

# OCCURRENCE OF GLUCOSE-6-PHOSPHATE DEHYDROGENASE DEFICIENCY IN BLOOD DONORS AT THE REGIONAL BLOOD TRANSFUSION CENTRE, MOMBASA Baariu.FK, Wigina.RN

## Introduction

Glucose-6-phosphate-dehydrogenase deficiency (G6PDd) is an X-linked hereditary genetic effect that has been estimated to affect 400 million people worldwide. This deficiency is associated with hemolytic disorders depending on the molecular variants and exposure to hemolytic triggers such as anti-malarial drugs like Primaquine and foods such as fava beans. Symptoms can go asymptomatic unless triggered by oxidative stress. Transfusion of blood with this deficiency may result in complications including neonatal jaundice.

## Methods

Methaemoglobin reduction test (MRT) was used to determine the occurrence of G6PDd in blood donors at the regional blood transfusion centre (RBTC)-Mombasa. Samples were collected from the centre, transported to the laboratory and analyzed to observe the activity of G6PD.

Blood samples that took the brown color had defective G6PD activity and normal blood with normal levels took the red color of the lysed blood. Those that did not match the brown or red color were referred to as intermediates.

## Conclusion

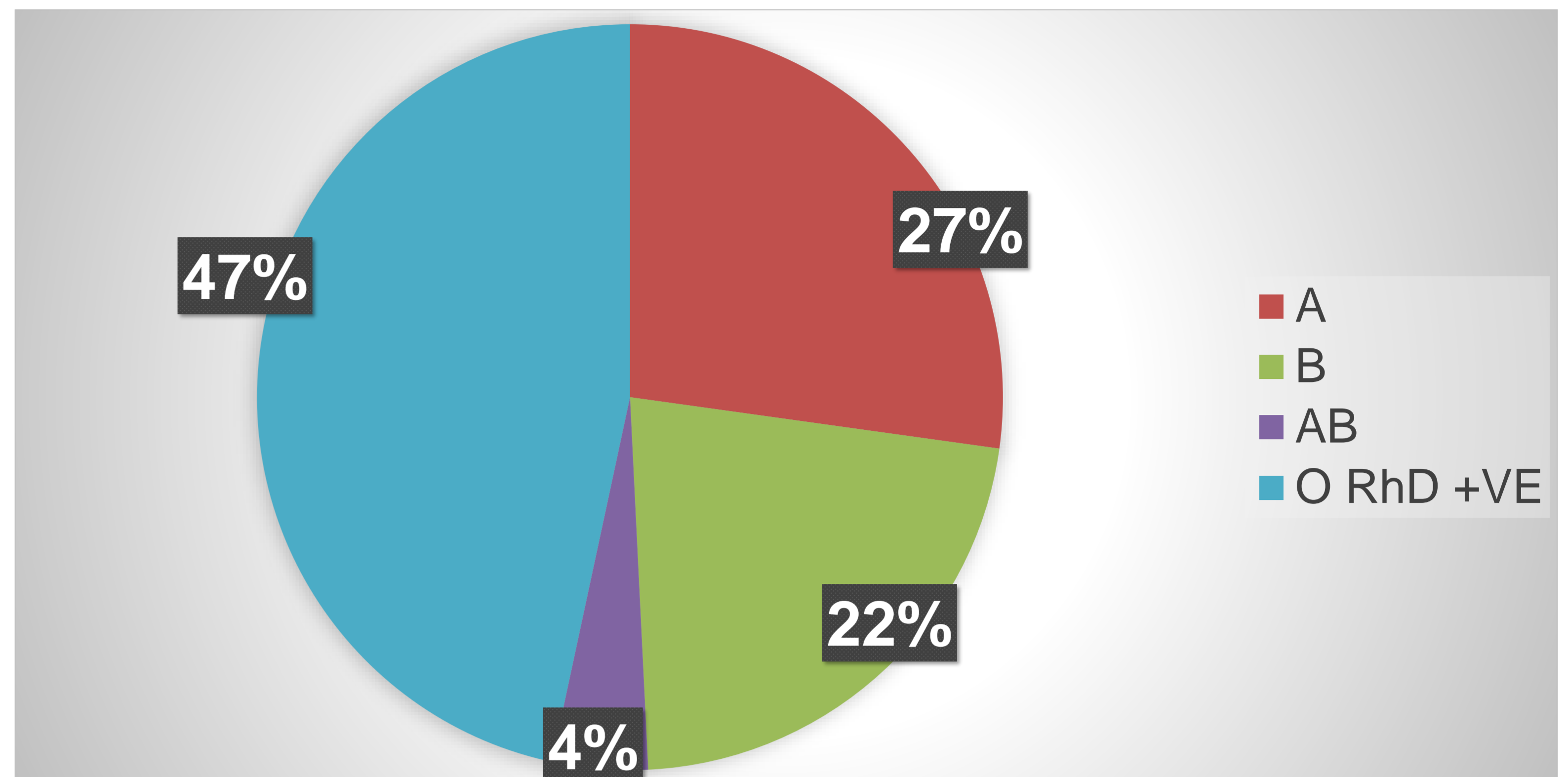
- G6PDd exists among healthy donors as either variants with slightly less than normal activity to those with very diminished activity.
  - There is a higher probability that a blood group "A" person is more likely to have G6PDd in comparison to other ABO blood types.
  - G6PD deficient individuals will not necessarily have a low haemoglobin level.
- deficiency

