

# Development of a Novel Clinical Pathway for Evaluating Abnormal Bleeding Girls and Young Women

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# Development of a Novel Clinical Pathway for Evaluating Abnormal Bleeding Girls and Young Women

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## Introduction/Background

Von Willebrand disease (vWD) is the most common inherited bleeding disorder, affecting about 1% of the population. Patients with vWD suffer from bruising, skin bleeding, epistaxis, prolonged mucosal bleeding, and prolonged bleeding after dental procedures. Though vWD has a prevalence of 1% in the population, only a fraction of these patients are diagnosed as having vWD. This gap in prevalence and diagnosis is caused in part by the reasonably mild nature of type 1 vWD, which accounts for the majority of cases; however, some patients remain undiagnosed secondary to failure of clinical recognition of the disease due to lack of bleeding challenges or failure to recognize minor excessive bleeding such as menorrhagia. The morbidity and mortality of patients with vWD is particularly concerning in young women and girls due to an increase in complications during menstruation, pregnancy, and potentially life threatening complications during delivery or the post-partum period. Due to the potential for significant morbidity and mortality in undiagnosed patients and the existence of readily available treatment Healthy People 2020 has called for an increase in the proportion of persons with hemoglobinopathies who are referred for evaluation and treatment, who receive early and continuous screening for complications, and who receive disease-modifying therapies.

## Problem Statement

The objective of this Capstone project is to raise awareness of vWD among healthcare providers of girls and young women and to develop a novel clinical pathway to guide physician decisions in screening and testing for vWD.

## Methodology

Development of a novel clinical pathway began with an extensive literature search to solidify information regarding vWD. This review provided information on when and what to test for, as well as, actionable steps to take regarding these test results. After the literature search was complete, a novel pathway was developed in order to facilitate a tool for guiding clinical decision. Pathway development was aimed at primary care providers and other healthcare providers of adolescent women and children. The pathway was completed and reviewed for accuracy and ease of use.

## Results Gathered

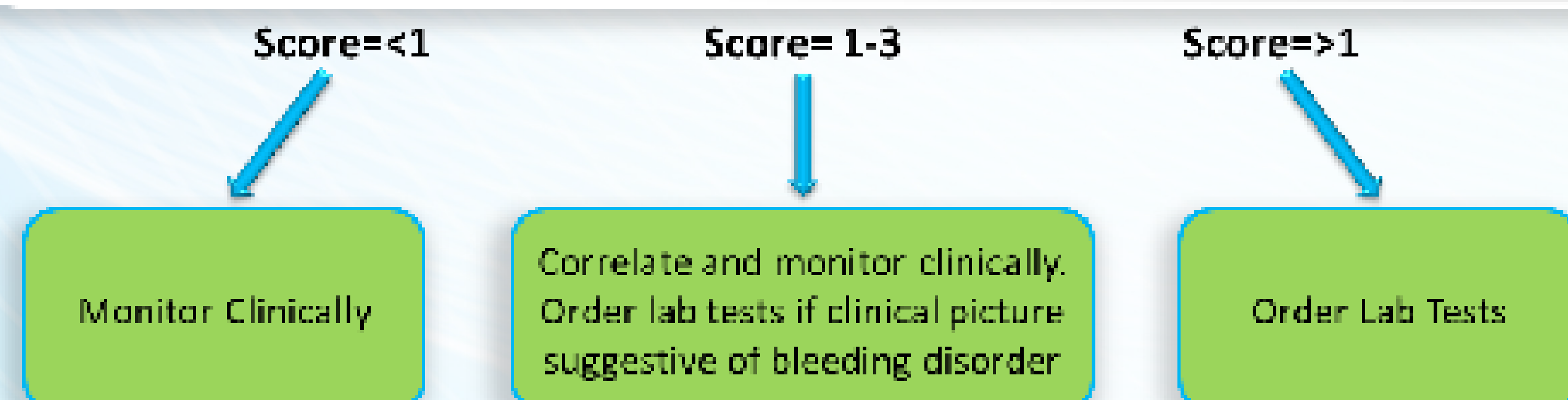
Our search of current literature identified screening questions with high sensitivity for vWD. These questions were paired with proper initial testing for patients identified as "high risk" for vWD. A clinical pathway was designed to incorporate this information as well as to guide clinical decision making once test results were returned (Figure 1).

### Women and Children with Potential Bleeding Disorders

Chief Complaint: bruising, bleeding, epistaxis, menorrhagia, oral/ mucosal/ GI tract bleeding, prolonged bleeding after dental extraction, bleeding complication after surgery, hemorrhage for ovarian cysts or corpus luteum, bleeding that required blood transfusion, Post partum hemorrhage, and family history of a bleeding disorder.

### Screening Questions

1. Have parents, siblings, aunts, uncles, cousins had any significant bleeding problems or conditions?
2. Have you ever sought medical attention for a nosebleed?
3. Have you ever had bleeding complications after surgery or trauma?
4. Do you get big bruises that last awhile?
5. Have you ever had prolonged bleeding after a tooth extraction?
6. Have you had significant bleeding after child birth?
7. Have you had menstrual bleeding that has kept you from school or work?
8. Do your menstrual periods last longer than 5 days?



## Conclusions and Future Implications

The objective of this Capstone project is to raise awareness of vWD among healthcare providers of girls and young women and to develop a novel clinical pathway to guide physician decisions in screening and testing for vWD.

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