help maintain competition over the longer term by allowing different companies to win contracts. Call centers would be established to dispatch air ambulance calls to the winning bidders in a given region.

Air ambulance services for all US residents, including the uninsured, would be financed through this new competitive bidding program. Some amount of patient cost-sharing, based on income and program eligibility, could also help fund the benefit; no cost-sharing would be required of patients enrolled in Medicaid or other programs without cost-sharing requirements. While monthly payments would be made through the federal government, all payers—public and private—would contribute their per capita share of the air ambulance costs to the program.

Limiting the air medical transport market to selected providers is a form of public utility regulation, which the health care industry as a whole generally resists. It would also represent a significant departure from the status quo. However, a key feature and potential advantage of this proposed approach is that it avoids the difficulty of the government having to decide the “right” price for air ambulance services, instead utilizing a competitive bidding mechanism to establish prices. It also allows quicker price responses to changing market dynamics. This competitive bidding approach for air ambulance services is feasible because of the existence of a relatively large number of air ambulance service providers and their geographic mobility. Nonetheless, regulators need to remain vigilant to ensure that such competition remains in the market over time. Without competition, this approach would fail to constrain prices.
Conclusion

Whichever approach is taken, out-of-network air ambulance bills are created by the same market failures as other types of surprise medical bills. Thus, any federal policies to address surprise medical bills should also address out-of-network air ambulance bills. A federal solution is critical because the states are unable to protect patients under the Airline Deregulation Act. The best policy approaches incorporate substantive consumer protections—not just transparency—and correct the market distortions for air ambulances.

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