## References

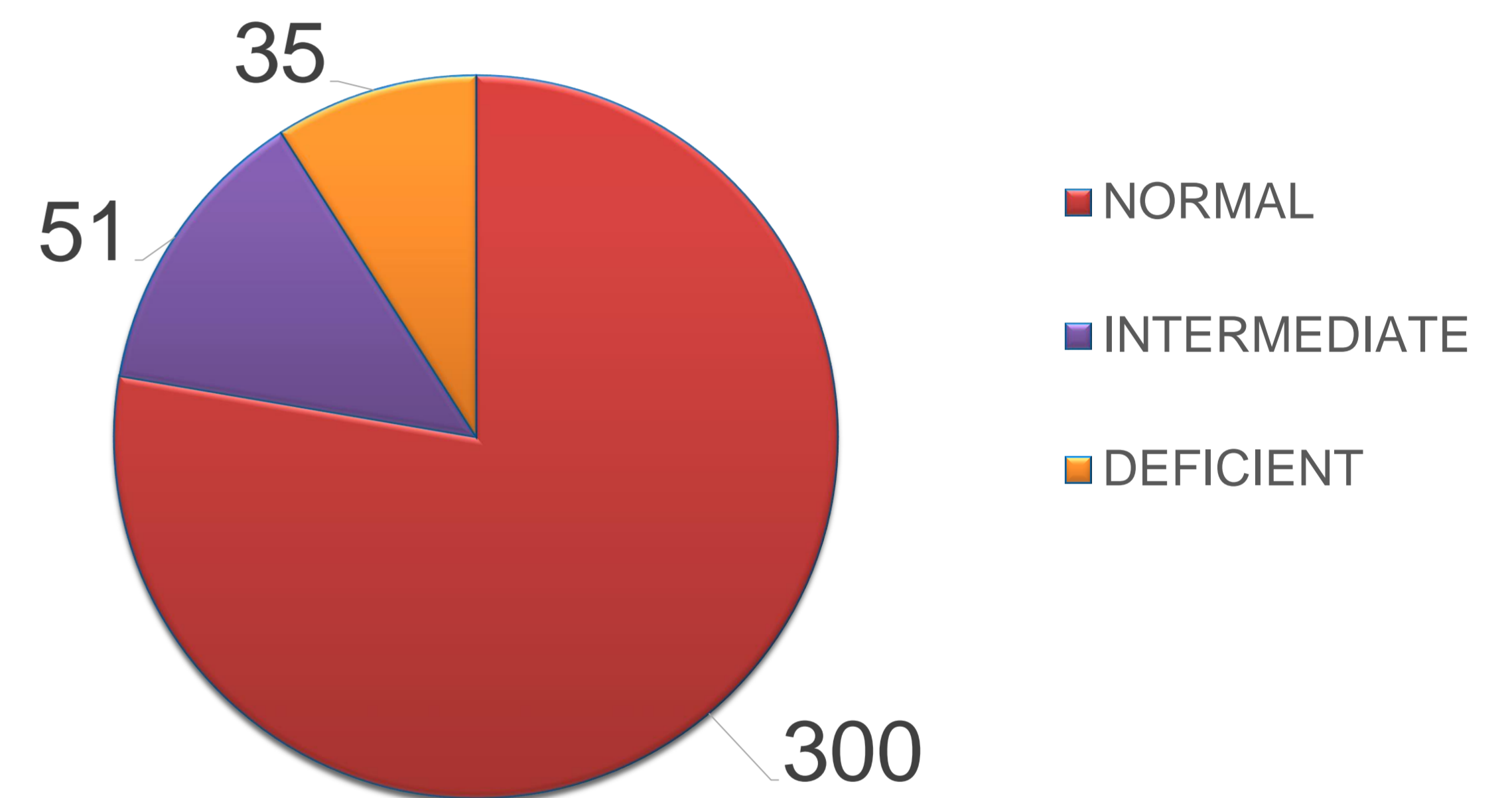
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## Results

### ABO blood groups



### G6PD deficiency among healthy donors



### ABO and G6PDd

ABO blood group	G6PDd	Proportion	Probability	% Proportion
A	Normal	77	0.733333	73.3333
	Intermediate	17	0.161905	16.1905
	Deficient	11	0.104762	10.4762
B	Normal	65	0.764706	76.4706
	Intermediate	15	0.176471	17.6471
	Deficient	5	0.058824	5.88235
AB	Normal	14	0.875	87.5
	Intermediate	1	0.0625	6.25
	Deficient	1	0.0625	6.25
O	Normal	144	0.8	80
	Intermediate	18	0.1	10
	Deficient	18	0.1	10

### Impact/moving forward

- Donors should be screened before donating blood
- Further studies should be done on G6PD deficiency

### Acknowledgement

