Myths and Realities of Medication Waste in Medicare Part D

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I. Executive Summary

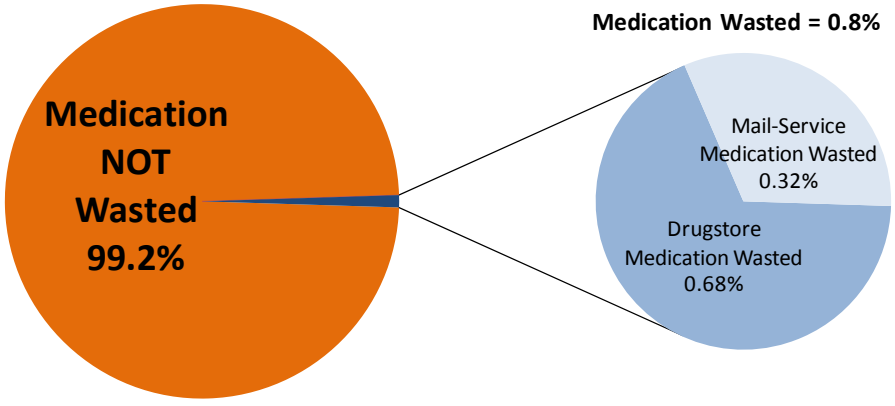
Some assert that medication wastage is: 1) a significant problem in Medicare Part D; 2) more prevalent in mail-service than retail pharmacy; and 3) is largely caused by how a drug is dispensed.

The reality is: 1) less than 1% of medications are "wasted" in Medicare Part D; 2) two-thirds of wastage occurs among prescriptions dispensed by drugstores; and 3) wastage is largely due to discontinuation of therapy, switching to a different drug, changing dosage, death, and other reasons unrelated to how patients fill prescriptions.

Major Findings:

- Less than 1% of all medications dispensed for Medicare beneficiaries are wasted.
- More than two-thirds of medication wasted in Medicare is dispensed by drugstores.
- Mail-service pharmacies are typically used only after a patient has already been stabilized on several 30-day prescriptions dispensed by a local drugstore.
- Waste related to mail-service "auto-refill" prescriptions accounts for just 0.02% of medication dispensed in Part D.

Drugstore Scripts Account for the Majority of Medication Waste in Part D



II. Methodology

Visante was commissioned by the Pharmaceutical Care Management Association (PCMA) to estimate the amount of medication waste in the Medicare Part D program by type of pharmacy.

Evidence on the Amount of Medication Waste

Waste can occur when patients stop taking their medication before using the entire supply of a prescription. This can be due to the need to discontinue therapy, switch to a different drug, or change dosage strengths.

A 2011 study of patients taking cholesterol reducing drugs found that waste was associated with less than 2.5% of statin prescriptions across all pharmacy channels.[1] When 90-day statin prescriptions were compared, waste was less for those obtained through mail-service pharmacies than from retail drug stores. On a yearly basis, statin prescriptions dispensed by mail-service pharmacies were associated with an average 3.08 days of wasted medication supply, while drugstore prescriptions filled for a similar 90-day supply were associated with 4.04 days of wasted medication.

A larger and more recent study found less waste, looking at 14 different therapeutic drug categories in almost 3 million patients.[2] On an annualized basis, 90-day prescriptions were associated with an average of only 2 days of wasted medication supply, while 30-day prescriptions filled at retail were associated with 1.5 days of wasted medication per year. This study found no significant difference in waste between 90-day retail and 90-day mail.

Medication waste may also occur when a Medicare beneficiary dies. If a prescription is filled for a 30-day supply, then a beneficiary will have approximately 15 days of medication from that prescription on hand at time of death, on average. But if a prescription is filled for a 90-day supply, then the average beneficiary would be expected to have approximately 45-days of medication from that prescription on hand at time of death.

