

# giveblood.ie



Dr. Allison Waters | Research & Development Lead Facilitator
6<sup>TH</sup> OCTOBER 2021



WE LOVE OUR DONORS



WE IMPROVE PATIENTS LIVES, TOGETHER



WE LEAD BY EXAMPLE



WE STRIVE FOR EXCELLENCE





# Research & Development

- Strategy 2021 2023
- Priorities
- Research themes
- Current projects
- What's next









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# Research & Development

Strategy 2021-2023

The outcomes of high-quality research may positively impact a broad range of health-related fields including blood science, transfusion, transplantation, public health policy, clinical interventions and epidemiology. We must provide the framework for carrying out applied research, communicating insights and to help position us as a key leader for advocacy, advice and guidance.





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# Research & Development

Strategy 2021-2023

### Vision

 Researching, developing and innovating our blood and tissue services by harnessing the expertise of our people, and through collaboration with clinical and academic partners.

### Mission

 Committed to providing the research evidence for improving and developing our blood and tissue services to patients, through collaboration with our donors, the expertise of our people and of our clinical and academic partners.

# **Objectives**

- Improved Donation and Donor Care
- Progressive Blood Service
- Clinical Leadership





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### **Priorities**

- Research pathway provision
- Community engagement
- Build on research strengths
- Technological advancements
- Academic affiliation
- Economic value
- Leadership
- Showcase
- Research culture

### **Focus**

- Governance and infrastructure
- Scope
- Communication
- Collaboration
- Engagement







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# Research Themes

Strategy 2021-2023



Disease & Genetic Epidemiology



Donation and Deferral



Applied Diagnostics and Technical Advancement



Clinical evaluation of blood transfusion







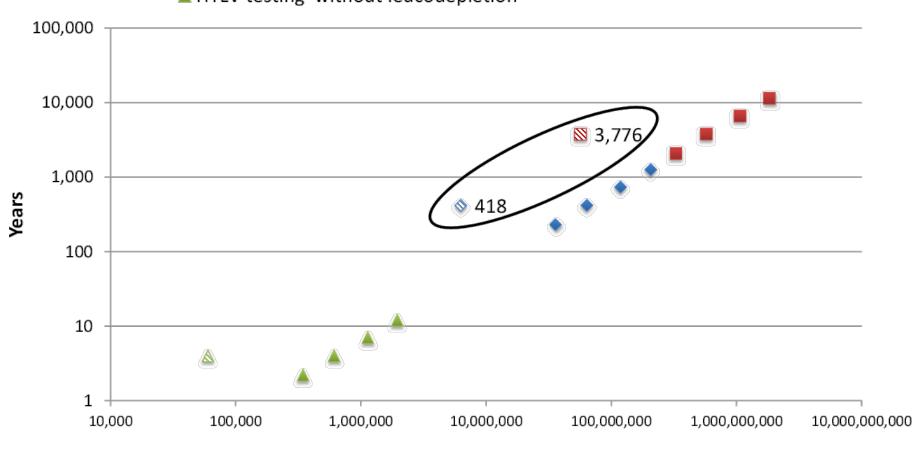




### Human T-Lymphotropic Virus Transfusion Transmitted Infection Risk: Impact On Future Testing Strategy

Pádraig Williams<sup>1</sup>, Niamh O' Flaherty<sup>1,2</sup>, Stephen Field<sup>1,3</sup>, Allison Waters<sup>1</sup>

- <sup>1</sup> Irish Blood Transfusion Service, National Blood Centre, IRELAND
- <sup>2</sup> UCD National Virus Reference Laboratory, University College Dublin, IRELAND
- <sup>3</sup> School of Medicine, Trinity College Dublin, IRELAND
- ◆ HTLV testing with leucodepletion filter failture rate of 3.6x10<sup>5</sup> cells/pack
- HTLV testing with leucodepletion filter failure rate of 1x10<sup>6</sup> cells/pack
- ▲ HTLV testing without leucodepletion











No of donations

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# SARS-CoV-2 Seroprevalence in Irish Blood Donors

Dearbhla Butler<sup>1</sup>, Dermot Coyne<sup>1</sup>, Louise Pomeroy<sup>1</sup>, Pádraig Williams<sup>1</sup>, Paul Holder<sup>4</sup>, John C Prostko<sup>2</sup>, Alex Carterson<sup>2</sup>, Stephen Field<sup>1,3</sup>, Allison Waters<sup>1</sup>, Niamh O'Flaherty<sup>1,4</sup>.

<sup>1</sup> Irish Blood Transfusion Service, National Blood Centre, IRELAND;
 <sup>2</sup> Abbott Laboratories, UNITED STATES
 <sup>3</sup> School of Medicine, Trinity college Dublin, IRELAND;
 <sup>4</sup> UCD National Virus Reference Laboratory, University college Dublin, IRELAND

Figure 1: SARS-CoV-2 antibody detection in donations received between February and September 2020.

