To examine the difference in the adherence of patients with metabolic syndrome receiving a hybrid model of care compared to other community pharmacy models.

Methods
- **Design:** Pilot study of a larger prospective randomized controlled trial
- **Setting:** The Endocrine and Diabetes Care Center (EDCC), a local endocrinology practice in collaboration with multiple community pharmacy practice locations, known as The Pharmacy Coach.
- **Inclusion:** All patients who had metabolic syndrome and agreed to have Paramount Health insurance, type 2 diabetes, hypertension, hyperlipidemia, prescribed at least five oral medications, and prescribed an oral medication for each disease state.
- **Randomization:** Patients were randomized using computerized adaptive randomization into four groups (Table 1). Covariates included number of medications, Charlson Comorbidity Index, length of diagnosis, and type of insurance.
- **Subjects:** 45 patients currently enrolled, 19 patients have claims data available for months 4 and 14 patients have completed 6-month pill count.
- **Data Collection:** Adherence data was collected through prescription claims data as well as pill count. Pill count data was collected at baseline, three, and six months.
- **Data Analysis:** Claims data was analyzed using the Statistical Analysis System (SAS version 9.3). All other analyses took place using the Statistical Package for Social Sciences (SPSS version 20.0).

Table 1. Study Groups

<table>
<thead>
<tr>
<th>Group</th>
<th>Group Description</th>
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<tbody>
<tr>
<td>Group A</td>
<td>Standard Case-Pill Bottles</td>
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<tr>
<td>Group B</td>
<td>Pill Bottles and Medication Therapy Management using the Appointment Based Model</td>
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<tr>
<td>Group C</td>
<td>Blister Packs and Reminders Synchronization</td>
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<tr>
<td>Group D</td>
<td>Hybrid Model- Blister Packs, Reminders Synchronization, and Medication Therapy Management using the Appointment Based Model</td>
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Figures

**Figure 1.** Baseline to 6 months Medications Adherence for All Oral Medications (n=19)

**Figure 2.** Pill Count Baseline to 6 months Medications Adherence for All Oral Medications (n=14)

References

Discussion
Studies have not yet identified a single medication adherence strategy that is completely effective. The early trends show that the hybrid model can improve medication adherence and may have an impact on STAR ratings. This is an ongoing study. Pilot data suggests somewhat of a positive trend. Researchers are looking forward to presenting further results at the one year time point of study.

Conclusions
- **Pill count and PDC appear to show the same trend when examining this early data with pill count being slightly more conservative in most cases, as expected (Figures 1 and 2).**
- Patients may have been refilling their medication consistently, showing a higher PDC, but the pill count shows that they may not have been taking their medication.
- When measuring by PDC, all groups went from being non-adherent at baseline to adherent (≥ 80%) at 6 months (Figure 1). The hybrid model group has the lowest adherence when measured by PDC. Unlike the blister pack only group, the hybrid model group met with a pharmacist and completed a Comprehensive Medication Review (CMR) prior to starting in the blister packs. This CMR could have resulted in discontinuation of unnecessary therapy or switching of medications which would interfere with the patients’ filling of medications, showing them to be less adherent. Overtime, as the patients are adhered, the adherence of the hybrid group may be greater than the other groups when measured by PDC.
- When measuring by pill count, the hybrid model had the greatest improvement from baseline to six month improvement from baseline to the 80% benchmark (Table 2). However the blister pack and the pill bottle groups, those groups lacking MTM, did not reach 80% (Figure 2). MTM may have a greater impact on adherence than blister packaging, but more data is needed.
- Most groups, excluding the pill bottle and MTM group, did improve during the first three months and then decrease, likely due to the knowledge that they were being observed, which can be an adherence improving intervention in and of itself.
- The early adherence trends of this pilot study show that the hybrid model has the potential to improve medication non-adherence. Further research with a larger sample size is needed.