

"A study on minimizing discarded chemotherapy drugs and financial consequences for Medicare part B in USA healthcare system."

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TABLE OF CONTENTS

S. no.	Chapter	Slide no.
1	Introduction	3-4
2	Research problem	5
3	Operational definitions	6
4	Literature review	7-9
5	Research question	10
6	Objective	10
7	Hypothesis	10
8	Materials & methods	11-17
9	Findings & discussion	18-44
10	Conclusions	45
11	Recommendations	46
12	References	47
13	Thank You slide	48

INTRODUCTION

A significant increase in the number of older adults in the United States is projected in the coming decades.

Older adults, defined as people aged 65 years and older, possess greater cancer incidence and mortality rates compared to younger people.

Approximately 60% of all cancers occur in the older adult population, resulting in an incidence rate that is 10 to 11 times higher than in the younger population.

The risk of developing cancer is 8%–9% in people aged 40–59, with a dramatic increase in risk of 20%–30% in people older than 60 years of age.

Additionally, cancer mortality rates are higher for older adults, with approximately 70% of all cancer deaths occurring in people older than 65.



CMS & Medicare part B

Centers for Medicare and Medicaid Services

The Centers for Medicare and Medicaid Services (CMS) provides health coverage to more than 100 million people through Medicare, Medicaid, the Children's Health Insurance Program, and the Health Insurance Marketplace. The CMS seeks to strengthen and modernize the Nation's health care system, to provide access to high quality care and improved health at lower costs.

Medicare part B

Medicare is a health insurance plan for:

- Individuals over the age of 65.
- people with specific disabilities under the age of 65.
- All ages of individuals with end-stage renal disease, which results in permanent kidney failure and calls for dialysis or a kidney transplant.

Outpatient care and doctor visits are part of Medicare part B. Additionally, it includes some home health care services and limited physical and occupational therapy services, both of which are not covered by any other part of programme.



Research problem

Discarded units of chemotherapy drugs

- There is a significant waste of costly cancer medications, which has an impact on patients' finances.
- Even though reducing waste in healthcare sector is crucial, no one has considered the waste that can result from discarding of expensive chemotherapy drugs being packaged in quantity more than required.
- This is especially true for medications that come in single dose containers and whose dosage is determined by the weight of patient or size of body.
- Since individuals have different sized body and are not likely to fit the amount of drug in vial, there is roughly constantly some remaining over once these drugs are opened.
- Now, since the remaining drug still needs to be paid for even if it is thrown away, drug manufacturers can artificially raise the amount of dosage they sell per treated patient relative to typically required dosage.



Operational Definitions

HCPCS code

Collection of standardized codes that represent medical procedures, supplies, products, and services. The codes are used to facilitate the processing of health insurance claims by Medicare and Medicaid.

J-codes

HCPCS code issued by CMS, which consist of a letter and four numbers and represent the medication and total dosage.

Total Medicare allowed amount

Medicare allowed amounts includes the amount Medicare pays, the deductible and coinsurance amounts that the beneficiary is responsible for paying, and any amounts that a third party is responsible for paying.



Literature review

Authors name and Year	Title	Methodology	Results
“ <u>Caleb Scheckel</u> , <u>Aakash Desai</u> , <u>Chelsea Jensen</u> , <u>Jacob Orme</u> , <u>Joshua Pritchett</u> , <u>Amit Mahipal</u> , <u>Nandita Khera</u> , <u>Ronald S. Go</u> (2022) ¹ ”	“Medicare expenditures for discarded oncology therapies”	Retrospective sampling technique was used on database to extract the samples with discarded units and therapies with high percentage of waste was identified.	• Medicare costs would have decreased by a median amount of \$153 million annually if the legislation had been applied early. • Strategies to reduce discarded units could result in significant cost savings and promote health equity in regions having trouble accessing these medications.
“Trovato A, Tyler LS, Nickman NA, Findlay R. (2022) ² ”	“Interventions to reduce waste and improve billing compliance with medications in single-dose vials”	Mapping of process was done from order entry to claims process and to identify drug waste, process map was used for three drugs of elevated risk of redundant waste.	• The study was done to incorporate elements in the electronic health records that would help in lowering unjustified drug waste for outpatient patients using vials of single amount. • The institute decreased drug waste and made financial savings by using a grouper and dose rounding.

Authors name and Year	Title	Methodology	Results
“Shah V, Spence A, Bartels T, Betcher J, Soefje S. (2022) ³ ”	“Decreasing drug waste, reducing drug costs, improving workflow efficiency through the implementation of automated chemotherapy dose rounding rules in the electronic health record system.”	Systemic literature review was done to develop a technique to bring the dose to the nearest vial size.	• This study was conducted to integrate new techniques in the electronic health record, to mitigate drug discard and cost. • The results were positive, and the clinic was able to save large number of vials and thus reduce expenses based on the dose rounding process.
“ <u>Ya-Chen T. Shih</u> , <u>Ying Xu</u> , <u>Hui Zhao</u> , <u>James C. Yao</u> (2020) ⁴ ”	“Financial burden of discarded weight-based antineoplastic drugs to payers and patients in the private insurance market.”	From their claims data base, identification of patients was done on weight-based antineoplastic drugs. Using it, recommended dose and discarded percentage was calculated, and beta-regression technique applied to investigate factors associated with discarded percentages.	• The findings of the study show that payers were heavily burdened financially as a result of cancer drugs disposal. • The study also showed that private insured patients had a modest out of pocket expenditure, where only approximately five percent paid more than \$400 for wasted drugs.

Authors name and Year	Title	Methodology	Results
“Lien K, Cheung MC, Chan KK. (2016) ⁵ ”	“Overspending driven by oversized single dose vials of cancer drugs.”	Typical doses calculated based on patient weights and skin area and amount of costs related to discarded units examined.	• This study looked at how often financial assessments of current parenteral therapy for hematologic malignancies utilized drug wastage modelling. • One of the vital findings of the study was examination of discrepancy between available vial sizes and frequently recommended dose of a particular cancer drug.

Research Question

1. What is the extent of discarded chemotherapy drugs in Medicare part B?



Hypothesis

- H_0 (Null hypothesis) – The extent of discarded drugs in chemotherapy treatments for Medicare part B is negligible or within an acceptable range.
- H_1 (Alternative hypothesis) – The extent of discarded drugs in chemotherapy treatments for Medicare part B is significant and exceeds an acceptable range.

Objective

- Analyzing the current spending trend of chemotherapy drugs in Medicare part B between 2017-2021
- Determining the extent of discarded drugs in chemotherapy treatments for Medicare part B



Materials & methods

Study Design : Analytical observational study design

Study Setting :

The study setting is based on USA healthcare system and the data comes from claims data which deals with claims involving outpatient care and doctor visits, which are part of Medicare part B. Additionally, it includes some home health care services and limited physical and occupational therapy services, both of which are not covered by any other part of programme.

1] Part B Discarded Drug Units dataset

The data comes from claims data for drugs that were administered in doctors' offices and other outpatient settings and paid through the Medicare part B program.

2] Medicare part B Spending by Drug dataset

This dataset is based on information gathered from CMS administrative claims data for Medicare beneficiaries enrolled in the Part B program.

Materials & methods

Study population :

The study population is based in USA. The data deals in health insurance plan for:

- Individuals over the age of 65.
- people with specific disabilities under the age of 65.
- All ages of individuals with end-stage renal disease, which results in permanent kidney failure and calls for dialysis or a kidney transplant.

1] Part B Discarded Drug Units dataset

Inclusion criteria :

Medicare Billing Code (HCPCS Code), Brand Name, Generic Name, Total Medicare Allowed Amount, Total Allowed Amount for Units Administered, Total Allowed Amount for Units Discarded, Administered Units as % of Total Allowed Amount, Discarded Units as % of Total Allowed Amount from claims data.