Estimated Medication Waste in Part D

According to CMS, the Medicare Part D program reimburses for 1.4 billion prescriptions per year.[3] Mail-service pharmacies account for 8% of total unadjusted prescriptions.[4] When adjusted for their larger average script sizes, mail-service accounts for 19% of size-adjusted prescriptions, or 268 million prescriptions annually. Retail pharmacies account for 79% of total unadjusted prescriptions, including an estimated 167 million 90-day prescriptions and 826 million 30-day prescriptions. The remaining prescriptions in the Medicare Part D program come from long-term care pharmacies or "other pharmacies" (which includes physician offices, specialty pharmacies, home infusion, durable

[1] Vuong, T., et al., "Statin Waste Associated with 90-day Supplies Compared to 30-day Supplies," Prime Therapeutics, 2011.
[2] Murphy P, Khandelwal N, Duncan I., "Comparing Medication Wastage by Fill Quantity and Fulfillment Channel," *Am J Pharm Benefits*, 2012; 4(6):e166-e171.
[3] MedPAC Data Book, Health Care Spending and the Medicare Program, June 2012.
[4] Medicare Payment Advisory Commission's June 2012 Report to the Congress: Medicare and the Health Care Delivery System

medical equipment, nuclear pharmacies, federally qualified health centers, rural health clinics, Indian Health Service, and hospitals).[5]

Visante incorporated these data from CMS together with data on medication waste at retail and mail and estimates of medication on hand at time of death to create an annual estimate of medication waste for the Medicare Part D program (Exhibit 1). Based on this model, Visante estimates that less than 1% of medication dispensed for Medicare beneficiaries is wasted.

Most Wasted Medication Is Dispensed by Drugstores

Most medications are dispensed by drugstores[6] and the majority of medication waste comes from these prescriptions. Virtually all mail-service prescriptions are dispensed as 90-day supplies, while retail prescriptions are dispensed as both 90-day and 30-day supplies. Ninety-day prescriptions generally offer advantages in lower costs, patient convenience, and improved adherence. Due to their larger quantity, 90-day prescriptions—from either drugstores or mail-service pharmacies—may have higher waste due to changes/discontinuations in drug therapy and patient deaths. Exhibit 1 describes how all these factors were accounted for in Visante's economic model.

To minimize waste, mail-service pharmacies are typically used only once a patient is stable on a medication after having finished several 30-day prescriptions from their local drugstores. Visante estimates that waste associated with mail-service pharmacy prescriptions is only about 1/3 of total waste.

Amount of Medication Wasted When Beneficiaries Die

There are two potentially significant contributors to medication waste upon the death of a patient. The primary contributor is simply the amount of medication on hand at time of death, which, as discussed, will average 50% of each prescription. The second potential contributor is related to automatic refills, or "auto-refills."

Some pharmacies (both retail and mail-service) offer the option to enroll in an auto-refill service that automatically refills maintenance prescriptions for patients at a set interval (often every 90 days for chronic maintenance medications). Typically, auto-refill programs require a patient credit card for billing/payment. Auto-refills are offered by both retail pharmacies and mail-service pharmacies.

Visante examined the processes associated with notification of a patient/beneficiary death, and our findings are outlined in the Appendix. Once a death has been confirmed and notice sent to CMS, it is only a matter of a few days until a mail-service pharmacy or a retail pharmacy is able to shut off auto-refills (or other claims) in its systems. However, it may take a few days or weeks for CMS to be notified, because the processes related to "death certificates" in most states are still mostly manual.

[5] Medicare Payment Advisory Commission's June 2012 Report to the Congress: Medicare and the Health Care Delivery System.
[6] Including retail pharmacies in chain drugstores, independent drugstores, supermarkets, and mass merchants.

Automatic Prescription Refills through Mail-Service Pharmacies Do Not Substantially Add to Waste

Auto-refills are offered by both retail pharmacies and mail-service pharmacies. All the largest retail pharmacy chains offer auto-refills. And while many mail-service pharmacies offer auto-refills, auto-refills are NOT offered by all mail-service pharmacies in Medicare Part D. The largest PDPs do not offer "auto-refills" to their mail-service users.[7]

For purposes of modeling medication waste due to auto-refills and patient deaths, Visante assumed that a mail-service pharmacy might send one additional prescription package to a patient's home before being notified of the patient's death. We did not model any extra auto-refills from retail pharmacies, although these might also occur. Visante assumes that 30% of beneficiaries are in a plan with a mail-service pharmacy offering an auto-refill option and that 50% of the beneficiaries in those plans might sign up for the auto-refill service. Based on these assumptions, the additional waste related to "mail-service auto-refills" is only 2.6% of the total waste, or 0.02% of all medication dispensed in Part D.

[7] According to telephone conversations with customer service representatives at national Medicare PDPs.