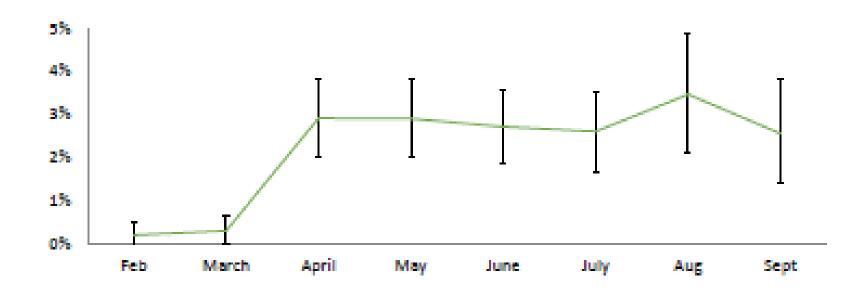
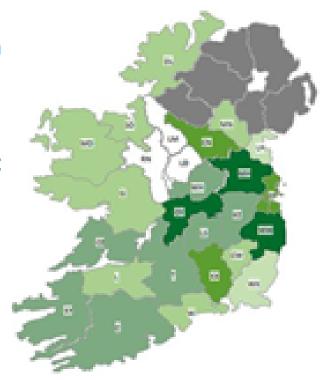
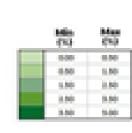


Figure 2: Comparison of SARS-CoV-2 antibody detection in donations received from different geographical locations throughout Ireland.









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# The impact of donor biological variation on the quality and function of cold stored platelets

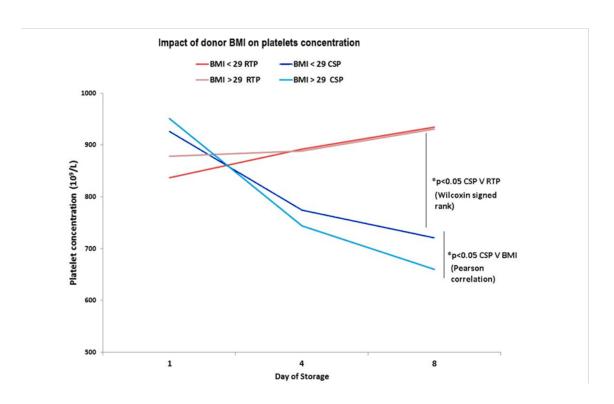
Alice Lorusso1,2, Harry Croxon1, Sarah Faherty-O'Donnell1, Áine Fitzpatrick1, Aileen Farrelly1, Stephen Field1,3 Allison Waters1

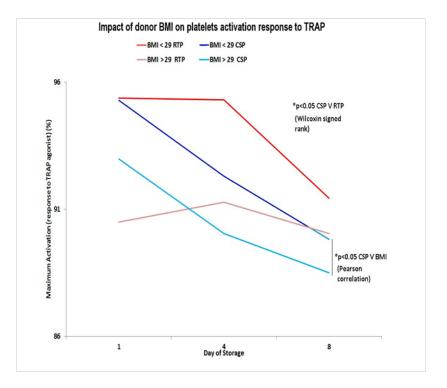
- <sup>1</sup> Irish Blood Transfusion Service, National Blood Centre, IRELAND
- <sup>2</sup> Biomedical Sciences Research Institute, University of Ulster, NORTHERN IRELAND.
- <sup>3</sup> School of Medicine, Trinity College Dublin, IRELAND

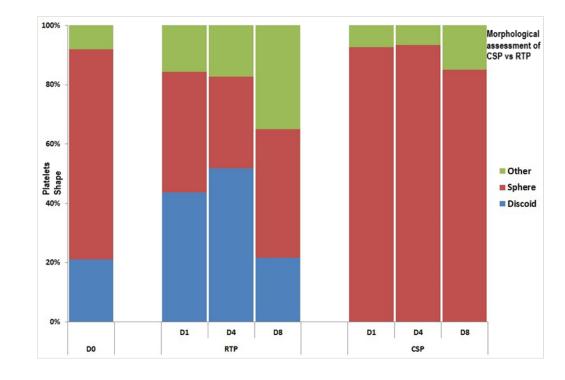
Figure 1: *Impact of donor BMI on the* platelet concentration over 8 days of either room temperature or cold storage.

Figure 2: Impact of donor BMI on the platelet's activation response to TRAP over 8 days of either room temperature or cold storage

Figure 3: Morphology assessment of platelets over 8 days of either room temperature or cold storage.











