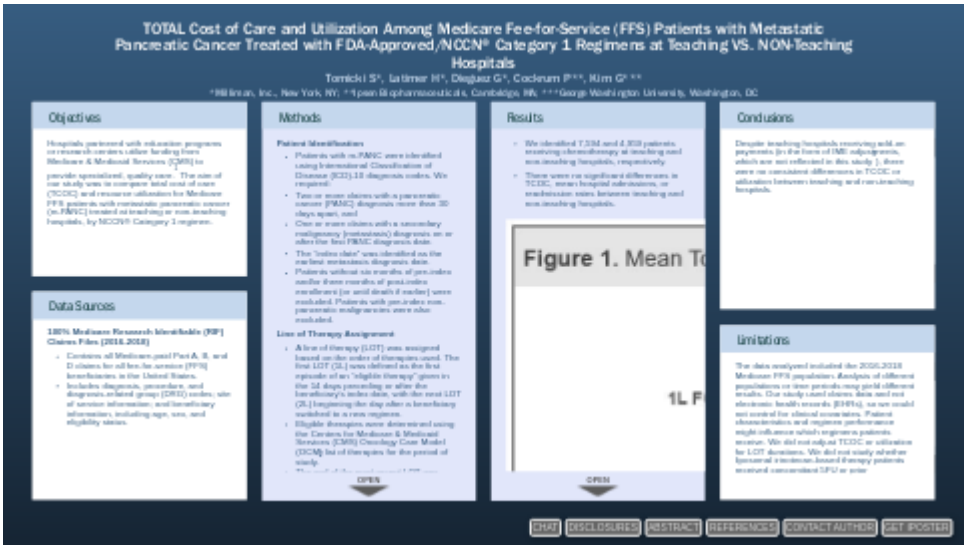
TOTAL Cost of Care and Utilization Among Medicare Fee-for-Service (FFS) Patients with Metastatic Pancreatic Cancer Treated with FDA-Approved/NCCN® Category 1 Regimens at Teaching VS. NON-Teaching Hospitals



Tomicki S*, Latimer H*, Dieguez G*, Cockrum P**, Kim G***

*Milliman, Inc., New York, NY; **Ipsen Biopharmaceuticals, Cambridge, MA; ***George Washington University, Washington, DC

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OBJECTIVES

Hospitals partnered with education programs or research centers utilize funding from Medicare & Medicaid Services (CMS) to

provide specialized, quality care.[1] The aim of our study was to compare total cost of care (TCOC) and resource utilization for Medicare FFS patients with metastatic pancreatic cancer (m-PANC) treated at teaching or non-teaching hospitals, by NCCN® Category 1 regimen.

DATA SOURCES

100% Medicare Research Identifiable (RIF) Claims Files (2016-2018)

- Contains all Medicare-paid Part A, B, and D claims for all fee-for-service (FFS) beneficiaries in the United States.
- Includes diagnosis, procedure, and diagnosis-related group (DRG) codes; site of service information; and beneficiary information, including age, sex, and eligibility status.

METHODS

Patient Identification

- Patients with m-PANC were identified using International Classification of Disease (ICD)-10 diagnosis codes. We required:
- Two or more claims with a pancreatic cancer (PANC) diagnosis more than 30 days apart, and
- One or more claims with a secondary malignancy (metastasis) diagnosis on or after the first PANC diagnosis date.
- The “index date” was identified as the earliest metastasis diagnosis date.
- Patients without six months of pre-index and/or three months of post-index enrollment (or until death if earlier) were excluded. Patients with pre-index non-pancreatic malignancies were also excluded.

Line of Therapy Assignment

- A line of therapy (LOT) was assigned based on the order of therapies used. The first LOT (1L) was defined as the first episode of an “eligible therapy” given in the 14 days preceding or after the beneficiary’s index date, with the next LOT (2L) beginning the day after a beneficiary switched to a new regimen.
- Eligible therapies were determined using the Centers for Medicare & Medicaid Services (CMS) Oncology Care Model (OCM) list of therapies for the period of study.[2]
- The end of the most recent LOT was defined as the earlier of 28 days after the most recent administration, visit date, or order for oral therapy (after the first date of chemotherapy), or date of death, if applicable.

