

# Cancer patient inpatient admission and ED visit trends

## Methodology

We applied CMS's definitions of OP-35 to Medicare SAF hospital inpatient and outpatient data to calculate national inpatient admission and ED visit rates for different hospital and patient cohorts. Analyses performed include overall inpatient admission and ED visit rates by hospital cohort (size, teaching status, community types, disproportionate share percentage) and patient demographics (tumor site, sex, age, race). We also calculated per patient inpatient admission and ED visit rates by patient demographics (tumor site, sex, age, race).

Beneficiary characteristics based on Medicare Beneficiary Summary File. Tumor site definitions based on Advisory Board CY 2018 Tumor Site Map. Inpatient admissions and ED visits are mutually exclusive, with admissions taking precedence. This means that if a patient has experienced one or more admissions AND one or more ED visits within 30 days of receiving outpatient chemo, that patient will only be counted towards the inpatient admission rate. As a result, ED visit rates may seem lower than expected.

## Average inpatient admission and ED visit rates by hospital cohort

### Hospital bed size

Hospitals by bed number range	Number of hospitals	Average inpatient admission rate <sup>1</sup>	Average ED visit rate <sup>2</sup>
0-100	945	8.5%	14.2%
101-200	534	11.1%	13.7%
201-300	369	11.3%	13.1%
301-400	232	12.2%	13.3%
401-500	136	11.6%	13.8%
500+	220	11.9%	13.4%

- Hospitals with less than 101 beds have a slightly lower average inpatient admission rate

### Hospital teaching status

Teaching status	Number of hospitals	Average inpatient admission rate <sup>1</sup>	Average ED visit rate <sup>2</sup>
Major teaching	287	11.1%	12.5%
Minor teaching	603	11.8%	13.6%
Non-teaching	1,037	10.4%	13.9%

- Hospital inpatient admission and ED visit rates are relatively similar across hospitals with different teaching statuses

### Hospital community type

Community type	Number of hospitals	Average inpatient admission rate <sup>1</sup>	Average ED visit rate <sup>2</sup>
Urban	1,523	11.1%	13.3%
Rural	404	10.3%	14.7%

- Hospital inpatient admission and ED visit rates are relatively similar across community types

1. Distinct number of eligible patients that had 1+ qualifying admission within 30 days of an outpatient chemotherapy treatment divided by the total number of eligible patients.

2. Distinct number of eligible patients that had 1+ qualifying ED visit within 30 days of an outpatient chemotherapy treatment divided by the total number of eligible patients. Patients were not eligible if they also had an inpatient admission during this time.

### Hospital quartile for percentage of patients who are low income

Quartile	Number of hospitals	Average inpatient admission rate <sup>1</sup>	Average ED visit rate <sup>2</sup>
Quartile 1 (lowest percent of low-income patients)	357	10.1%	12.7%
Quartile 2	528	11.1%	13.3%
Quartile 3	552	11.4%	14.4%
Quartile 4 (highest percent of low-income patients)	490	11.0%	13.7%

- Hospital inpatient admission and ED visit rates are relatively similar across hospitals with different numbers of low-income patients

### Average inpatient admission and ED visit rates by patient demographics

#### Patient tumor site

Tumor site	Average inpatient admission rate <sup>1</sup> (Number of distinct patients with 1+ qualifying admission)	Average ED visit rate <sup>2</sup> (Number of distinct patients with 1+ qualifying admission)
Breast	8.8% (2,694)	12.9% (3,948)
Chemotherapy	11.3% (6,529)	13.3% (7,635)
Endocrine	12.2% (156)	16.0% (205)
Gastrointestinal	14.8% (6,094)	19.3% (7,980)
Gynecology	12.2% (1,846)	15.7% (2,360)
Head & Neck	14.7% (1,122)	16.8% (1,281)
Hematological	18.0% (2,850)	18.2% (2,877)
Lymphoma	13.8% (2,714)	13.5% (2,667)
Musculoskeletal	13.7% (1,069)	16.2% (1,265)
Neurology	14.6% (504)	16.7% (577)
Other	13.8% (891)	17.7% (1,142)
Skin	8.1% (536)	11.5% (765)
Thoracic	17.7% (6,025)	20.6% (7,020)
Urology	6.0% (2,676)	8.0% (3,612)

- Urology, breast, and skin tumor sites have lower rates of inpatient admissions than other tumor sites; hematological and thoracic tumor sites have higher rates of inpatient admissions than other tumor sites
- Urology tumor site patients also have lower rate of ED visits than other tumor sites; thoracic and gastrointestinal tumor site patients have higher rates of ED visits than other tumor sites

#### Patient sex

Sex	Average inpatient admission rate <sup>1</sup> (Number of distinct patients with 1+ qualifying admission)	Average ED visit rate <sup>2</sup> (Number of distinct patients with 1+ qualifying admission)
Male	11.9% (17,393)	13.8% (20,245)
Female	12.6% (18,313)	15.8% (23,089)

- Hospital inpatient admission and ED visit rates are relatively similar across sexes

1. Distinct number of eligible patients that had 1+ qualifying admission within 30 days of an outpatient chemotherapy treatment divided by the total number of eligible patients.

2. Distinct number of eligible patients that had 1+ qualifying ED visit within 30 days of an outpatient chemotherapy treatment divided by the total number of eligible patients. Patients were not eligible if they also had an inpatient admission during this time.

