Effect of COVID-19 on the blood supply in a Caribbean country

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Introduction

• Arrangement of blood donation system in Trinidad and Tobago (TTO)

• National blood donations 6 months before and 6 months after first COVID case

• Voluntary non-remunerated blood donations in period

• Medical student attitudes to blood donation during pandemic

• Conclusions and recommendations
TTO Blood transfusion system arrangement

- Six hospital-based donation centres (replacement and remunerated donors)
- One mobile unit (remunerated donors)
- University of the West Indies Blood Donor Foundation (UWIBDF) voluntary non-remunerated donors (VNRD) since 2015 at Eric Williams Medical Sciences Complex (EWMSC)
- Policy, guidelines established and monitored by National Blood Transfusion Service, Ministry of Health (NBTS, MOH)
- Annual blood bank data to Pan American Health Organization/World Health Organization (PAHO)
- First case COVID-19 March 22nd 2020
TTO Blood transfusion system arrangement

- **POSGH** - Port of Spain General Hospital
- **SFGH** - San Fernando General Hospital
- **EWMSC** - Eric Williams Medical Sciences Complex
- **SGCH** - Sangre Grande County Hospital
- **AHPF** - Area Hospital Point Fortin
- **SRH** – Scarborough Regional Hospital
Methodology

• Observational, retrospective study

• Records from National Blood Transfusion Service, EWMSC transfusion laboratory and UWIBDF for period six months preceding and six months national lockdown for COVID

• SPSS for data analysis. Chi square for significance of associations and logistic regression for correlation analysis
March – September donations national

- 2019: 11,556 donations
- 2020: 10,679 donations

$p < 0.001$
National Blood donations in six months before and after first COVID case
Annual donations 2019 and 2020
2020 donations
Total national donations in 6 months preceding and succeeding national lockdown

<table>
<thead>
<tr>
<th>Organization</th>
<th>Before</th>
<th>After</th>
</tr>
</thead>
<tbody>
<tr>
<td>MU</td>
<td>9349</td>
<td>9340</td>
</tr>
<tr>
<td>POS</td>
<td>9335</td>
<td>9345</td>
</tr>
<tr>
<td>SFGH</td>
<td>9340</td>
<td>9345</td>
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<tr>
<td>EWMSC</td>
<td>9345</td>
<td>9350</td>
</tr>
<tr>
<td>SGCH</td>
<td>9350</td>
<td>9355</td>
</tr>
<tr>
<td>AHPF</td>
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<td>9360</td>
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<tr>
<td>TRHA</td>
<td>9360</td>
<td>9365</td>
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</table>

$p = 0.879$
## Pattern of donations at EWMSC

<table>
<thead>
<tr>
<th></th>
<th>6 months preceding</th>
<th>6 months following</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family replacement %</td>
<td>90.9</td>
<td>92</td>
<td>0.14</td>
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<tr>
<td>Remunerated* %</td>
<td>4.5</td>
<td>3.6</td>
<td>0.63</td>
</tr>
<tr>
<td>Voluntary non-remunerated %</td>
<td>4.5</td>
<td>4.4</td>
<td>0.88</td>
</tr>
<tr>
<td>Total</td>
<td>2559</td>
<td>2951</td>
<td>&lt; 0.001</td>
</tr>
</tbody>
</table>
UWIBDF donations 2015 - 2020

Donations (No.)

Event #

COVID
<table>
<thead>
<tr>
<th>Variable</th>
<th>Pre - COVID</th>
<th>During COVID</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25 year old</td>
<td>52%</td>
<td>45%</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Female</td>
<td>54%</td>
<td>78%</td>
<td>&lt; 0.05</td>
</tr>
<tr>
<td>Repeat</td>
<td>51%</td>
<td>55%</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>
Deterrents to blood donation during COVID among medical students
(n = 282)

- Fear of contracting COVID: 32.4%
- Underweight: 30.2%
- Poor health: 23.7%
- Fear of needles: 14.4%
- No reason: 10.8%
- Piercing/tattoo: 6.5%
- Religious beliefs: 4.3%
- Unaware of donation procedure: 0%

Percentage
Summary of findings

• The total number of blood donations did not change significantly in the six months preceding compared to the six months following imposition of COVID-19 restrictions

• The number of VNRD donations per blood drive decreased significantly

• The proportion of female and repeat VNRDs rose during COVID

• Fear of contracting COVID was the main deterrent to blood donation among a sample of medical students
Discussion

• MOH call for VNRD increased replacement donations despite reduction in elective surgeries, lockdown, social distancing
• Increased efficiency at donation centres
• University closure changed age demographics of VNRDs
• Repeat, female VNRDs more reliable
• Fear of COVID transmission by donation major VNRD deterrent? overcome by coercion of replacement
Conclusions

• MOH VN RD campaign encouraged FRD and remunerated donors
• Family member in need or remuneration stronger motivators than altruism
• Females and repeat VN RDs most reliable
Recommendations

• A national blood donor campaign that explains the different types of blood donor
• Donor education about COVID – 19 and blood donation
Acknowledgements
Summary

• Trinidad and Tobago country data
• Blood donation system in Trinidad And Tobago
• National blood donations 6 months before and after first COVID case
• Voluntary non-remunerated blood donations in period
• Medical student VNRDs
• Conclusion and recommendations
References