Costs and resource utilization were summarized for the following NCCN® Category 1 drugs or regimens:

- 1L Gemcitabine monotherapy
- 1L Gemcitabine + nab-paclitaxel
- 1L Folinic acid + 5-fluorouracil + irinotecan + oxaliplatin (FOLFIRINOX)
- 2L Liposomal irinotecan + 5FU (5FU was not included in this analysis; see Limitations for further details.)

Teaching Hospital Identification

- Teaching hospitals were defined as those receiving indirect medical education (IME) adjustments to Medicare's prospective payment rates and were identified using CMS Fiscal Year IPPS Final Rule and Correction Notices.[3]
- Patients were attributed to teaching or non-teaching hospitals based on plurality of chemotherapy claims.

Cost Analysis and Resource Utilization

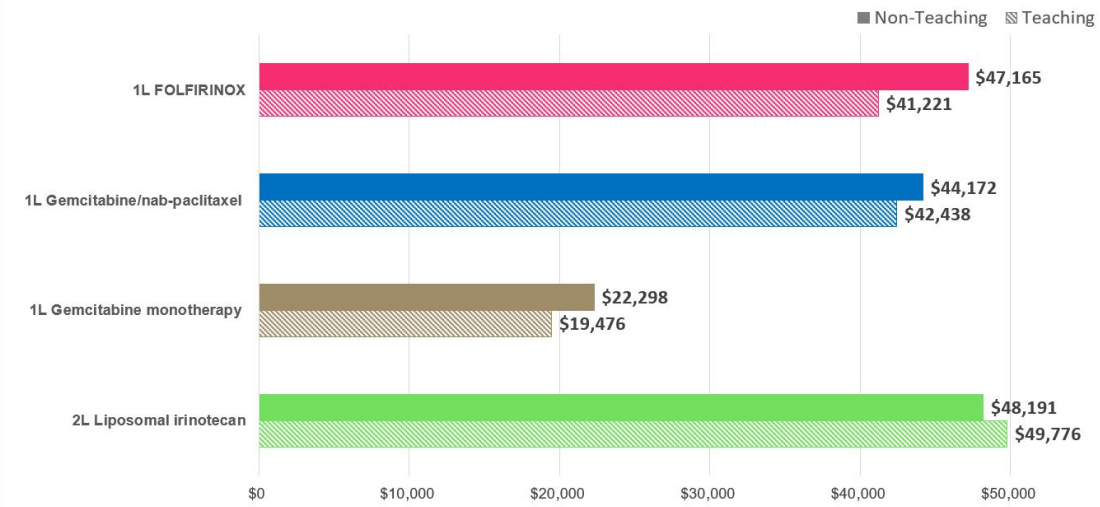
- Mean total cost of care (TCOC) was calculated as the average of the insurer paid amount excluding the patient cost-sharing per regimen/LOT.
- Mean hospital admissions were calculated as admissions per patient per regimen/LOT.
- Readmission rates were calculated as a percentage of total hospital admissions.
- We performed Tukey’s Honestly Significant Difference (HSD) pairwise statistical testing for each regimen/LOT at 95% level of significance.

RESULTS

- We identified 7,594 and 4,959 patients receiving chemotherapy at teaching and non-teaching hospitals, respectively.

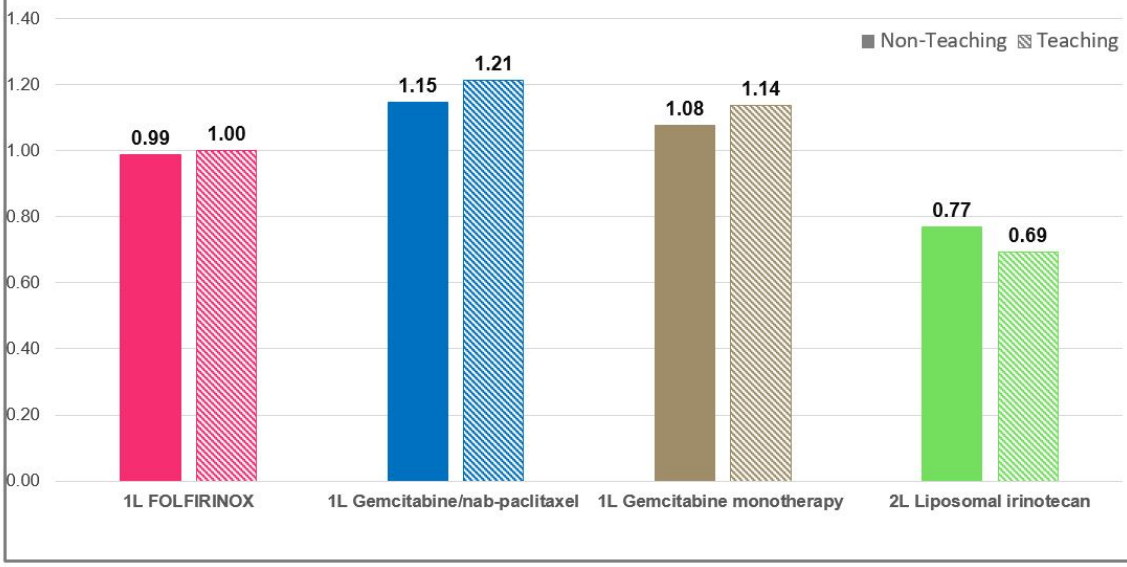
- There were no significant differences in TCOC, mean hospital admissions, or readmission rates between teaching and non-teaching hospitals.