Exclusion criteria:

Other indicators in the claims data were excluded.

2] Medicare part B Spending by Drug dataset

Inclusion criteria :

Medicare Billing Code (HCPCS Code), Brand Name, Generic Name, Year, Total Spending, Total Dosage Units, Total Claims, Total Beneficiaries, Average Spending Per Dosage Unit, Average Spending Per Claim, Average Spending Per Beneficiary from CMS administrative claims data

Exclusion criteria:

Other indicators in the CMS administrative claims data were excluded.

Materials & methods

Study tools:

- Questionnaire
- Research articles
- CMS datasets

Duration of study:

3 months [1st March 2023 to 31st May 2023]

Sample size:

Part B Discarded Drug Units report for year 2021 – Latest updated year

Medicare part B Spending by Drug dataset [2017-21] – Latest updated data

Sampling technique:

Convenience sampling

Materials & methods

Data collection procedure:

Primary Research:

Data collected through telephonic interview to understand the payer perspective on discarded chemotherapy drugs.

Secondary Research:

- The Drug dataset from source provided information on spending for medications given to Medicare part B enrollees in physician offices and outpatient settings by doctors and other healthcare providers.
- The dataset focused on avg spent per dosage unit and changes in avg spent per dosage unit over time.
- The other report from source provided spending information for Medicare part B drugs claims that were identified as drugs which were discarded.

Materials & methods

Data Analysis Plan:

Primary research

- Through telephonic interview, insights and opinions based on experience and perspective of respondents from payer fraternity was taken to understand the challenges and potential solutions related to the reimbursement and waste issues associated with Medicare part B drugs.
- The survey respondents in primary research analysis represented national or regional health plans, including 51 commercial payers, 34 managed care organizations, 34 preferred provider organizations and 31 pharmacy benefit managers. (n=152).

Secondary research

- The data analysis plan had been divided into 2 essential parts.
- The first part dealt with analysis of Medicare part B by Drug dataset to investigate the trends of usage of chemotherapy drug.
- The analysis was done on parameters like count, total spending, avg spent per dosage units and percentage change of the mentioned parameters.
- The above-mentioned parameters were isolated from the dataset by the identifier “J-codes” in “HCPCS codes” column for each year from 2017-2021 and compared for each of the “J-codes” using appropriate statistical techniques.
- The second part dealt with analysis of source report to gain insight into the percentage of discarded chemotherapy drugs and the total spending of discarded drugs which could be potentially saved.

Secondary research cont.

- So, two types of analysis were performed in this.
- The first analysis was conducted to understand the number of chemotherapy drugs which had a discarded unit of a certain percentage and for this, we divided total Medicare allowed amount for discarded units by total Medicare allowed amount. From this, discarded percentage was calculated for all the chemotherapy drugs which had a discarded dose amount.
- In the second analysis, all the “J-codes” relating to chemotherapy drugs were isolated and arranged according to total Medicare allowed amount of the discarded drugs from highest to lowest.
- Total of 100 chemotherapy drugs out of 125 had discarded units. Then, for each of 10 chemotherapy drugs, a category was assigned. Therefore, a total of 10 category were established. For each category, total Medicare allowed amount for discarded units was calculated in decreasing order, cumulative calculated and cumulative percentage calculated.
- Based on the above-mentioned process, a pareto chart was prepared and analyzed.
- The report was examined with the aim to identify opportunities for optimizing drug utilization, reducing waste, and maximizing the potential value of discarded chemotherapy drug units.
- Through these analyses, appropriate statistical techniques were utilized, and software was used to examine the datasets, identify trends, and draw meaningful conclusions.

Materials & methods

Ethical considerations:

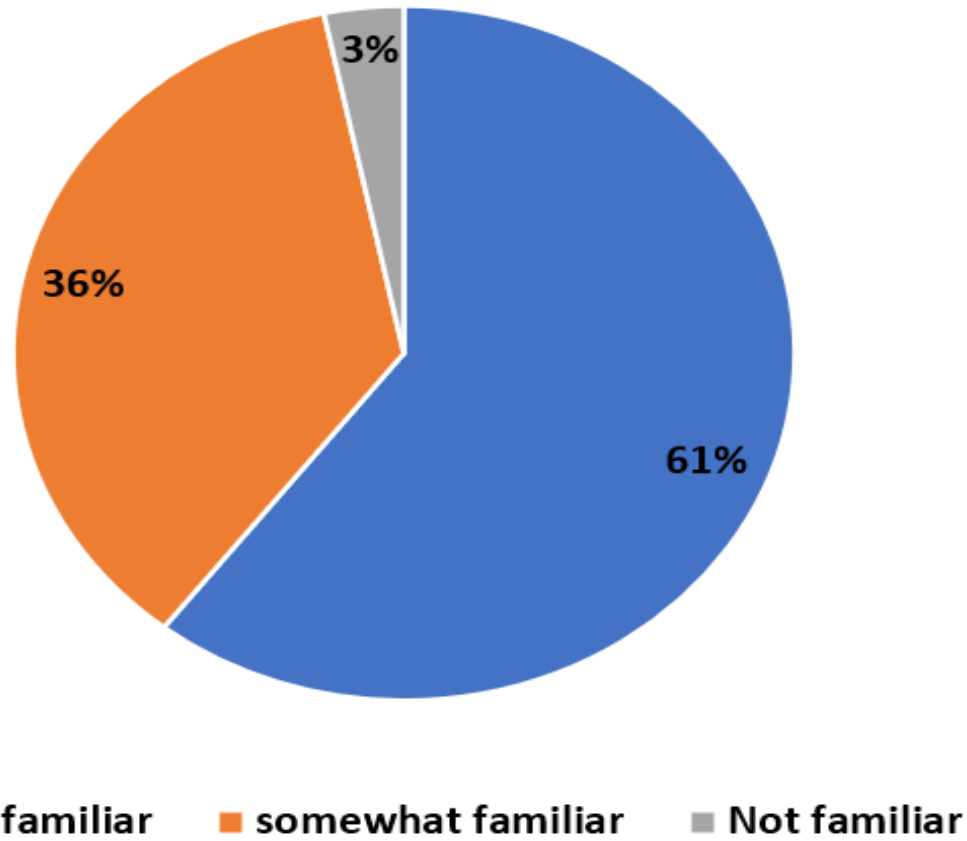
- Protect privacy and confidentiality of all interviewed personnel.
- Protect privacy and confidentiality of beneficiaries in the data provided.
- Data file cleaned of all direct identifiers.

FINDINGS & DISCUSSION



Primary research findings

Percentage of respondents familiar with drugs administered by physician in Medicare part B



