The American Council on Pharmaceutical Education Standard 3.1 states that “the graduate is able to identify problems, explore and prioritize potential strategies, and design, implement, and evaluate a viable solution.” To meet this standard, we designed and implemented a problem-solving training program for students to engage in team-based problem-solving exercises. Ill-structured problems were the primary types of problems chosen for skill development, as they represent the type of problems often encountered by pharmacists, including patient care problems. Ill-structured problems tend to be complex and difficult to define, and they may require creative and innovative solutions.

Effective problem solving depends on good knowledge, reasoning, and critical thinking and can often benefit from a systematic process that generally follows the pattern of identifying and understanding the problem, then choosing, implementing, and monitoring solutions to the problem. There are several systematic approaches. We developed an approach called DRAM (Define, Resolve, Act, Monitor) and implemented it various courses in the first-year of our curriculum. This work describes its implementation in a Drug Delivery (Pharmaceutics) course, where it was applied in three team-based problem-solving sessions.

Additionally, owing to its similarity to the Pharmacists’ Patient Care Process (PPCP), the application of DRAM in the first three team sessions was used as preparation for applying the PPCP in the fourth and final problem-solving session of the course.

**Course Description and Methods**

**Problem-Solving Session Flow**

**Pre-Session Preparation**
- DRAM: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- PPCP: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.

**In-Session Process**
- DRAM: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- PPCP: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.

**The Pharmaceutics Problems To Be Solved**

**Session 1: Moving Drugs Through the Approval Pipeline**
- Define: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Resolve: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Act: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Monitor: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.

**Description of Problem**
- Determine the best of 6 model drugs for Parkinsson’s Disease Psychosis for an NDA, based on physicochemical properties, then the best expedited approval process based on preliminary clinical results.

**Session 2: Helping an Elderly Dysphagia Patient with Her Medications**
- Define: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Resolve: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Act: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Monitor: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.

**Description of Problem**
- Determine the best drug delivery related approaches to help an elderly dysphagia patient continue with her oral medications.

**Session 3: Helping a Patient With Dysphagia and a Gastrostomy Remain Compliant With Her Medications**
- Define: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Resolve: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Act: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Monitor: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.

**Description of Problem**
- Determine the best drug delivery related approaches to help an elderly dysphagia patient continue with her oral medications.

**Session 4: Helping a COPD Patient With His Inhalated Medications and Smoking Problem**
- Define: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Resolve: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Act: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.
- Monitor: Collect, evaluate, and provided a summary assessment of factors that contribute to and define the problems.

**Description of Problem**
- Determine the best pulmonary dosage forms for a patient with COPD and the best OTC products to recommend for smoking cessation.

**Results**

Teams successfully completed each step of the problem-solving process in each session. For the third, and least scaffolded session, the most common error made was inadequate contributing factor identification. For the subsequent PPCP-based session, contributing factor identification (in collect) improved, and the most common deficit was with the assess phase.

**Implications**

Through the application of this problem-solving process, students developed team-based problem-solving skills that were successfully applied to solving ill-structured pharmaceutics problems and that are valuable for patient problem-solving using the Pharmacists’ Patient Care Process.