### Patient age group

Age group	Average inpatient admission rate <sup>1</sup> (Number of distinct patients with 1+ qualifying admission)	Average ED visit rate <sup>2</sup> (Number of distinct patients with 1+ qualifying admission)
18-64	13.5% (6,539)	18.0% (8,755)
65-74	12.6% (18,013)	14.7% (21,073)
75-84	11.6% (9,442)	14.0% (11,376)
85+	8.8% (1,712)	11.0% (2,130)

- Patients in the 85+ age group have a lower rate of inpatient admissions than other age groups
- Patients in the 85+ age group also have a lower rate of ED visits than other age groups; patients in the 18-64 age group have a higher rate of ED visits than other age groups

### Patient race

Race	Average inpatient admission rate <sup>1</sup> (Number of distinct patients with 1+ qualifying admission)	Average ED visit rate <sup>2</sup> (Number of distinct patients with 1+ qualifying admission)
White	12.1% (29,296)	14.5% (35,179)
Black	12.8% (3,980)	17.0% (5,279)
Hispanic	13.0% (572)	16.9% (743)
Asian	13.1% (566)	14.4% (622)
North American Native	14.2% (183)	19.5% (252)
Other	12.6% (523)	14.5% (601)
Unknown	11.6% (586)	13.0% (658)

- Inpatient admission rates are relatively similar across racial groups
- North American Native patients have a higher ED visit rate than other racial groups

## Average number of inpatient admissions and ED visits per patient, by patient demographics

### Per patient, by patient tumor site

Tumor site	Average number of inpatient admissions per patient <sup>3</sup> (Number of distinct patients with 1+ qualifying admission)	Average number of ED visits per patient <sup>4</sup> (Number of distinct patients with 1+ qualifying ED visit)
Breast	3.07 (2,694)	3.13 (3,948)
Chemotherapy	3.53 (6,529)	3.76 (7,635)
Endocrine	3.01 (156)	3.58 (205)
Gastrointestinal	4.52 (6,094)	5.17 (7,980)
Gynecology	3.31 (1,846)	3.71 (2,360)
Head & Neck	3.70 (1,122)	3.68 (1,281)
Hematological	4.94 (2,850)	4.91 (2,877)
Lymphoma	5.27 (2,714)	4.86 (2,667)
Musculoskeletal	3.14 (1,069)	3.26 (1,265)
Neurology	2.49 (504)	2.59 (577)
Other	3.66 (891)	3.71 (1,142)
Skin	2.60 (536)	2.73 (765)
Thoracic	3.35 (6,025)	3.70 (7,020)
Urology	2.48 (2,676)	2.54 (3,612)

- Lymphoma patients have a higher average number of inpatient admissions per patient than other tumor sites
- Gastrointestinal patients have a higher average number of ED visits per patient than other tumor sites

1. Distinct number of eligible patients that had 1+ qualifying admission within 30 days of an outpatient chemotherapy treatment divided by the total number of eligible patients.

2. Distinct number of eligible patients that had 1+ qualifying ED visit within 30 days of an outpatient chemotherapy treatment divided by the total number of eligible patients. Patients were not eligible if they also had an inpatient admission during this time.

3. Only for patients with at least one qualifying inpatient admission within 30 days of an outpatient chemotherapy treatment.

4. Only for patients with at least one qualifying ED visit within 30 days of an outpatient chemotherapy treatment. Unlike in CMS' OP-35 methodology, patients were included in this calculation whether or not they also had an inpatient admission during this time.

*Per patient, by patient sex*

Sex	Average number of inpatient admissions per patient <sup>3</sup> (Number of distinct patients with 1+ qualifying admission)	Average number of ED visits per patient <sup>4</sup> (Number of distinct patients with 1+ qualifying ED visit)
Male	3.84 (17,393)	3.97 (20,245)
Female	3.68 (18,313)	3.91 (23,089)

- Average number of inpatient admissions and ED visits per patient are relatively similar across sexes

*Per patient, by patient age group*

Age group	Average number of inpatient admissions per patient <sup>3</sup> (Number of distinct patients with 1+ qualifying admission)	Average number of ED visits per patient <sup>4</sup> (Number of distinct patients with 1+ qualifying ED visit)
18-64	3.78 (6,539)	4.24 (8,755)
65-74	3.91 (18,013)	4.07 (21,073)
75-84	3.59 (9,442)	3.65 (11,376)
85+	2.92 (1,712)	2.94 (2,130)

- Patients in the 85+ age group have a slightly lower average number of inpatient admissions and ED visits per patient than other age groups

*Per patient, by patient race*

Race	Average number of inpatient admissions per patient <sup>3</sup> (Number of distinct patients with 1+ qualifying admission)	Average number of ED visits per patient <sup>4</sup> (Number of distinct patients with 1+ qualifying ED visit)
White	3.77 (29,296)	3.94 (35,179)
Black	3.58 (3,980)	3.88 (5,279)
Hispanic	3.85 (4,407)	3.97 (743)
Asian	3.73 (4,306)	4.10 (622)
North American Native	3.69 (1,290)	4.04 (252)
Other	3.83 (4,156)	4.03 (601)
Unknown	4.18 (5,054)	4.11 (658)

- Average number of inpatient admissions and ED visits per patient are relatively similar across racial groups

1. Distinct number of eligible patients that had 1+ qualifying admission within 30 days of an outpatient chemotherapy treatment divided by the total number of eligible patients.

2. Distinct number of eligible patients that had 1+ qualifying ED visit within 30 days of an outpatient chemotherapy treatment divided by the total number of eligible patients. Patients were not eligible if they also had an inpatient admission during this time.

3. Only for patients with at least one qualifying inpatient admission within 30 days of an outpatient chemotherapy treatment.

4. Only for patients with at least one qualifying ED visit within 30 days of an outpatient chemotherapy treatment. Unlike in CMS' OP-35 methodology, patients were included in this calculation whether or not they also had an inpatient admission during this time.