Exhibit 1

		[a] *millions* **Unadjust Rx**	[b] *millions* **Adjust Rx [1]**	[c] *millions* **Days Supply**	*[d]* ***Other Factors***
Percentage of unadjusted prescriptions filled in Medicare Part D (2008)					
[1]	LTC	*10%*			
[2]	Other	*3%*			
[3]	Mail 90-day	*8%*			
[4]	Retail	*79%*			
	Split "retail" into retail-30 vs retail-90: One PBM reports 37.3% of adjusted Rx filled for 90-day at either retail or mail.				
[5]	Retail 90-day	*5%*			
[6]	Retail 30-day	*74%*			
	Convert unadjusted to relative proportions of adjusted Rx's				
Proportion of adjusted prescriptions filled in Medicare Part D (2008)					
[7]	LTC		10		
[8]	Other		3		
[9]	Mail 90-day		24		
[10]	Retail 90-day		15		
[11]	Retail 30-day		74		
[12]	TOTAL		126		
Number of adjusted prescriptions filled in Medicare Part D (2010)					
[13]	Total		1,406		
[14]	Mail 90-day		268		
[15]	Retail 90-day		167		
[16]	Retail 30-day		826		
[17]	Total		1,261		
	Convert adjusted Rx to unadjusted Rx				
Number of unadjusted prescription claims					
[18]	Mail 90-day	89			
[19]	Retail 90-day	56			
[20]	Retail 30-day	826			
[21]	Total	971			
Medication waste (e.g., waste due to switching medications)					*Waste Per Unadjusted Rx Claim (days supply)*
[22]	Mail 90-day			46	*0.510*
[23]	Retail 90-day			28	*0.510*
[24]	Retail 30-day			105	*0.128*
[25]	Total			179	
[26]	Mail 90-day		1.5		
[27]	Retail 90-day		0.9		
[28]	Retail 30-day		3.5		
[29]	Total		6.0		

Exhibit 1 *(continued)*		[a] *millions* **Unadjust Rx**	[b] *millions* **Adjust Rx [1]**	[c] *millions* **Days Supply**	*[d]* ***Other Factors***
Medication waste associated with deceased beneficiaries					
[30]	Percentage of Medicare beneficiaries that die each year				*5%*
[31]	Percentage of Medicare beneficiaries that die each year in nursing homes (LTC)				*1%*
[32]	Percentage of Medicare beneficiaries that die each year outside of LTC				*4%*
Number of non-LTC prescriptions for deceased beneficiaries					
[33]	Mail 90-day	3.6			
[34]	Retail 90-day	2.2			
[35]	Retail 30-day	33.0			
[36]	Total	38.8			
The number of prescriptions in the possession of a beneficiary at the time of death					
					# Rx Fills per Rx medication per year
[37]	Mail 90-day	0.9			*4*
[38]	Retail 90-day	0.6			*4*
[39]	Retail 30-day	2.8			*12*
[40]	Total	4.2			
Prescription medication on hand at death					
[41]	Mail 90-day		1.3		
[42]	Retail 90-day		0.8		
[43]	Retail 30-day		1.4		
[44]	Total		3.6		
Additional waste associated with mail autofill					
[45]	Number of Medicare beneficiaries enrolled in Part D (millions)				*29.7*
[46]	Number Medicare beneficiaries that die outside LTC in a year (millions)				*1.2*
[47]	% beneficiaries using mail-order				*24%*
[48]	# deceased beneficiaries using mail-order pharmacies				*0.29*
[49]	% of Part D enrollment with mail-order pharmacies offering autofill as an option				*30%*
[50]	Est % of Part D mail-order users with autofill option who elect to use autofill				*50%*

Exhibit 1 *(continued)*		[a] *millions* **Unadjust Rx**	[b] *millions* **Adjust Rx** [1]	[c] *millions* **Days Supply**	*[d]* ***Other Factors***
[50]	Est % of Part D mail-order users with autofill option who elect to use autofill				*50%*
[51]	# deceased beneficiaries using mail-order AND AUTO-FILL				*0.04*
[52]	Average # of prescriptions included in each mail pharmacy package sent to beneficiary				2
[53]	Additional waste from 1 extra autofill mail pkg (= 2 Rx) per deceased mail customer	0.09			
[54]	Additional waste associated with mail autofill for deceased beneficiaries		0.3		
[55]	Annual waste associated with deceased beneficiaries		3.8		
Summary: Typical waste for all beneficiaries					
[56]	Total prescriptions dispensed via retail and mail		1,261		
[57]	Total waste (normal waste from switching meds + deceased beneficiaries)		9.8		*0.8%*
Waste breakdown: Retail vs Mail					
[58]	Retail		6.7		*68%*
[59]	Mail		3.1		*32%*

[1] One prescription for a 90-day supply is counted as three "adjusted prescriptions for a 30-day supply.