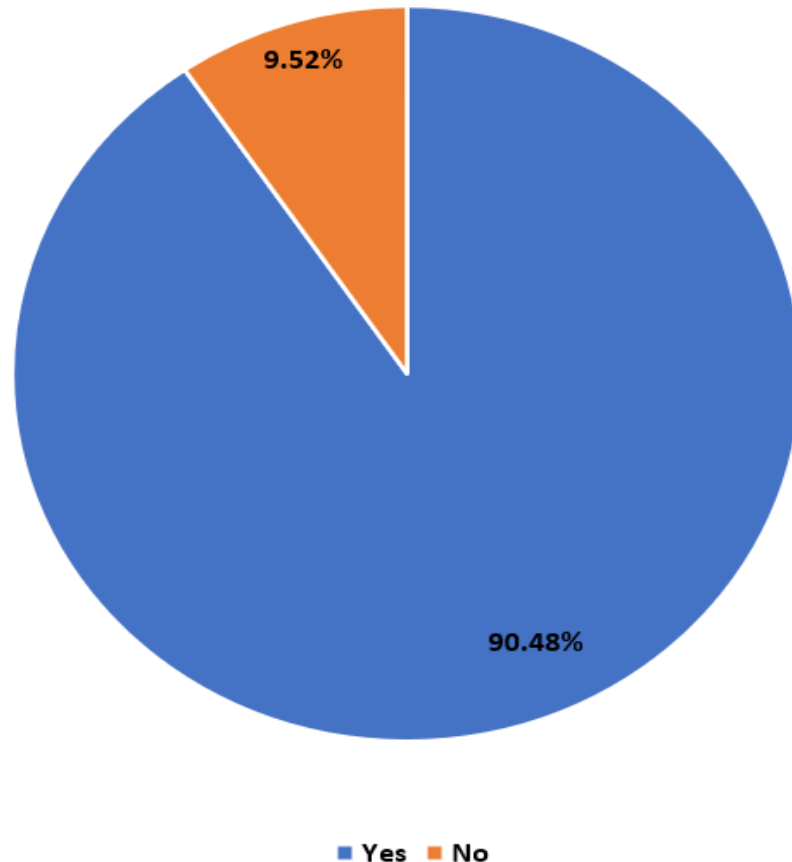
- 92 respondents out of 152 interviewed respondents were very familiar with Medicare part B drugs which formed 61% of total interviewed respondents.
- 55 respondents out of 152 interviewed respondents were somewhat familiar with Medicare part B drugs which formed 36% of total interviewed respondents.
- 5 respondents out of 152 interviewed respondents were very familiar with Medicare part B drugs which formed 3% of total interviewed respondents.

Familiarity with physician-administered drugs in Medicare part B	Category leading to more Medicare part B spending	Respondents
Very familiar [n = 92]	Drugs administered by injection	45
	Chemotherapy drugs	47
	Clotting factor drugs	0
	Miscellaneous drugs	0
	Inhalational solutions	0
	Immunosuppressive drugs	0
Somewhat familiar [n = 55]	Drugs administered by injection	27
	Chemotherapy drugs	24
	Clotting factor drugs	2
	Miscellaneous drugs	0
	Inhalational solutions	1
	Immunosuppressive drugs	1
Not familiar [n = 5]	Drugs administered by injection	1
	Chemotherapy drugs	1
	Clotting factor drugs	0
	Miscellaneous drugs	1
	Inhalational solutions	0
	Immunosuppressive drugs	2

Familiarity with physician-administered drugs in Medicare part B	Category leading to more spending on Medicare part B for each dose	Respondents
Very familiar [n = 92]	Drugs administered by injection	35
	Chemotherapy drugs	57
	Clotting factor drugs	0
	Miscellaneous drugs	0
	Inhalational solutions	0
	Immunosuppressive drugs	0
Somewhat familiar [n = 55]	Drugs administered by injection	19
	Chemotherapy drugs	33
	Clotting factor drugs	1
	Miscellaneous drugs	0
	Inhalational solutions	1
	Immunosuppressive drugs	1
Not familiar [n = 5]	Drugs administered by injection	1
	Chemotherapy drugs	1
	Clotting factor drugs	0
	Miscellaneous drugs	1
	Inhalational solutions	1
	Immunosuppressive drugs	1

Primary research findings

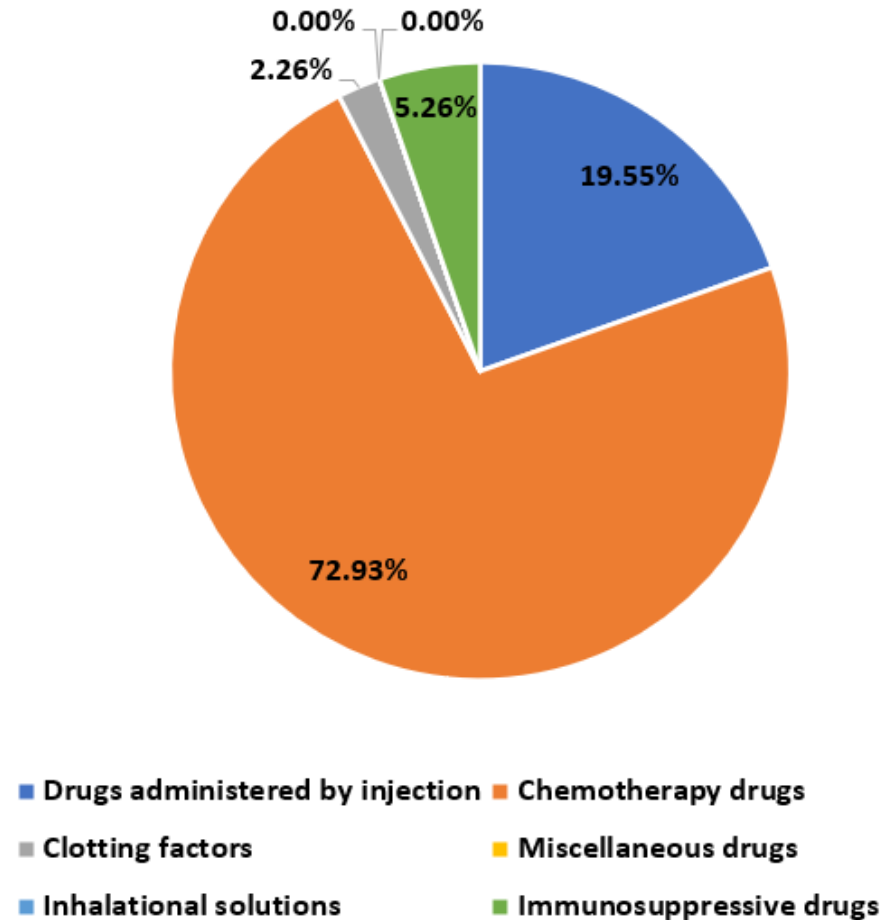
Percentage of Respondent having awareness of Medicare part B drugs being discarded leading to financial consequences for patients



- The respondents under “Not familiar” category were removed from further analysis since they would not be able to contribute significantly to the study.
- 133 respondents out of 147 interviewed respondents, forming 90.48% were aware of financial consequences to patients due to discarding of Medicare part B drugs.
- 14 respondents out of 147 interviewed respondents, forming 9.52% were aware of financial consequences to patients due to discarding of Medicare part B drugs.

Primary research findings

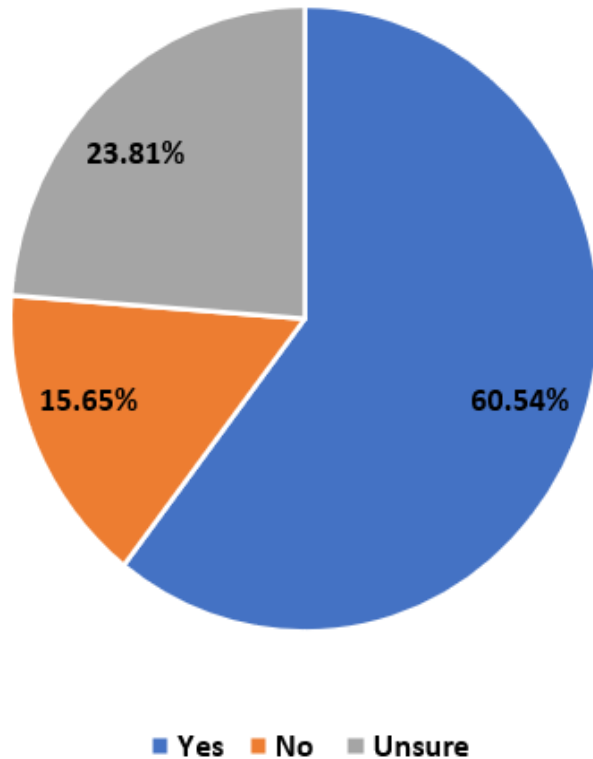
Category leading to Medicare part B discarded units wastage according to respondents



- The respondents under “Not familiar” category were removed from further analysis since they would not be able to contribute significantly to the study.
- 97 respondents out of 147 interviewed respondents, forming 72.93% responded that chemotherapy drugs” category led to highest discarded units’ wastage of Medicare part B drugs, while 26 respondents out of 147 interviewed respondents, forming 19.55% responded that “Drugs administered by injection” category led to highest discarded units’ wastage of Medicare part B drugs.
- Lastly, 10 respondents of 147 interviewed respondents, forming 7.52% responded that “Immunosuppressive drugs” and “Clotting factor drugs” category led to highest discarded units’ wastage of Medicare part B drugs.

