The impact of site of service on patient outcomes with healthcare professional administered specialty medications

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Background

Many rare disease specialty injectable medications are indicated to be administered by healthcare professionals (HCP) due to safety profiles, complicated administration, or monitoring requirements. These medications may be given in a medical office setting or via in-home nursing services. Data has shown that in-home administration can improve clinical patient outcomes, reduce patient travel burden, and decrease the stress of injections and disruptions to family life.[1]

A national Rare Disease Specialty Pharmacy with access to HCP-administered medications either sends the medication directly to the HCP office or works with nursing services to administer these injections in patient home. Nurses undergo required training on administration and adverse event reporting. The nursing service reports completion of administration, adverse events, administration delays, and/or medication errors. Data are beginning to highlight that differences exist in patient outcomes when administration is performed by in-home nursing services versus a medical office setting. While the prescriber is responsible for determining the administration location, understanding outcome differences between sites of service may impact decision making. These outcomes observed may serve as a guide for physicians in selecting site of service for HCP-administered injectables for rare diseases.

Objective

The purpose of this study is to assess the differences in outcomes with rare disease specialty injectable medications administered via in-home nursing services versus in a medical office.

Methods

Internal retrospective database analysis in which outcomes were compared and assessed between patients from two lines of business who either received their injection via in-home nursing or in a medical office setting

Adverse Events	• Extracted from internal reporting forms • Statistical Analysis: Proportion t-test
Adherence	• Collected through assessment of average gap days between fills • Statistical Analysis: Welch's t-test
Gap Days	• Length of days that a patient does not have medication on hand based on shipment history • Calculated by subtracting the medication exhaust date from the medication shipment date

Results

Cohort 1 n = 1,018: Patients across two lines of business who filled their medication at a rare disease specialty pharmacy and **received their injection in a medical office setting** from 01/01/2022 through 12/31/2022

Cohort 2 n = 315: Patients across two lines of business who filled their medication at a rare disease specialty pharmacy and **received their injection in their home via in-home nursing services** from 01/01/2022 through 12/31/2022

Figure 1: Sex and Average Age Cohort 1

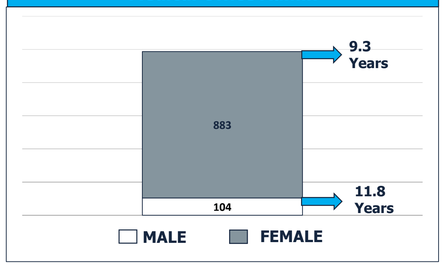


Figure 2: Sex and Average Age Cohort 2

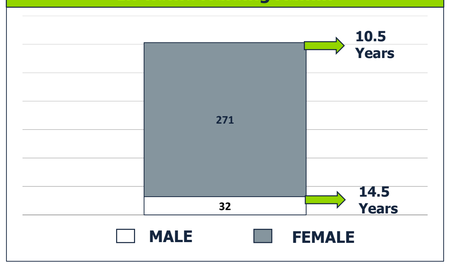


Figure 3. Gap Days Assessment

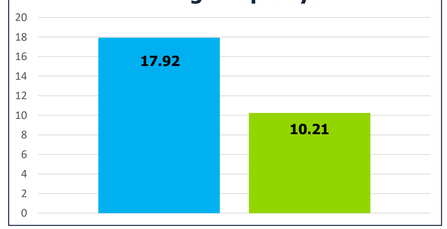


Figure 4. Total AE Assessment

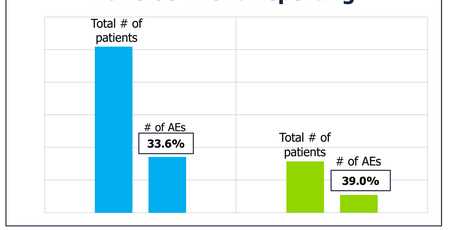


Figure 5. ISR Assessment Cohort 1

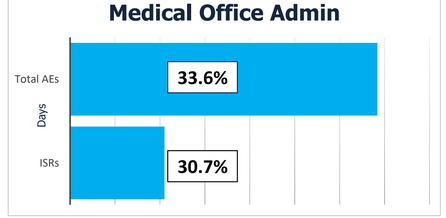
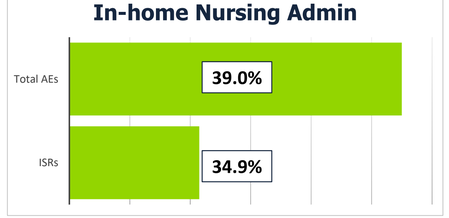


Figure 6. ISR Assessment Cohort 2



	GAP DAYS	ADVERSE EVENTS	INJECTION SITE REACTIONS
Results	**Cohort 1: 17.9** **Cohort 2: 10.2**	**Cohort 1: 33.6** **Cohort 2: 39.0**	**Cohort 1: 30.7** **Cohort 2: 34.9**
P-value	< 0.05 Significant	>0.05 Not Significant	> 0.05 Not Significant

Discussion

The results of this retrospective analysis of the impact of site of care on patient outcomes with HCP-administered specialty medications showed that patients who received their injections in the home setting have a more consistent medication administration pattern, meaning that they were more adherent. Gap days (Figure 3) demonstrated that on average, patients who received their administration in the home had 43.2% less gaps days than those who went to a medical office. This could be due to the difficulty in scheduling appointments or the travel burden on patients. This result was statistically significant.

In terms of adverse events (Figures 4-6), those who received their administration in a medical office setting had a slightly lower AE rate than those who were administered in the home. This was true for total adverse events as well as adverse events that involved injection site reactions. There was no statistically significant differences in the number of AEs regardless of administration site or type of AE.

This study was limited due differences in reporting requirements between medical offices and in-home nursing. The availability of nursing may limit some in-home administration; Thus, the medical office population was larger than in-home. AE reporting is another limitation. These results may be due to direct nurse reporting to the Rare Disease Pharmacy as opposed to patient-reported or trying to get information from the medical office.

Conclusion

HCP-administered medications in the home may have several advantages. The primary advantages are patient convenience and comfort level. This study shows that medication adherence may also be an added benefit and should lead to better outcomes. Rare Disease Specialty Pharmacies are in a unique position to work with medical offices for in-office administration and nursing services for in-home administration. Site of service for injection should ultimately be determined by patient preference and comfort level in order to continue to provide excellent patient-centered care.

References

McCall C, Mannion M, Hilliard C, Lannon P, McKenna F, O'Marcaigh A, Slevin T, Smith O, Storey L. Administration of Home Intravenous Chemotherapy to Children by their Parents. J Pediatr Oncol Nurs. 2017 Mar/Apr;34(2):122-129. doi: 10.1177/1043454216646533. Epub 2016 Jul 7. PMID: 27170679.

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