



**36<sup>th</sup> South African  
NATIONAL BLOOD  
Transfusion Congress**

**22 – 25 August 2022 - Durban**

**SHAPING A SUSTAINABLE FUTURE**

# A Retrospective Analysis Of Aphaeresis Services In Zimbabwe From 2017 - 2021

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# Background

- According to World Health Organisation (WHO), Zimbabwe is one of the African countries that reported aphaeresis donations on a regular basis from 2010 to 2020.
- At National Blood Service Zimbabwe (NBSZ), aphaeresis is done for therapeutic plasma exchange, plasma and platelet collection.
- NBSZ is planning to expand the aphaeresis service to other branches, Mutare, Masvingo and Gweru. Harare and Bulawayo already doing the procedures.
- NBSZ is planning to offer services such as Stem Cell Harvesting, Leukocyte apheresis.
- This study was done to analyse the aphaeresis business offered by NBSZ before and during COVID-19 pandemic era.

# Methods

- A retrospective review of apheresis records available at NBSZ was done.
- The number of platelets collected via aphaeresis were recorded and analysed in excel.
- Medical conditions that were managed using aphaeresis were also extracted from both manual records and the NBSZ Blood Management system, e-Delphyn.

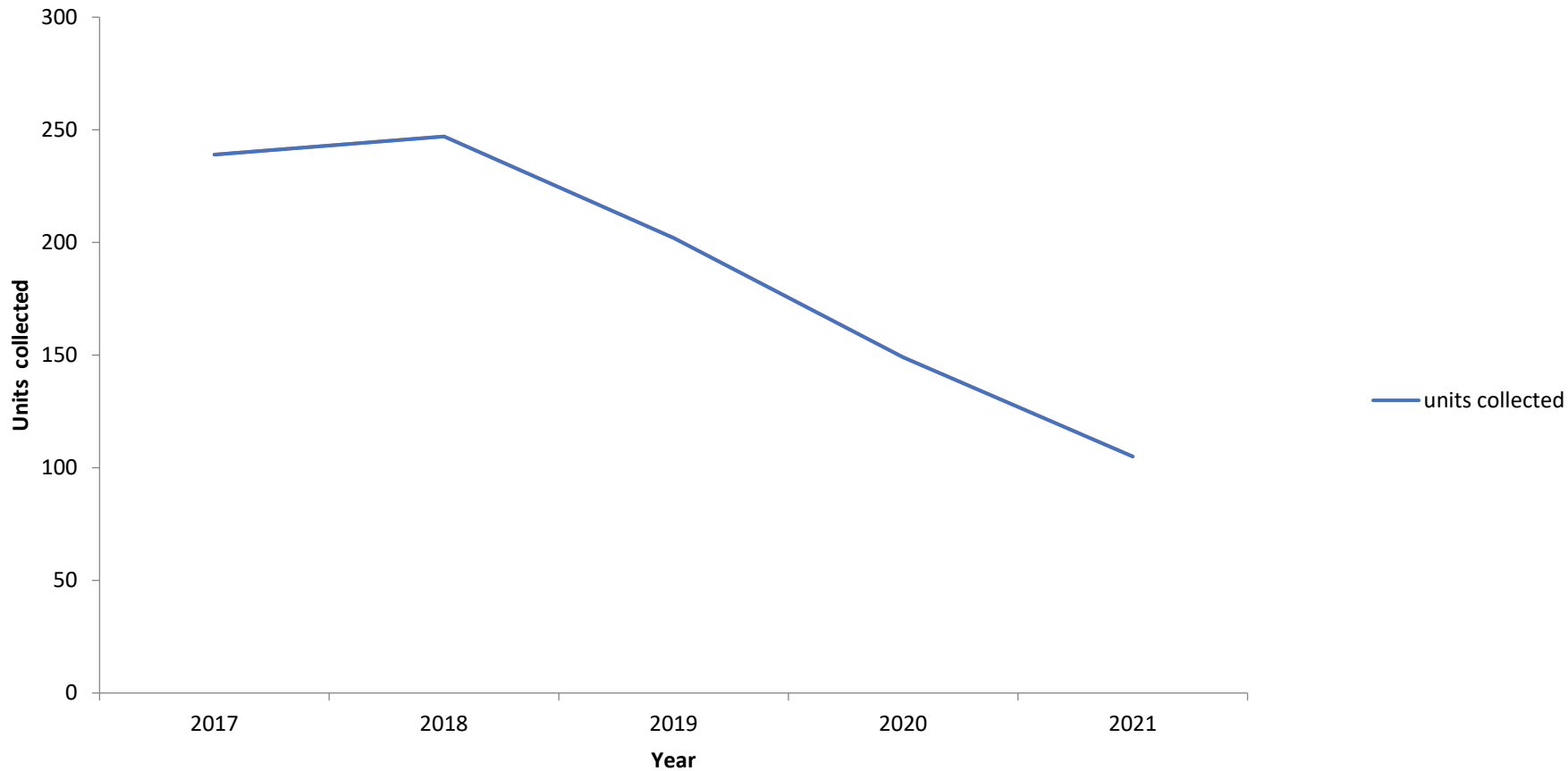
# Results

- The number of platelets collected via aphaeresis increased between 2017 and 2018.
- The units collected reached its peak in 2018 before showing a sharp decline up to 2021.
- The medical conditions that were managed using Apheresis Platelets were, cancer patients, severe burns and blood loss, among other clinical interventions in patient management that required platelets.
- The decline could be due to migration of our regular donors due to economical changes in the country and also the breakdown of the machines contributed, then 2020 to 2021, the COVID-19 pandemic also contributed.

## Number of Platelets collected 2017-2021

	APHERESIS (PLT2 )	STANDARD (PLT1 )	TOTAL
Produced	1099	9839	10938
Distributed	1099	9839	10938
Demand			15151
Failed to Supply			4213
Revenue generated	USD 692370	USD 1377460	USD 2069830