Primary research findings

Percentage of respondent who feel need for stricter regulations or guidelines to ensure drug manufacturers provide appropriate packaging quantities based on patient needs



- The respondents under “Not familiar” category were removed from further analysis since they would not be able to contribute significantly to the study.
- 89 respondents out of 147 interviewed respondents, forming 60.54% felt that stricter regulations or guidelines should be followed to ensure drug manufacturers provided appropriate packaging quantities according to needs of patient, while 23 respondents out of 147 interviewed respondents, forming 15.65% felt that stricter regulations or guidelines should be followed to ensure drug manufacturers provided appropriate packaging quantities according to needs of patient
- Lastly, 35 respondents of 147 interviewed respondents were unsure about the same.

Primary research findings

Payer perspective on potential solutions	Answer	Respondent
Should reimbursement mechanisms or payment structures be revised to incentivize appropriate packaging quantities and reduce waste?	Yes	101
	No	3
	Unsure	43
Is there a need for increased collaboration between stakeholders to address the problem of discarded units of chemotherapy drugs?	Yes	119
	No	1
	Unsure	27

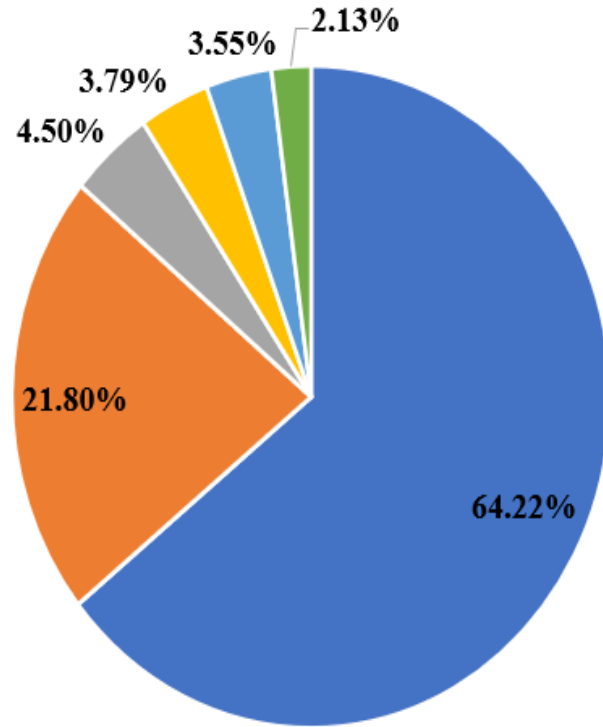
Secondary research findings

Drug category	Number [2017]	Number [2018]	Number [2019]	Number [2020]	Number [2021]
Drugs administered by injection	271	277	297	306	319
Chemotherapy drugs	92	95	107	113	125
Clotting factors	19	19	26	27	30
Immunosuppressive drugs	16	16	16	16	16
Inhalational solutions	15	15	15	16	16
Miscellaneous drugs	9	9	11	13	15
Grand Total	422	431	472	491	521

First data set

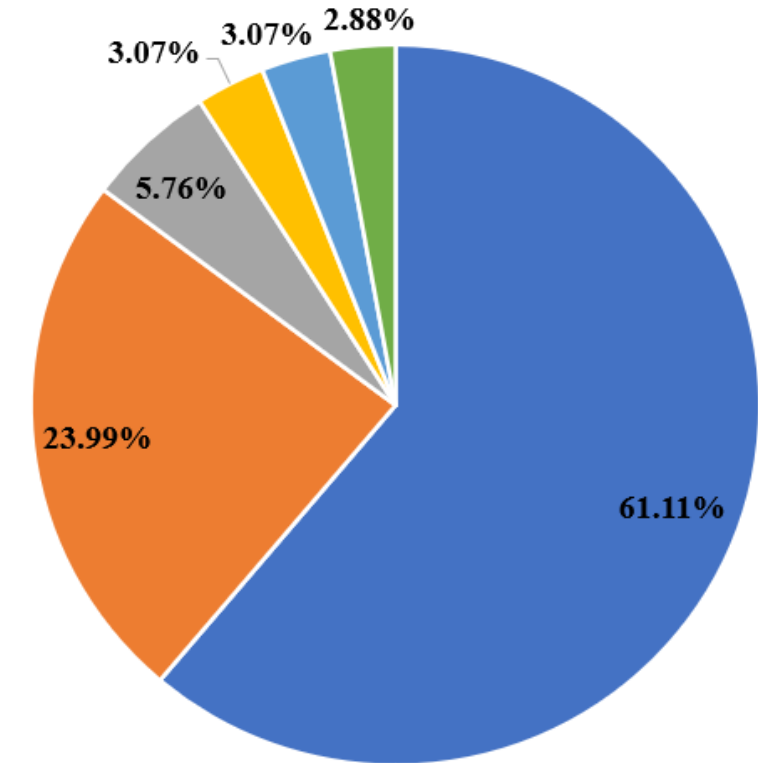
Secondary research findings

Count of each drug category in Medicare part B [2017]



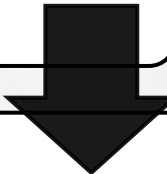
- Drugs administered by injection
- Chemotherapy drugs
- Clotting factors
- Inhalational solutions
- Immunosuppressive drugs
- Miscellaneous drugs

Count of each drug category in Medicare part B [2021]

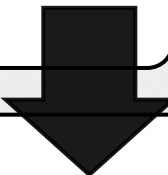


- Drugs administered by injection
- Chemotherapy drugs
- Clotting factors
- Inhalational solutions
- Immunosuppressive drugs
- Miscellaneous drugs

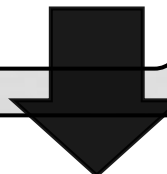
The first investigation into changes in the number of drugs in drug categories covered by Medicare part B shows that, from 2017 to 2021, the number of chemotherapy drugs has increased only little (percentage-wise) compared to other drug categories, likely as a result of the addition of new medications to the list each year.



It can be observed that among all the Medicare part B drugs, “chemotherapy drugs” category has increased marginally the most as compared to other drugs in part B from 2017 to 2021



As of 2017, there were 92 chemotherapy drugs in Medicare part B and formed approximately 22% of Medicare part B drugs but till 2021, 33 more chemotherapy drugs were added, and it now occupied approximately 24% of drugs in Medicare part B.