Exhibit 1
(continued)

Notes/Sources

[1-4]	Medicare Payment Advisory Commission's June 2012 Report to the Congress: Medicare and the Health Care Delivery System
[5-6]	The Value of 90-Day Retail, Walgreens White Paper, 2012. Visante assumes 39% adjusted Rx = 13% unadjusted.
[5]	[a] = Total unadjusted 90-day Rx's of 13% - [3]
[6]	[4] - [5]
[7]	[1]
[8]	[2]
[9]	[3] * 3
[10]	[5] * 3
[11]	[6]
[12]	sum of [7-11]
[13]	1.4 billion adjusted prescriptions in 2010 (Medicare Payment Advisory Commission's June 2012 Report to the Congress: Medicare and the Health Care Delivery System)
[14]	[9] / [12] * [13]
[15]	[10] / [12] * [13]
[16]	[11] / [12] * [13]
[17]	sum of [14-16]
[18]	[14]/3
[19]	[15]/3
[20]	[16]
[21]	sum of [15-17]
[22-24d]	Murphy P, Khandelwal N, Duncan I. Comparing medication wastage by fill quantity and fulfillment channel. Am J Pharm Benefits 2012;4(6):e166-e171. Visante used the weighted average for all data reported in study for 90-day vs Retail-30. There was no significant
[22]	[c] = [18] * [22d]
[23]	[c] = [19] * [23d]
[24]	[c] = [20] * [24d]
[25]	sum of [22-24]
[26]	[22c] / 30 days per adjusted Rx
[27]	[23c] / 30 days per adjusted Rx
[28]	[24c] / 30 days per adjusted Rx
[29]	sum of [26-28]
[30]	Hogan et al. Medicare beneficiaries' costs of care in the last year of life. Health Aff July 2001 Vol 20 No 4 188-195
[31]	Medicare Spending and Use of Medical Services for Beneficiaries in Nursing Homes and Other Long-Term Care Facilities: A Potential for Achieving Medicare Savings and Improving the Quality of Care, The Henry J. Kaiser Family Foundation, October 2010
[32]	[30] - [31]
[33]	[18] * [32]
[34]	[19] * [32]
[35]	[20] * [32]
[36]	sum of [33-35]

Notes/Sources *(continued)*

[37]	[33a] / [37d]
[38]	[34a] / [38d]
[39]	[35a] / [39d]
[40]	sum of [37-39]
[41-43]	For example, if a patient is taking one medication, and gets 4 mail prescription fills during the year (1 fill every 3 months), they will have an average of 1/2 of ONE fill of that
[41]	[37] * 3/2
[42]	[38] * 3/2
[43]	[39] * 1/2
[44]	sum of [41-43]
[45]	MedPac Data Book: Health Care Spending and the Medicare Program, June 2012
[46]	[32] * [45]
[47]	Assume 24% of adjusted Rx filled at mail, therefore 24% of beneficiaries use mail
[48]	[46] * [47]
[49]	Based on Visante survey of mail pharmacies for the top 64 Part D plans (which represent 80% of total Part D enrollment)
[50]	Visante estimate
[51]	[48] * [49] * [50]
[52]	Mail pharmacies send average of 2 Rx per package (unpublished Visante study)
[53]	[51] * [52] ; Assume each deceased beneficiary using mail receives one additional autofill mail package before notification of death and plan/PDP turns off eligibility.
[54]	[53] * 3
[55]	[44] + [54]
[56]	[17]
[57]	[b] = [29] + [55] ; [d] = [57] / [56]
[58]	[b] = sum [27-28,42-43] ; [d] = [58b] / [57b]
[59]	[b] = [26] + [41] +[50] ; [d] = [59b] / [57b]

III. Appendix: How Quickly are Mail-Service Auto-refills Stopped When Beneficiaries Die?

Companies participating in the Medicare Prescription Drug program—such as plan sponsors, pharmacy benefit management companies (PBMs), and mail-service pharmacies—continually assess the costs and effectiveness of operations.

- Many of the largest PDPs do not offer "auto-refills" to their mail-service users for various reasons, such as possible changes to prescription medications and beneficiary enrollment status, including death.
- Those companies that do offer "auto-refills" have established management controls.