# Platelets units collected via Apheresis

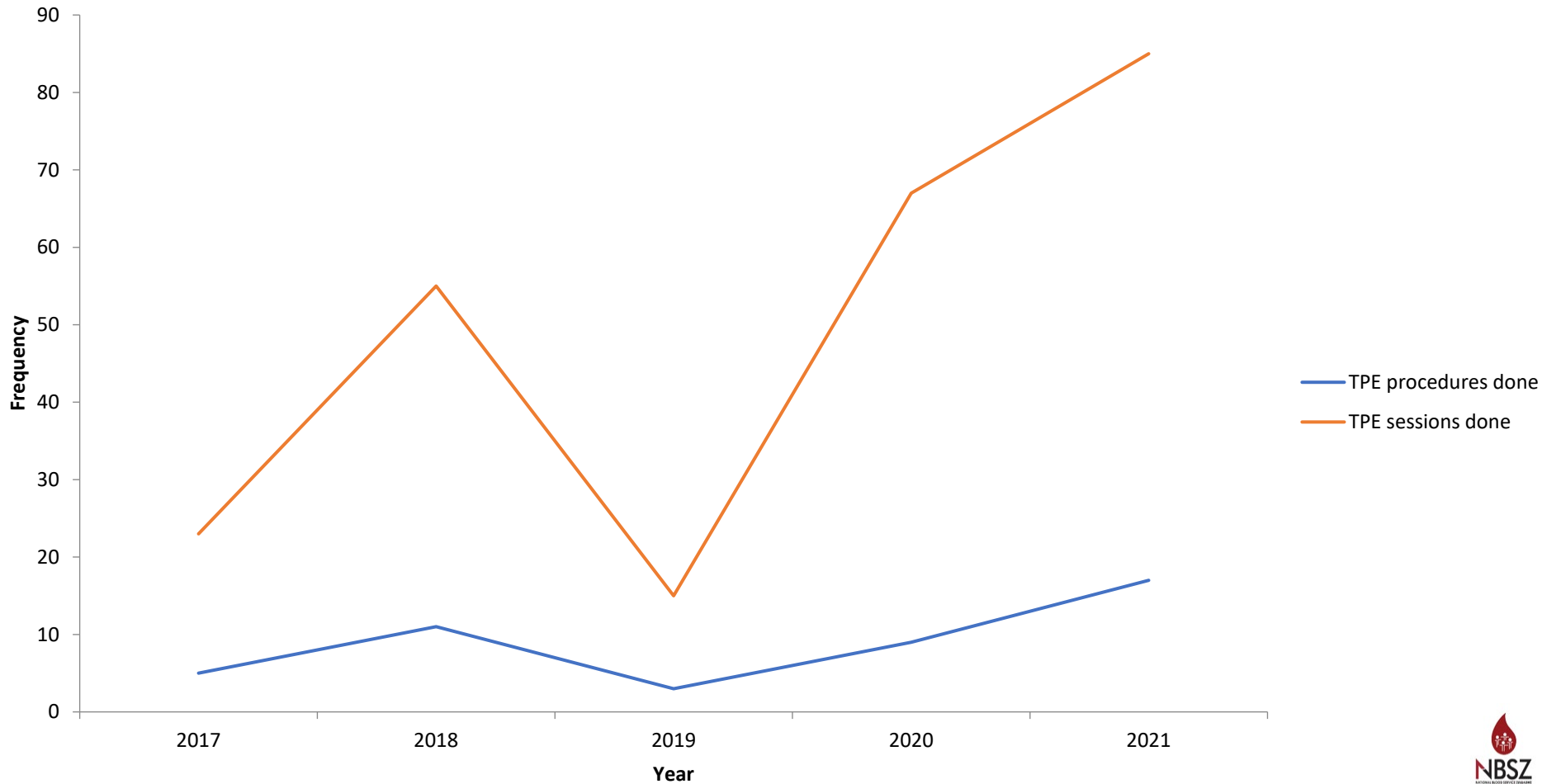


# Results cont

- The total patients who received TPE from 2017-2021 were 45
- A total of 245 TPE sessions were done.
- Both the TPE procedures and sessions done increased between 2019 and 2021.
- The increase in the number of procedures was maybe due to the awareness done to the Specialist Doctors In the Hospitals by NBSZ Medical Consultant about the services offered by NBSZ.
- The graph below is showing the TPE procedures and sessions done from 2017 to 2021.
- Most patients who received TPE were suffering from Guillain Barr Syndrome (36%)



# TPE procedures and sessions done 2017-2021



# Results cont

## Cost for purchasing Kits:

	TPE	APHERESIS
Cost of kits	2835.29 (USD 190)	3265.50 (USD218)
Albumin 100mls x2vials	USD \$144	
ACD-A	117.60 (USD 8)	117.60 (USD 8)
<b>Total in Rands</b>	<b>2952.89 =( USD 342)</b>	<b>3383.10(USD 226)</b>

## Cost For The Patient

TPE Kit	432 USD	432 USD
Albumin 20% 100mls x2	280	0
ACD-A	8	8
FFPs x4 units	0	560
Transport	20	20
<b>Total</b>	<b>740 x5 sessions=</b>	<b>1020 x5 sessions=</b>

# Results cont

- TPE procedures = number of patients who had TPE
- TPE sessions = Number of times a patient had TPE
- Most patients have maximum of 5 sessions each depending on the doctor.
- These sessions are done on alternate days.
- Those patients with financial challenges had 3 sessions each on alternate days.
- The table below is showing the revenues realized from the procedures;

<u>TPE with FFPs</u>	<u>TPE with Albumin</u>	<u>Apheresis</u>
USD 534 x5= 3390	USD254 x5 =1990	USD 544

# Results cont

- The medical conditions that were managed with therapeutic plasma exchange from 2017 to 2021 in Zimbabwe were:
  - Guillain Barr Syndrome, Myasthenia Gravis
  - Acute Transverse Myelitis
  - Polyneuropathy (CIDP)
  - Chronic Inflammatory Demyelinating Polyneuropathy
  - Thrombotic Thrombocytopenia
  - Optic Neuritis, Multiple Sclerosis Plus Optica Neuritis
  - Chronic Myeloid Leukaemia
  - Granulomatosis with Polyangiitis (Wingers)
  - Acute Pancreatitis Secondary to Hypertriglyrides.

# Conclusion

- TPE services is in demand in Zimbabwe.
- There is need to carry out market research to determine the level of demand throughout the country.
- NBSZ also need to continue collecting aphaeresis platelets.



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