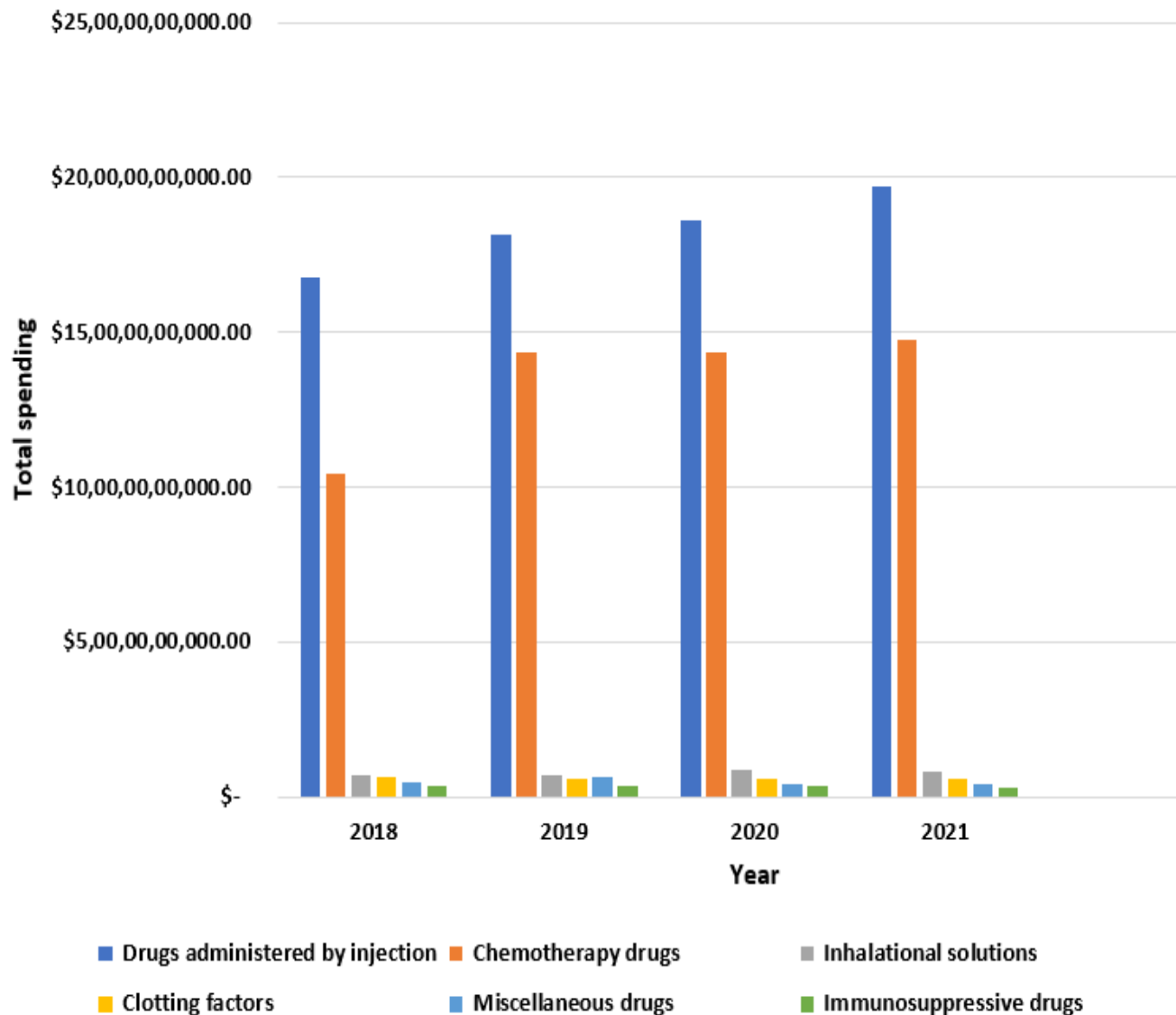


As of 2017, there were 271 drugs under “drugs administered by injection” category in Medicare part B and formed approximately 64% of Medicare part b drugs but till 2021, 48 more drugs were added in “drugs administered by injection” category and now occupied approximately 61% of drugs in Medicare part B.

Secondary research findings

Drug category	Total spending in dollars [2017 - 2021]				
	2017	2018	2019	2020	2021
Drugs administered by injection	15,50,29,10,874.98	16,76,61,44,939.81	18,13,97,77,347.04	18,61,52,66,592.05	19,70,93,13,365.94
Chemotherapy drugs	9,02,46,38,891.59	10,43,93,72,388.39	14,35,38,25,484.31	14,35,91,14,071.79	14,73,15,13,203.19
Inhalational solutions	72,78,16,740.18	72,68,39,941.27	71,46,28,739.73	85,18,69,595.63	83,07,47,015.08
Clotting factors	68,12,15,189.42	63,08,05,792.06	60,41,97,726.22	58,49,69,187.81	57,39,11,834.10
Miscellaneous drugs	50,91,04,060.56	47,18,54,767.74	62,32,84,322.84	39,37,10,218.08	42,24,26,684.49
Immunosuppressive drugs	34,17,68,441.42	38,54,52,465.96	37,86,02,237.65	37,72,70,535.47	32,25,10,883.10
Grand Total	26787454198	29420470295	34814315858	35182200201	36590422986

Total spent for drug categories from 2017-2021

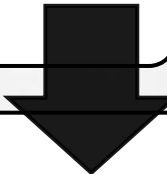


- It can be observed that among all the Medicare part B drugs, “Drugs administered by injection” category has the highest total spending among all the drugs from 2017 to 2021 and that is because of the maximum number of drugs in that category which we observed in the previous table and figures, where in 2017, there were 271 drugs under “Drugs administered by injection” category in Medicare part B and formed approximately 64% of Medicare part B drugs but till 2021, 48 more drugs were added in “Drugs administered by injection” category and now occupied approximately 61% of drugs in Medicare part B.
- So, the maximum total spending of “Drugs administered by injection” is because of more drugs in its category and thus more usage by patients but on further analysis of percentage wise change in spending on a yearly basis, another result has been investigated which has been shown in further slides.

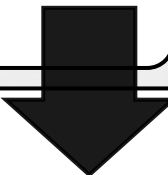
Secondary research findings

Drug category	Percentage change in total spending from 2017 to 2021			
	% change (2017 to 2018)	% change (2017 to 2019)	% change (2017 to 2020)	% change (2017 to 2021)
Drugs administered by injection	8%	17%	20%	27%
Chemotherapy drugs	16%	59%	59%	63%
Inhalational solutions	0%	-2%	17%	14%
Clotting factor drugs	-7%	-11%	-14%	-16%
Miscellaneous drugs	-7%	22%	-23%	-17%
Immunosuppressive drugs	13%	11%	10%	-6%
Grand Total	10%	30%	31%	37%

It can be observed that among all the Medicare part B drugs, “Chemotherapy drugs” category have increased percentagewise on a year-to-year basis the most, as compared to other drugs in part B.



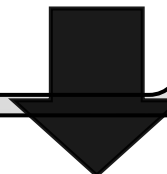
From 2017 to 2021, Chemotherapy drugs increase 63% with a constant growth rate and this can be correlated with increase in number of drugs for the “chemotherapy drug” category.



This percentage change can be correlated with two major aspects in USA healthcare system :

