Developing a Home Based Chemotherapy Model

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Quality Improvement Proposal

- Chemotherapy in the United States is largely administered in outpatient infusion centers.
- Home administration of chemotherapy has been demonstrated to be safe, effective and patient centered[1-3].
- We propose to develop and scale a home based chemotherapy program for patients at Thomas Jefferson University.
- Prior to implementation, we systematically reviewed all medications administered in the outpatient infusion center for feasibility of administration in the home setting.

Intervention

- Each medication administered in the outpatient infusion center was reviewed and barriers to home infusion were identified. Barriers included[4-6]:
  - Route and duration of administration,
  - Vesicant status,
  - Emetogenic potential, and
  - Stability at room temperature.
- Scoring was determined by a multidisciplinary team of pharmacists and oncologists (*see Table 1*).
- Higher scores indicated greater potential for home administration.

Measurement and Results

Table 1: Scoring System for Viability of Home Infusion

Variables	Score
Route of Administration	
SubQ/IM	0
IV	1
Duration of Administration	
≥ 24 hours	2
> 90 minutes, < 24 hours	0
> 60 minutes, ≤ 90 minutes	1
≤ 60 minutes	2
Vesicant Status	
Yes	-1
No	1
Emetogenic Potential	
High	-1
Moderate	0
Low	1
Minimal	2
Stability at Room Temperature	
Not Stable	-2
< 4 hours	-1
≥ 4 hours, < 8 hours	0
≥ 8 hours, < 12 hours	1
≥ 12 hours	2

- 100 medications were reviewed.
- The highest possible score was 8; the lowest possible score was -4. Agents ranged with scores from 8 (fulvestrant) to -1 (dactinomycin), with a median score of 4.
- The largest factor lowering the score was stability at room temperature; score of -2 and -1 in 19 and 18 medications respectively.

Next Steps and Lessons Learned

- Based on our criteria, most medications can be administered in the home setting.
- A major barrier to administration at home is stability of medications at room temperature.
  - This issue can be addressed by transporting and storing the medication in a refrigerated container.
- Expectedly, injectable drugs and medications with short infusion times that are stable at room temperature would be easiest to administer at home.
- Further analysis is ongoing to assess the financial feasibility.

Sources

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