Medication adherence has been shown to be sub-optimal in the general population and is especially concerning for patients with HIV. Poor medication adherence with antiretrovirals (ARV) significantly contributes to drug resistance, increased viral load, decreased CD4 counts, and an overall increase in morbidity and mortality. Current issues surrounding medication adherence and medication adherence rates in Pennsylvania’s AIDS Drug Assistance Program will be examined.

The following map shows the regional HIV treatment coalitions in Pennsylvania. The PA ADAP covers prescription medications for HIV positive individuals throughout the entire Commonwealth. The majority of ADAP members are located in Southwest PA.

Materials & Methods

The calculations used to determine medication adherence rates have evolved for PA’s ADAP from what was initially the reporting of the number of members within a given time period that filled at least one medication per month. To what is now a more accurate and detailed calculation of medication adherence by using Continuous Measure of Adherence (CMA). CMA is basically a Medication Possession Ratio (MPR) extended out over a longer time period than just one month. Prescription claims data can be used to determine how often a person refills their medication on time or whether a person misses doses during the reporting time period.

CMA calculation

CMA = 1 - (Σdose missing / total medication days)

Calculating Medication Adherence

Use of Continuous Measure of Adherence (CMA) to calculate adherence rates

- CMA < 0.80 = Non-adherence (Missed more than 6 days of therapy in 1 month)
- CMA = 0.80 but < 0.95 = Sub-optimal adherence (Missed more than 5.1 days but less than 6 days of therapy in 1 month)
- CMA = 0.95 = Optimal adherence (Missed less than 1.5 days of therapy in 1 month)

Adherence Rate Calculation Examples - Note: The CMA must be calculated for each medication specific to drug and strength.

Results

Using percent of individuals who have filled at least one medication each month while enrolled to determine medication adherence

Analysis of 100 random PA ADAP only members in 2008

<table>
<thead>
<tr>
<th>Medication</th>
<th>CMA</th>
<th>Non-adherence</th>
<th>Sub-optimal adherence</th>
<th>Optimal adherence</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>0.80</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>B</td>
<td>0.95</td>
<td>0</td>
<td>0</td>
<td>100</td>
</tr>
<tr>
<td>C</td>
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<td>0</td>
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<tr>
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<td>0</td>
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</tbody>
</table>

Conclusions

- Patients who have been enrolled for at least 1 year prior to the intervention period
- The following graphic depicts the proposed intervention timeline for the study.

Medication Adherence Interventions

- Patient education and adherence counseling
- Simplified treatment regimens
- Use of medications with less adverse effects and drug interactions
- Pill boxes
- Alarm/reminder devices
- Reminder letters
- Automated refills
- Antihypertensive medications
- Treat drug and alcohol problems

Lessons Learned

Poor medication adherence is an issue that directly impacts patients and can dramatically affect their overall health by not adhering to the regimen prescribed. PA ADAP has the unique ability to collect claims data from multiple pharmacies that are independent of one another. Normally, individual pharmacies will only have drug claim information that pertains to medications filled within their chain of pharmacies. Implementing medication adherence programs at the payer level allows for a more comprehensive approach to gathering claim information from multiple pharmacies. Also, medication adherence can be calculated in different ways and multiples factors influence the outcomes of the adherence data. The use of adherence rate calculations such as Continuous Measure of Adherence or Medication Possession Ratios by AIDS Drug Assistance Programs are effective ways to accurately measure medication adherence across a large population. Hopefully, the information presented can help other AIDS Drug Assistance Programs analyze medication adherence rates and can be used as a tool to develop and implement medication adherence intervention programs.

References

3. Approximately 57.5% of members are optimally adherent to ARV therapy while the remaining 42.5% of members are either sub-optimally adherent or non-adherent to their ARV therapy.