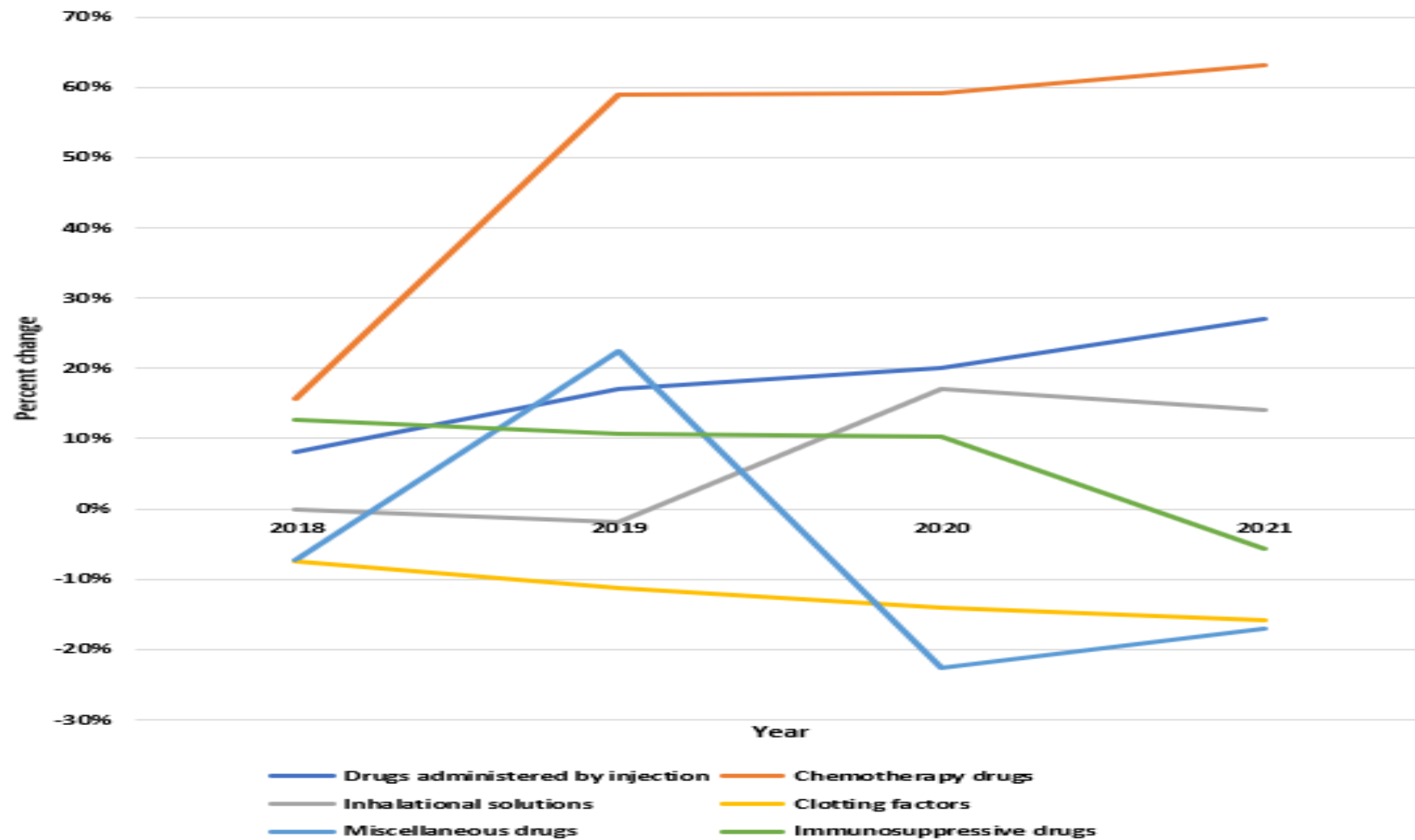
Increase in prevalence rate of cancer among elderly people (above 65 years) from the same time period.

Increase in average annual cost of new cancer drugs by 53% from \$185,000 to more than \$283,000.



“Drugs administered by injection” category and “Inhalational solutions” solution are the other category that have grown constantly on a year-to-year basis but less than “Chemotherapy drugs” category.

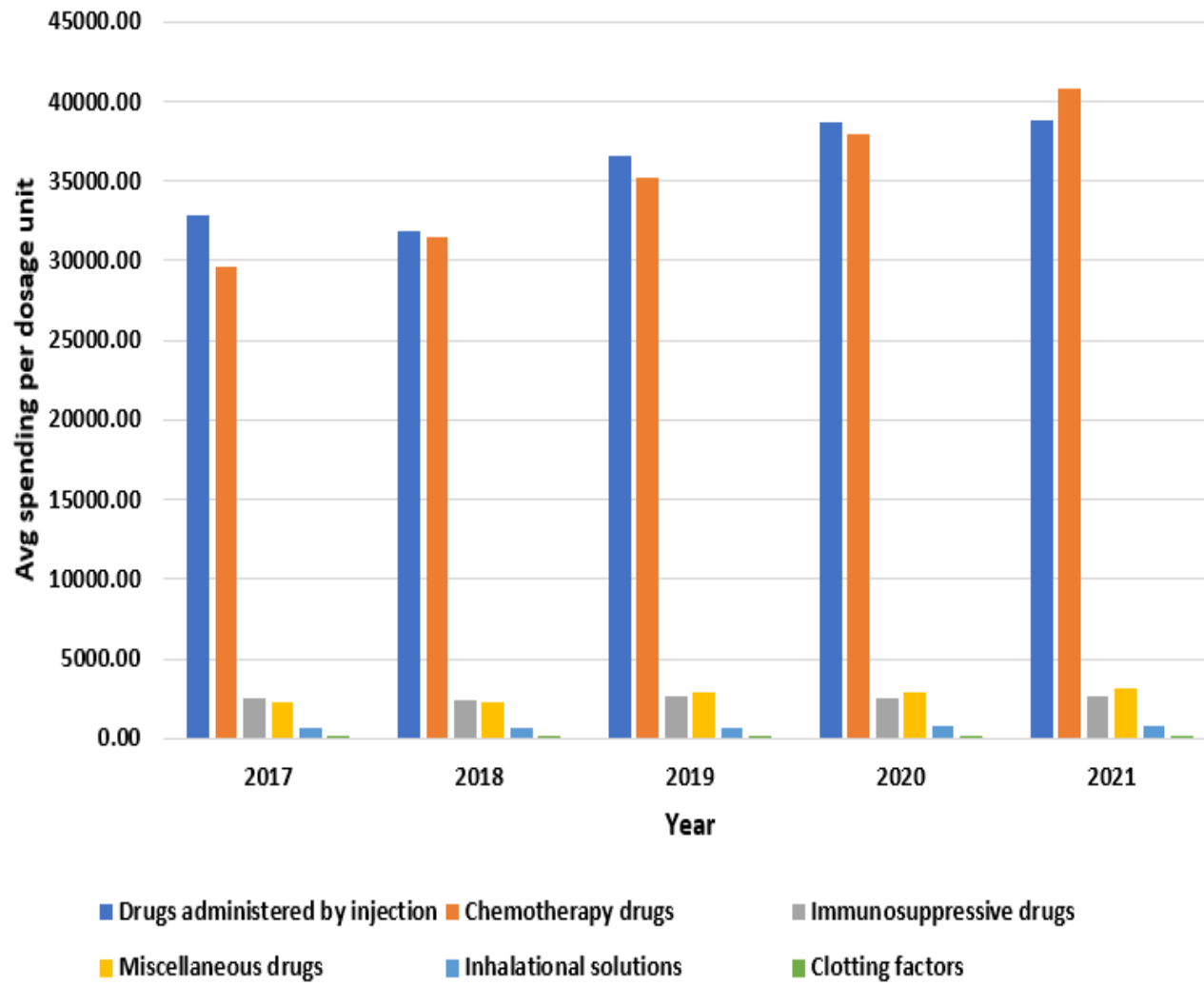
Percent change in total spending for drug categories from 2017-2021



Secondary research findings

Drug category	Average spending per dosage unit in dollars [2017-2021]				
	2017	2018	2019	2020	2021
Drugs administered by injection	32868.53	31853.57	36588.84	38650.04	38800.80
Chemotherapy drugs	29665.49	31469.16	35161.62	37926.44	40793.64
Immunosuppressive drugs	2467.75	2378.91	2652.89	2552.87	2581.70
Miscellaneous drugs	2292.72	2238.37	2893.62	2882.04	3123.15
Inhalational solutions	641.97	682.44	708.72	741.38	788.36
Clotting factor drugs	150.46	83.80	81.27	81.07	89.18

