



## The 65th ASH Annual Meeting Abstracts

## POSTER ABSTRACTS

## 901.HEALTH SERVICES AND QUALITY IMPROVEMENT - NON-MALIGNANT CONDITIONS

**Self-Sustainability with Therapeutic Phlebotomy, a Solution to the National Blood Crisis?**

Madhan Srinivasan Kumar, MD<sup>1</sup>, Sumukh Arun Kumar, MD<sup>1</sup>, Rahul Mishra, MD<sup>2</sup>, Manoj Rai, MD<sup>3</sup>, Susan George, MD FACP<sup>1</sup>, George M. Abraham, MD MPH, MACP, FIDSA, FRCP (Lon.)<sup>1</sup>, Kala Seetharaman, MD<sup>4</sup>

<sup>1</sup> Internal Medicine, Saint Vincent Hospital, Worcester, MA

<sup>2</sup> Department of Internal Medicine, Anne Arundel Medical Center, Annapolis, MD

<sup>3</sup> Center for Hematologic Malignancies, Knight Cancer Institute, Oregon Health and Sciences University, Portland, OR

<sup>4</sup> Division of Blood Disorders and Cancer Medicine, Saint Vincent Hospital, Worcester, MA

**INTRODUCTION** Hereditary hemochromatosis (HH) is a genetic condition associated with iron overload in the human body. The mainstay of treatment remains therapeutic phlebotomy. On August 1st, 2022, the American Red Cross approved using blood obtained from therapeutic phlebotomy for transfusion. While normal individuals can donate blood only as often as once in 56 days, individuals with HH can have phlebotomy as often as once weekly. Utilizing the blood collected from these patients could be a significant resource to mitigate the shortage of blood needed for transfusion. We aimed to quantify the number of units of blood removed by therapeutic phlebotomy from individuals with HH and assess its potential contribution to total units of blood required in a community hospital for two years (2021 and 2022).

**METHODS** We retrospectively reviewed electronic medical records of adult individuals who underwent therapeutic phlebotomy at Saint Vincent Hospital between January 1, 2021, and December 31, 2022. Patients with hereditary hemochromatosis were identified based on a positive genetic test for HFE gene mutations. We collected data including gender, race, age at diagnosis, and the number of units of blood removed from patients during the study period. The total number of units transfused in the in-patient care services and operating room was obtained. A descriptive statistic was performed using R version 4.2.2 statistics software.

**RESULTS** A total of 112 patients received therapeutic phlebotomy over two years (2021 and 2022) of whom 65% (N=73) had a diagnosis of HH. A majority of the patients were males (60%, 44/73) and were non-Hispanic/Latino (85%, 62/73). The mean age at diagnosis of HH was 62 [standard deviation (SD): 17] years. The median number of units of blood removed by phlebotomy per patient with HH was 3 (2-5), the annual distribution is as displayed in Table 1. A total of 504 units of whole blood was removed through therapeutic phlebotomy from 73 patients during the study period. The total requirement for blood transfusion across all the departments in the hospital was 6065 units (2,733 units in 2021 and 3,332 units in 2022). The total number of units removed through therapeutic phlebotomy in HH patients represented 8.31% (504/6065 Units) and 82.49% (504/611 Units) of total units of blood requirement for the entire hospital and operating room respectively (Table 2).

**CONCLUSION** The units of blood removed through therapeutic phlebotomy of patients with HH, could potentially help sustain 8.31% of total blood requirement of the hospital. Primarily, over 82% of the demand from the operating room could be fulfilled if the entirety of the blood from therapeutic phlebotomy were to be transfused. Overcoming technical challenges in utilizing the blood from therapeutic phlebotomy for transfusion in routine clinical practice could help mitigate the national blood crisis and aid in self-sustainability of blood products at a community level. Our study highlights the need for broader efforts to create awareness and incentivizing re-utilization of blood obtained from therapeutic phlebotomy.

**Disclosures** No relevant conflicts of interest to declare.

<b>Table 1:</b> Details of therapeutic phlebotomy performed during 2021-2022		
Year:	<b>2021</b>	<b>2022</b>
Number of patients	62	66
Females, N (%)	28 (45)	27 (41)
Total blood units removed via phlebotomy	264	240
Median (IQR) number of blood units per patient	4 (2-6)	3(2-5)

<b>Table 2:</b> Comparing therapeutic phlebotomy and blood transfusion done during 2021-2022	
Units of blood collected through phlebotomy from patients with HH	504
Units of blood transfused in the in-patient unit (% of which can be sourced from therapeutic phlebotomy)	5454 (9.24%)
Units of blood transfused in the operating room (% of which can be sourced from therapeutic phlebotomy)	611 (82.49%)
Units of blood transfused in the entire hospital (% of which can be sourced from therapeutic phlebotomy)	6065 (8.31%)

**Figure 1**

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