Figure 1. Mean Total Cost of Care Per Patient Receiving Chemotherapy at Teaching Hospitals vs. Non-Teaching Hospitals



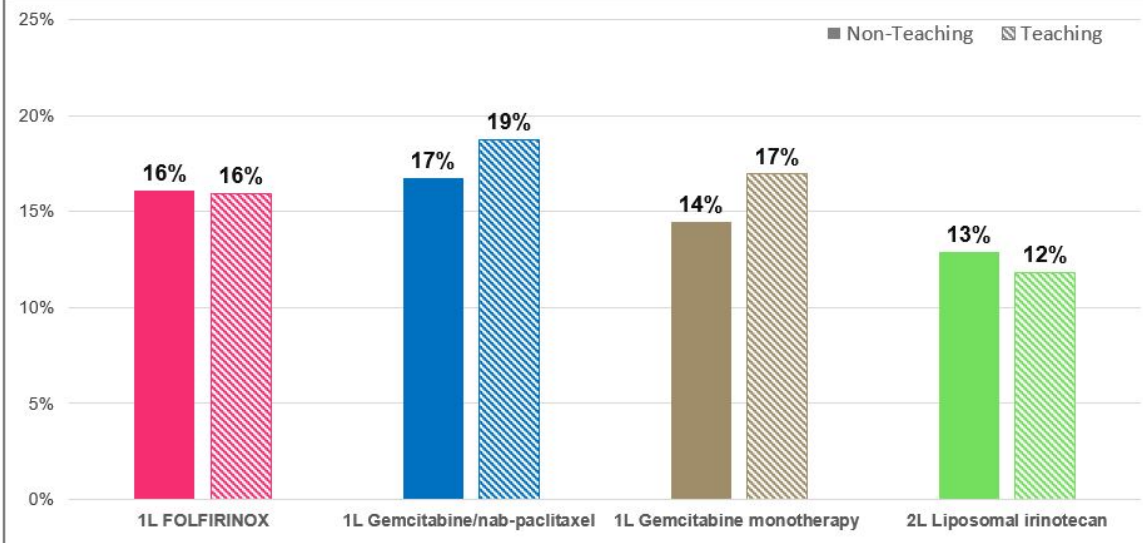
- In both cohorts, patients receiving 1L gemcitabine monotherapy had the lowest TCOC (teaching: $19,476*, non-teaching: $22,298*), while patients receiving 2L liposomal irinotecan had the highest (teaching: $49,776*, non-teaching: $48,191). **[Figure 1]**

Figure 2. Mean Admissions Per Patient Receiving Chemotherapy at Teaching Hospitals vs. Non-Teaching Hospitals



- In both cohorts, 2L liposomal irinotecan had the lowest mean hospital admissions (teaching: 0.69*, non-teaching: 0.77); while 1L gemcitabine/nab-paclitaxel had the highest (teaching: 1.21, non-teaching: 1.15). **[Figure 2]**

Figure 3. Mean Readmissions Per Patient Receiving Chemotherapy at Teaching Hospitals vs. Non-Teaching Hospitals



- Patients receiving 2L liposomal irinotecan also had the lowest readmission rates (teaching: 12%, non-teaching: 13%); while patients receiving 1L gemcitabine/nab-paclitaxel had the highest (teaching: 19%, non-teaching: 17%). **[Figure 3]**

Values with an * indicate statistical significance at $\alpha = 0.05$.