Average spending per dosage unit for drug categories from 2017 -2021

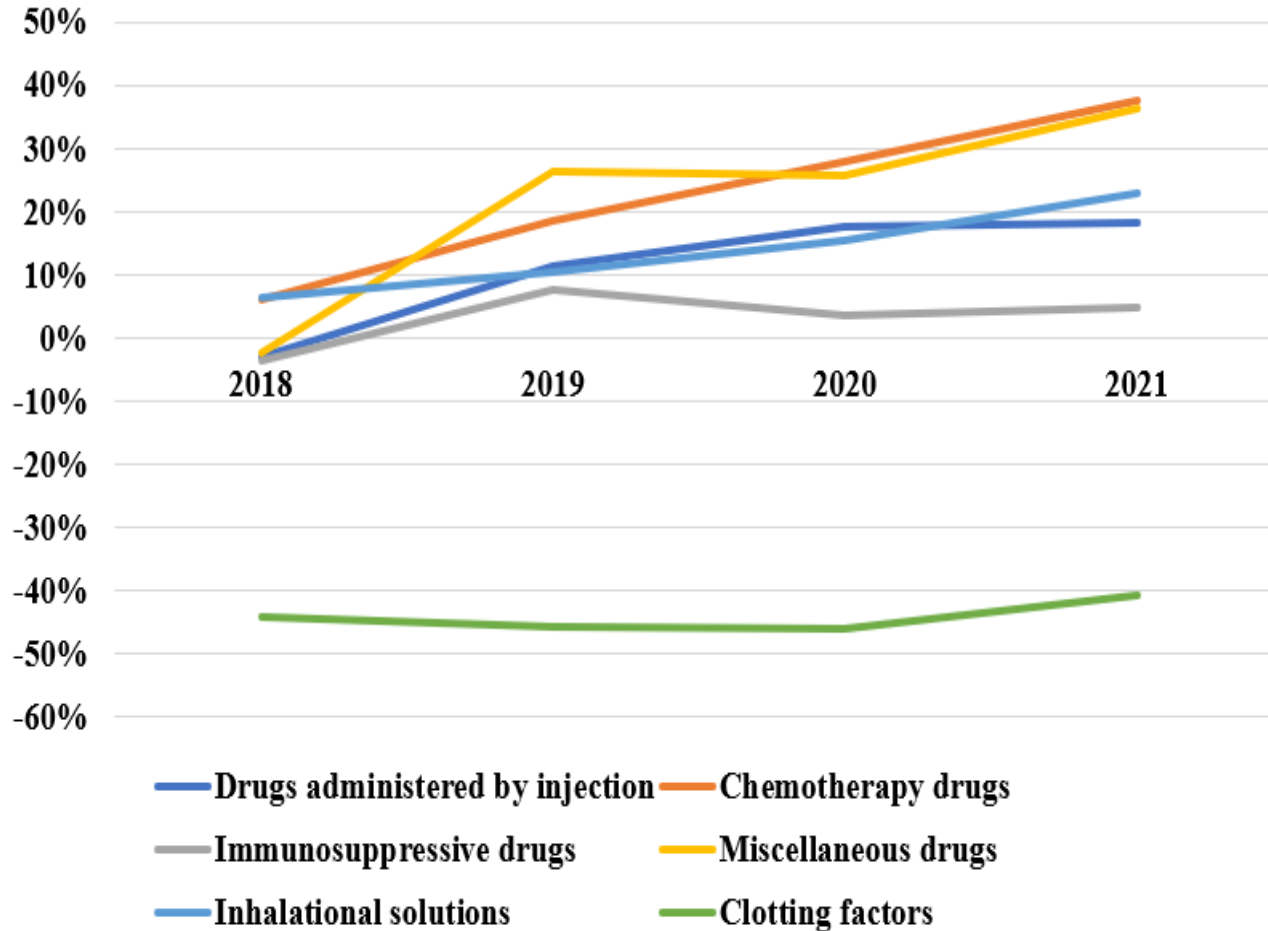


- Average spending per dosage unit was obtained by dividing total spending of each drug category by total dosage unit for each drug category.
- It can be observed that “Drugs administered by injection” category have the highest average spending per dosage unit of drugs from 2017 till 2020 but in 2021, “Chemotherapy drugs” category have the highest average spending per dosage of drugs.
- Rest other categories have very less average spending per dosage of drugs as compared to “chemotherapy drugs” category and “Drugs administered by injection” category.

Secondary research findings

Drug category	Percent change in Avg spent per dosage unit [2017-2021]			
	2018	2019	2020	2021
Drugs administered by injection	-3%	11%	18%	18%
Chemotherapy drugs	6%	19%	28%	38%
Immunosuppressive drugs	-4%	8%	3%	5%
Miscellaneous drugs	-2%	26%	26%	36%
Inhalational solutions	6%	10%	15%	23%
Clotting factor drugs	-44%	-46%	-46%	-41%

Percentage change in average spending per dose for drug categories from 2017-2021



- It can be observed that “Chemotherapy drugs” category have the highest average percentage change in spending per dosage unit of drugs from 2017 till 2021.
- Rest other categories have less percentage change in average spending per dosage of drugs as compared to “chemotherapy drugs” category, while clotting factor drugs have negative deviation for the same.

Secondary research findings

Chemotherapy drugs equal to or greater than 20% discarded units

HCPCS code	Description	Discarded units %
J9281	Mitomycin instillation	38%
J9262	Inj, omacetaxine mep, 0.01mg	31%
J9043	Cabazitaxel injection	29%
J9041	Inj., velcade 0.1 mg	27%
J9351	Topotecan injection	26%
J9044	Inj, bortezomib, 0.1 mg	22%
J9025	Azacitidine injection	22%
J9017	Arsenic trioxide injection	21%
J9065	Inj cladribine per 1 mg	20%
J9223	Inj. lurbinedectin, 0.1 mg	20%

Second data set – Analysis 1

Secondary research findings

HCPCS code	Discarded units as % of total allowed amount	Total Medicare allowed amount for discarded units
J9281	38%	\$ 10,039,643.24
J9262	31%	\$ 68,454.45
J9043	29%	\$ 42,721,955.58
J9041	27%	\$ 102,718,188.43
J9351	26%	\$ 125,455.90
J9044	22%	\$ 1,011,456.65
J9025	22%	\$ 8,293,968.79
J9017	21%	\$ 368,250.06
J9065	20%	\$ 91,449.10
J9223	20%	\$ 18,386,451.37
Grand Total		\$ 183,825,273.57

Secondary research findings

Chemotherapy drugs [$\geq 10\%$ and $< 20\%$] discarded units

HCPCS code	Description	Discarded units %
J9178	Inj, epirubicin hcl, 2 mg	19%
J9229	Inj inotuzumab ozogam 0.1 mg	18%
J9153	Inj daunorubicin, cytarabine	15%
J9027	Clofarabine injection	14%
J9264	Paclitaxel protein bound	14%
J9179	Eribulin mesylate injection	13%
J9307	Pralatrexate injection	13%
J9037	Inj belantamab mafodot blmf	12%
J9042	Brentuximab vedotin inj	12%
J9319	Inj romidepsin lyophil 0.1mg	12%
J9205	Inj irinotecan liposome 1 mg	12%
J9228	Ipilimumab injection	11%
J9269	Inj. tagraxofusp-erzs 10 mcg	10%
J9352	Injection trabectedin 0.1mg	10%
J9203	Gemtuzumab ozogamicin 0.1 mg	10%
J9263	Oxaliplatin	10%

Secondary research findings

HCPCS code	Discarded units %	Total Medicare allowed amount for discarded units
J9178	19%	\$ 1,880.20
J9229	18%	\$ 3,262,099.34
J9153	15%	\$ 828,995.40
J9027	14%	\$ 8,749.34
J9264	14%	\$ 48,142,886.28
J9179	13%	\$ 5,539,110.90
J9307	13%	\$ 2,884,364.03
J9037	12%	\$ 4,002,833.94
J9042	12%	\$ 20,144,555.44
J9319	12%	\$ 773,975.93
J9205	12%	\$ 6,863,427.15
J9228	11%	\$ 47,638,125.90
J9315	10%	\$ 2,392,123.98
J9269	10%	\$ 786,969.96
J9352	10%	\$ 931,677.80
J9203	10%	\$ 294,046.67
J9263	10%	\$ 388,283.62
Grand Total		\$ 144,884,105.88

