

# Adherence Answered: Algorithmic evidence-based approach to attacking symptoms of non-adherence in patients with bleeding disorders

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**Background** Half of all patients taking maintenance medications for a chronic disease, including those with bleeding disorders, stop taking their medications within one year of initiating therapy.<sup>1-6</sup> This non-adherence to essential medications is responsible for 33-66% of all medication-related preventable hospitalizations and patient illness, costing the U.S. health care system an estimated \$100-289 billion annually.<sup>7-12</sup> Additionally, according to Capgemini Consulting, pharma is losing an estimated \$564 billion globally in estimated annual pharmaceutical revenue due to medication non-adherence.

In addition to the cost, non-adherence is responsible for an increase in death and morbidity.<sup>7</sup> Evaluation of the daunting numbers and potential for poor outcomes, reveals there is great opportunity for a fresh look at care planning.

**The Problem with the problem - No Simple Solution.** There are many reasons for non-adherence to medications. Everything from co-payments, complexity of dosing regimens and access to care impact adherence. In a recent article, *Medication Adherence: WHO Cares?*, by Dr. Marie T. Brown, MD and Jennifer K. Bussell, MD, the authors describe what is at the center of the complexity of the problem. According to the research done by Brown and Bussell, “a Cochrane review of 78 randomized trials **found no one simple intervention and relatively few complex interventions to be effective at improving long-term medication adherence and health outcomes**, underscoring the difficulty of improving medication adherence.”<sup>13-14</sup> Further support for this is seen in the evidence-based medicine report, *Closing the Quality Gap: Revisiting the State of the Science (Vol. 4: Medication Adherence Interventions: Comparative Effectiveness)*. The authors concluded that there was “**no single silver bullet**” approach that worked in relation to medication adherence.<sup>15</sup>

When we reviewed the literature, the specific problems related to bleeding disorder adherence matched the World Health Organization (WHO) classifications for reasons for non-adherence.

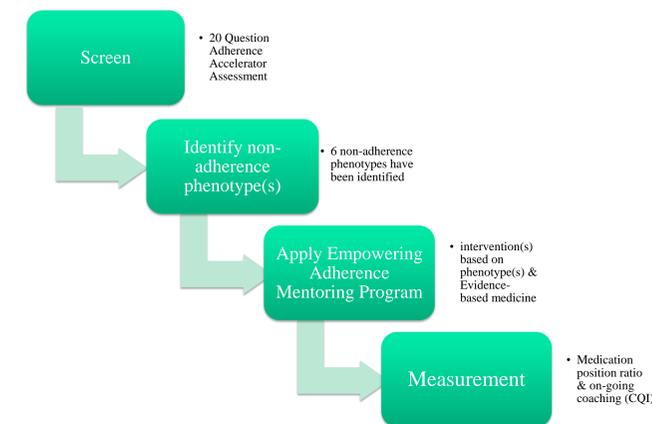
Bleeding Disorder Related “Problems”

1. Convenience issues/time<sup>16-18</sup>
2. Social/family stress<sup>18-20</sup>
3. Lack of commitment/forgetfulness<sup>19, 21-22</sup>
4. Cost of co-pays and insurance deductables<sup>18-19</sup>
5. Complications from disease<sup>18-19</sup>
6. Poor venous access<sup>17-19, 22</sup>
7. Transition from pediatric to adult clinic<sup>23</sup>

Corresponding World Health Organization (WHO) “Problems”

1. Patient Related
2. Socioeconomic Related
3. Condition Related
4. Therapy Related
5. Health-system Related

## Methods



A literature search revealed that there are some commonalities or phenotypes that, if properly screened, could make it easier to identify correct interventions. We developed a 20-question phenotype assessment tool that combines elements from evidence-based surveys, such as the Morisky Medication Adherence Scale and Oyekan’s Readiness Assessment Ruler, as well bleeding disorder specific questions. Once the phenotype(s) were identified on each patient, trained coaches and/or pharmacists would implement the evidence-based Accurate Adherence Accelerator intervention algorithm. The algorithm included phenotype specific interventions such as; collaborative care planning, Medication Therapy Management, developing scorecards, self-management training and co-pay review.

To measure the success of the intervention(s), we assigned ten patients in our pilot program using the simple random sampling method. Medication Possession Ratio (MPR) was measured for the twelve months prior to screening and intervention. At the end of the 12-month intervention MPR was measured again.

Individualized patient-centered care maps were developed using of the Accurate Adherence Accelerator.

## Evidence-based Interventions & Results

- **Care planning\***
- **Patient care directed by Center of Excellence-Hemophilia Treatment Centers (HTCs)\***
- **Collaborative care\*\***
- **Medication Therapy Management\*\***

\*Moderate Strength of Evidence AND Moderate Strength of Evidence for OTHER\*\*  
 outcomes such as symptom improvement

ID	MPR% Prior to Intervention(s)	Intervention(s)	MPR% After Intervention(s)
1	68.65%	On-going collaborative care, quarterly clinical coaching visits, MTM by RPh	97.02%
2	70.43%	On-going collaborative care, quarterly clinical coaching visits, MTM by RPh	95.58%
3	51.88%	Assessment of symptoms & Adherence Answered Mentoring	63.78%
4	51.70%	Assessment of symptoms & Adherence Answered Mentoring	58.28%
5	7.72%	Assessment of symptoms, insurance barrier removed, Motivational Interviewing, Adherence Answered Mentoring	69.92%
6	65.19%	Transitioning to self-management. Self-infusion skills by RN.	78.20%
7	77.98%	On-going collaborative care, 3 surgical procedures with no hospitalizations for savings of \$75,000 per prevention	74.02%
8	75.69%	On-going collaborative care, in-depth assessment of caregivers for enhanced validation.	86.80%
9	77.59%	Assessment of symptoms, insurance barrier removed on-going mentoring with Adherence Answered practitioner	86.91%
10	53.76%	Assessment of symptoms, insurance barrier removed, Accurate Adherence Accelerator program & made sure patient transitioned to new HTC	85.38%

**Summary** Patients engaged in the program for a twelve month period. None of the patients in the program were admitted for an unplanned hospitalization. Adherence rates for the group went from 66.8% to 78.43%, with 9 of the 10 patients showing an increase in MPR. All patients provided a 5 out of 5 rating on satisfaction survey. Additionally, one of the patients in the study group was able to avoid hospitalization on three different occasions.

## Measurement of Success

- **No unplanned hospitalizations**
  - *Savings from our study consist of 3 preventions for per admission savings of \$75,000 for a total of \$225,000*
- **90% patients showing an increase in MPR**
  - *Study Group adherence rate went from 60% to 79.6%*
- **5 out of 5 rating on patient satisfaction survey for all participating patients**

**Conclusion** Based on the initial success of the intervention, we will continue to monitor our interventions and evaluate the impact of long-acting factor on adherence. We will also continue to monitor our study group over the next year to see where there are more opportunities for improvement.

We look forward to expanding to other disease states, such as HIV, to expand our application of our survey, the Empowering Adherence coaching program with the Accurate Adherence Accelerator.

## References

References available upon request

## Disclosures

Authors of this presentation have the following to disclose concerning possible financial or personal relationships with commercial entities that may have a direct or indirect interest in the subject matter of this presentation:

- (1) Jay Bryant-Wimp: RPh: Integrité and Accurate Rx Employee
- (2) David Pannell: JD: Private Counsel
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“DRUGS DON’T WORK IN PATIENTS WHO DON’T TAKE THEM.” - C. EVERETT KOOP, MD