CONCLUSIONS

Despite teaching hospitals receiving add-on payments (in the form of IME adjustments, which are not reflected in this study[3]), there were no consistent differences in TCOC or utilization between teaching and non-teaching hospitals.

LIMITATIONS

The data analyzed included the 2016-2018 Medicare FFS population. Analysis of different populations or time periods may yield different results. Our study used claims data and not electronic health records (EHRs), so we could not control for clinical covariates. Patient characteristics and regimen performance might influence which regimens patients receive. We did not adjust TCOC or utilization for LOT durations. We did not study whether liposomal irinotecan-based therapy patients received concomitant 5FU or prior gemcitabine-based therapy.

DISCLOSURES

Author Contributions Substantial contributions to study conception/design, or acquisition/analysis/interpretation of data: [HL, ST, GD, PC, GK]; Drafting of the publication, or revising it critically for important intellectual content: [HL, ST, GD, PC, GK]; Final approval of the publication: [HL, ST, GD, PC, GK].

Disclosures [HL, ST, GD]: Employees of Milliman and received consulting fees from Ipsen. [PC] is employed by Ipsen and owns Ipsen stock. [GK] is employed by George Washington University and received consulting fees from Ipsen.

ABSTRACT

OBJECTIVES: To compare total cost of care (TCOC) and utilization for Medicare FFS patients (pts) with metastatic pancreatic cancer (m-PANC) treated at teaching or non-teaching hospitals, by NCCN® Category 1 regimen.

METHODS: We identified pts with m-PANC using ICD-9/10 diagnosis codes in the 2016-18 Medicare Parts A/B/D 100% Research Identifiable Files. Study pts had 2+ claims with a pancreatic cancer diagnosis and Medicare FFS coverage for 6 months pre- and 3 months post-metastasis diagnosis. Teaching hospitals were identified using CMS Fiscal Year IPPS Final Rule and Correction Notices. Pts were attributed to teaching or non-teaching hospitals based on plurality of chemotherapy claims. TCOC was the sum of mean paid services by the insurer per line of therapy. We calculated mean rates of hospital admissions (admits/pt) and readmissions. Study pts were treated with NCCN® Category 1 regimens: 1L gemcitabine monotherapy (gem-mono), 1L gemcitabine/nab-paclitaxel (gem-nab), 1L FOLFIRINOX (FFX), and 2L liposomal irinotecan-based regimen (Nal-IRI).

RESULTS: We identified 7,594 and 4,959 pts in teaching and non-teaching cohorts, respectively. There were no significant differences in TCOC, admits/pt, or readmissions between teaching and non-teaching hospitals. In both cohorts, gem-mono had the lowest TCOC (teaching: $19,476, P<.05; non-teaching: $22,298, P<.05), while Nal-IRI had the highest (teaching: $49,776, P<.05; non-teaching: $48,191, P>.05). In both cohorts, Nal-IRI had the lowest admits/pt (teaching: 0.69, P<.05; non-teaching: 0.77 P>.05) and readmissions (teaching: 12%, P>.05; non-teaching: 13%, P>.05) while gem-nab had the highest admits/pt (teaching: 1.21, P>.05; non-teaching: 1.15, P>.05) and readmissions (teaching: 19%, P>.05; non-teaching: 17%, P>.05).

CONCLUSION: Despite teaching hospitals receiving add-on payments, there were no consistent differences in TCOC between teaching and non-teaching hospitals. Additionally, admits/pt and readmissions by regimen were similar among cohorts. However, across cohorts TCOC was lowest for gem-mono and highest for Nal-IRI and admits/pt and readmissions were lowest for Nal-IRI and highest for gem-nab.

REFERENCES

1. Definition of a Teaching Hospital. Code of Federal Regulations. Code tit. 42, § 403.902 (1996).

2. Oncology Care Models Initiating Therapies List. Center for Medicare & Medicaid Innovation (CMS Innovation Center). Accessed on November 3rd, 2020. Available at: https://innovation.cms.gov/innovation-models/oncology-care

3. Indirect Medical Education (IME). Centers for Medicare and Medicaid Services Accessed on November 3, 2020. Available at: https://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/Indirect-Medical-Education-IME