Secondary research findings

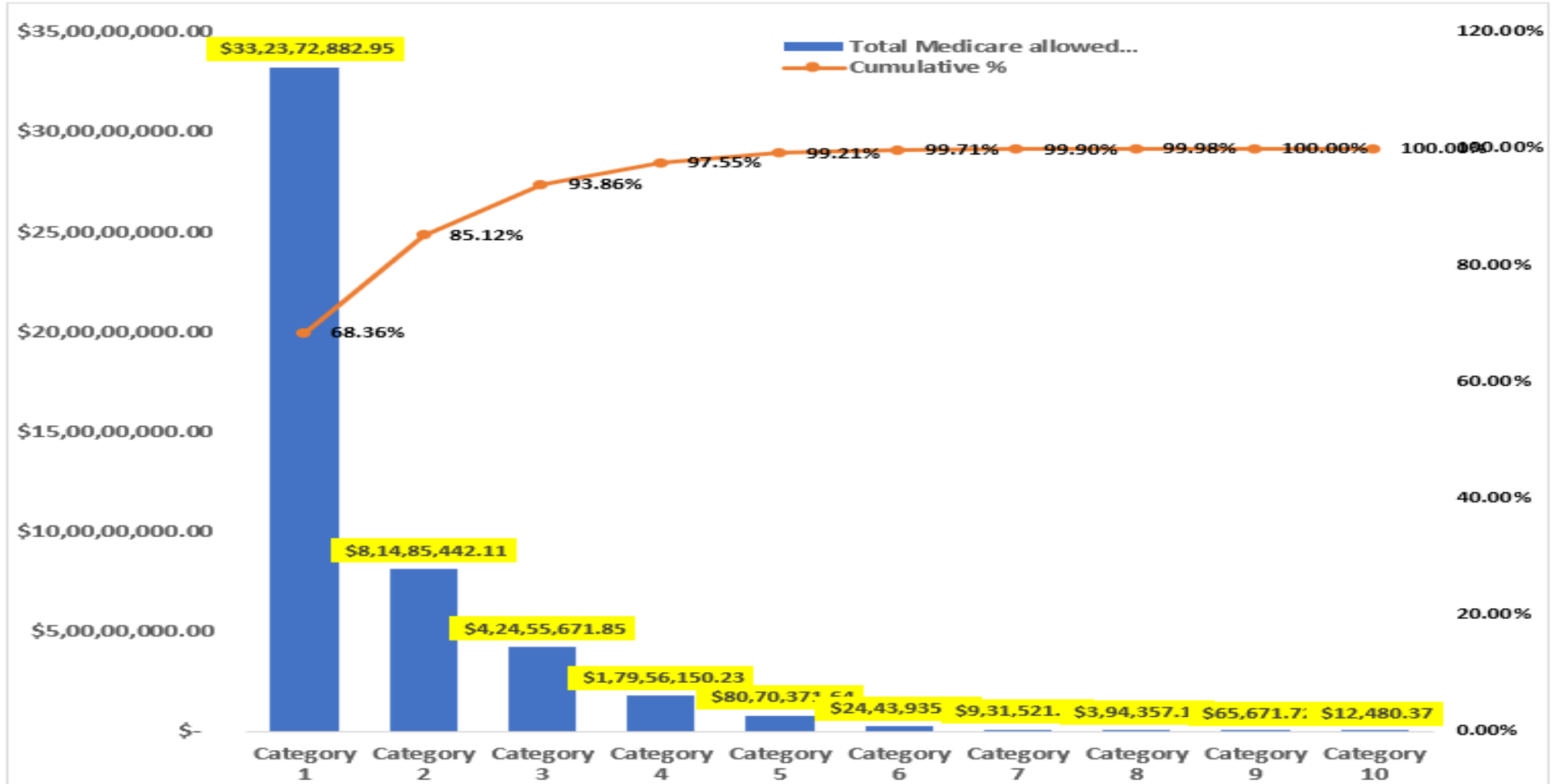
Category 1	Category 2	Category 3	Category 4	Category 5	Category 6	Category 7	Category 8	Category 9	Category 10
J9041	J9312	J9303	J9307	J9044	J9263	J9214	J9190	J9261	J9130
J9264	J9047	J9179	J9315	J9352	J9032	J9395	J9328	J9390	J9293
J9228	J9173	J9271	J9301	J9306	J9017	J9030	J9247	J9027	J9178
J9043	J9035	J9177	J9204	J9034	J9207	J9171	J9206	J9000	J9060
J9042	J9025	J9055	J9070	J9153	J9203	J9311	J9267	J9155	J9250
J9355	J9299	J9308	J9349	J9144	J9119	J9065	J9202	J9045	J9100
J9223	J9358	J9037	J9039	J9269	J9400	J9316	J9217	J9181	J9040
J9305	J9205	J9309	J9022	J9319	J9330	J9036	J9201	J9360	J9209
J9354	J9317	J9229	J9033	J9227	J9353	J9262	J9313	J9208	J9260
J9281	J9145	J9176	J9325	J9023	J9351	J9371	J9280	J9370	J8540

Second data set – Analysis 2

Secondary research findings

S.no.	Category	Total Medicare allowed amount for discarded units	Cumulative	Cumulative %
1	Category 1	\$ 33,23,72,882.95	332372883	68.36%
2	Category 2	\$ 8,14,85,442.11	413858325	85.12%
3	Category 3	\$ 4,24,55,671.85	456313997	93.86%
4	Category 4	\$ 1,79,56,150.23	474270147	97.55%
5	Category 5	\$ 80,70,371.64	482340519	99.21%
6	Category 6	\$ 24,43,935.25	484784454	99.71%
7	Category 7	\$ 9,31,521.37	485715975	99.90%
8	Category 8	\$ 3,94,357.12	486110333	99.98%
9	Category 9	\$ 65,671.72	486176004	100.00%
10	Category 10	\$ 12,480.37	486188485	100.00%

Secondary research findings



Conclusion

- ❖ From the study mentioned above, it can be concluded that **Chemotherapy drugs belongs to the most significant category in Medicare part B** due to its increase in number, percentage change in total spending, avg spent per dose and percentage change in avg spent per dose
- ❖ Hence, it becomes noteworthy when chemotherapy doses are discarded because of more than required amount of dose in the drug packaging and which in turn leads to financial consequences among patient and payer fraternity.
- ❖ So, analysis was done regarding the wastage and financial loss due to discarded units and it was concluded that total spending (patient + payer) due to discarded units pertaining to 10% or more, was **approximately \$ 328,709,379.**
- ❖ Also, the total spending (patient + payer) due to discarded units of all chemotherapy drugs was **approximately \$ 486,188,485.**
- ❖ From the result obtained, there is a serious need for increased collaboration between stakeholders to address the problem of discarded units of chemotherapy drugs and a reimbursement mechanism or payment structures should be revised to incentivize appropriate packaging quantities and reduce waste due to discarded Medicare part B drugs with a special focus on “chemotherapy drugs” category.

Recommendations

Vial sharing

Drug vial optimization

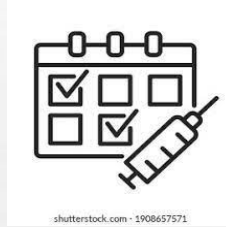
Dose banding

Dose rounding and dose capping

Change in federal laws with regards to drug manufacturers

Source - National Academies of Sciences, Engineering, and Medicine; Health and Medicine Division; Board on Health Care Services; Committee on Implications of Discarded Weight-Based Drugs; Nass SJ, Lustig TA, Amankwah FK, et al., editors. Medications in Single-Dose Vials: Implications of Discarded Drugs. Washington (DC): National Academies Press (US); 2021 Feb 25. 4, Efforts to Reduce Discarded Weight-Based Drugs. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK569386/>

DEMONSTRATION



J-code	First approved indication	Dose	Vial size available	Typical patient dose	Amount wasted	Estimated total cost of leftover drug
J9041	Myeloma	1.3 mg/m2	3.5 mg	2.2 mg	1.3 mg	\$102.7 Million

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*Thank
you!*