Mail-service pharmacies are highly automated and able to quickly act on beneficiary information, including disenrollment due to death. Mail-service pharmacies have systems that are linked electronically with Medicare Plan Sponsors or the Sponsor's PBM, and therefore:

- Mail-service pharmacies that offer auto-refills will turn off auto-refills upon receipt of electronic enrollment update reports.
- Mail-service pharmacies also turn off auto-refills upon receipt of a rejected claim, based on a reason code of death, when adjudicating a claim through the online system with the Plan Sponsor or PBM.

The Plan Sponsor, or in some cases the Sponsor's PBM, receives a daily batch file from the Centers for Medicare and Medicaid Services (CMS) called Transaction Reply Reports—commonly referred to as TRRs—containing updated beneficiary eligibility information.

- TRRs are how CMS officially notifies Plans of new enrollments, changes in beneficiary eligibility status, disenrollments, and deaths.
- Date of death is part of the report. In atypical cases, month of death is used.

A second source of notification of death is informal, but still acted upon. The Plan Sponsor or PBM may receive a call or letter from a family member that a beneficiary has died. This information is promptly sent electronically to mail-service pharmacies and other operational units that utilize enrollment status. (Estimated time for mail-service pharmacy to be notified: varies but may be the same day or 24 to 48 hours, or several days if the Sponsor/PBM attempts verification.)

- Mail-service pharmacies act promptly to set temporary edits in their adjudication systems to halt further prescription processing for the beneficiary. (Estimated time: same day, or 24 to 48 hours)
- Files are permanently changed when notification from CMS' TRR is received.

How is CMS notified of beneficiary deaths? The Social Security Administration (SSA) is responsible for receiving and verifying this information, then pushing it out in daily batched files to CMS.

- SSA receives most notifications of death from Funeral Directors and family members within days or a week, and initiates several actions (as needed by multiple federal agencies), including steps for confirmation.

- Before notifications are shared with CMS, and to avoid interruption in Medicare coverage, SSA requires receipt of a death certificate from a State's vital statistics division for confirmation.
- Although some progress has been made toward an electronic death reporting system, certification of death remains a largely manual process that can take weeks or months. There are outlier cases where certification may take years. (Estimated time varies widely by State and circumstances of the death/case: a week, weeks, months, or more)
- There is a direct link between the SSA beneficiary database and CMS's central Enrollment Data Base for the whole Medicare beneficiary population, regardless of whether the individual is in original Medicare and a prescription drug plan (PDP) or in a Medicare Advantage/Prescription Drug (MAPD) plan. There are daily feeds between SSA and CMS, including deaths that have been certified. (Estimated time between SSA verification of death and feed to CMS: varies but assume 24 hours to one week)
- In turn, there are daily feeds between the Enrollment Data Base and other downstream systems within CMS, including the MARx system, enrollment, disenrollment, and related information for Medicare Advantage and Prescription Drug plans. (Estimated time between EDB updates and receipt in MARx: 24 to 48 hours)
- TRRs containing updated eligibility and enrollment information from MARx are sent daily to the Plan Sponsor or PBM, with additional weekly summaries. (Estimated time between MARx update and receipt of TRR by the Plan Sponsor or PBM: 24 to 48 hours)
- Plan Sponsors and PBMs send updated eligibility and enrollment information, including verified deaths, to mail-service pharmacies. (Estimated time for notification of mail-service pharmacy: varies but usually the same day or within 24 to 48 hours)
- Finally, mail-service pharmacies may be notified by a separate, independent process: credit card rejection. Most mail-service pharmacy auto-refills are guaranteed by the consumer's credit card. If the family of the deceased beneficiary cancels the credit card, then the mail-service pharmacy's credit card authorization will be rejected, and the prescriptions will not be filled.
- As noted previously, there are cases where notice and certification of death take months, even years. For example, there are cases of human error (e.g., a typographical error) by a State or SSA employee at some point in the largely manual process. There also are cases of fraud where beneficiary deaths are not reported, often until the fraud is detected and proven.

In summary, once a death has been confirmed and notice sent to CMS, it is only a matter of a few days (4 to 7) (see following Flow Chart) until a mail-service pharmacy is able to shut off auto-refills (or other claims) in its systems. In cases where a Plan Sponsor or PBM receives an "informal" notice of death from an acceptable source, mail-service pharmacy system edits may be made even more quickly.

Long delays (one month to over 3 months) are due to the important yet cumbersome process of confirmation and largely manual, outdated processes for reporting deaths by most States.

How Quickly are Mail-Service Auto-refills Stopped When Beneficiaries Die?