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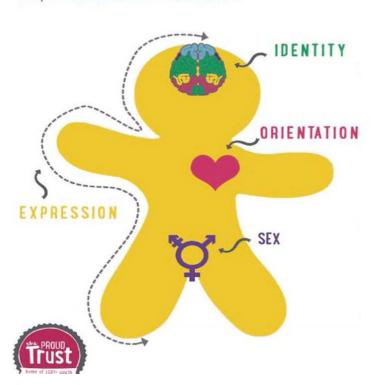


# Transgender Donors and Blood Donation in the Irish Blood **Transfusion Service.**

Ms. Jennifer Harkin (she/her), Ms. Shonagh Ward (she/her), Dr Louise Pomeroy (she/her), Dr Ellen McSweeney (she/her). Irish Blood Transfusion Service.

### THE GENDERBREAD PERSON

Original concept by itspronouncedmetrosexual.com



#### GENDER IDENTITY WOMAN NON-BINARY Your gender identity is how you think about yourself, the gender that you identify

with and/or feel that you are. Some people feel as though they do not have a gender at all, and may refer to themselves as agender or non-gendered.

#### GENDER EXPRESSION

#### FEMININE

#### ANDROGYNOUS

#### MASCULINE

This is how you display your gender and is demonstrated through the ways that you act, dress, behave and interact in the world, in relation to the gender expectations of your society.

### BIOLOGICAL SEX Q

#### FEMALE

#### INTERSEX

ATTRACTED

TO MEN

This is usually determined at birth, based on observation of your genitals. However, your chromosomes, hormones, genes and internal sex organs also contribute to the make-up of your biological sex.

#### SEXUAL ORIENTATION

### ATTRACTED TO WOMEN

BI/PANSEXUAL

The types of people, (often based on gender.) that you find yourself attracted to, can help you determine your sexual orientation. Attraction can be emotional, sexual, physical and/or spiritual. Some people experience little or no sexual attraction, and may refer to themselves as asexual.

Donor eligible to donate whole blood

Not suitable to be bled into a paediatric pack

Transgender

Test code 7400

Not suitable to donate platelets by apheresis

Not possible to separate plasma from whole blood.



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### A snapshot of ABO, RhD, Rh phenotype and Kidd profile in modern Ireland

A Browne<sup>1</sup>, A Kinsella<sup>2</sup>, M Keogh<sup>1</sup>, K Morris<sup>1</sup>, S Field<sup>1</sup> <sup>1</sup>Irish Blood Transfusion Service, National Blood Centre, Dublin 8. <sup>2</sup>Molecular and Cellular Therapeutics, Royal College of Surgeons Ireland, Dublin 2.

Figure 1: ABO BGS distribution for Ireland (n=3427)

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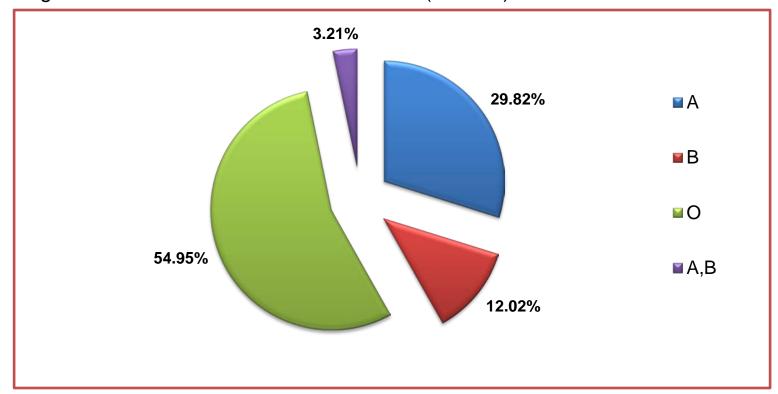
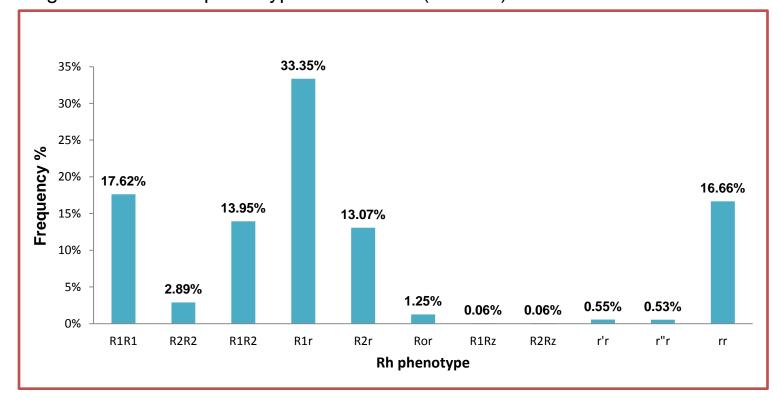


Figure 3: Irish Rh phenotype Distribution (n=3427)



















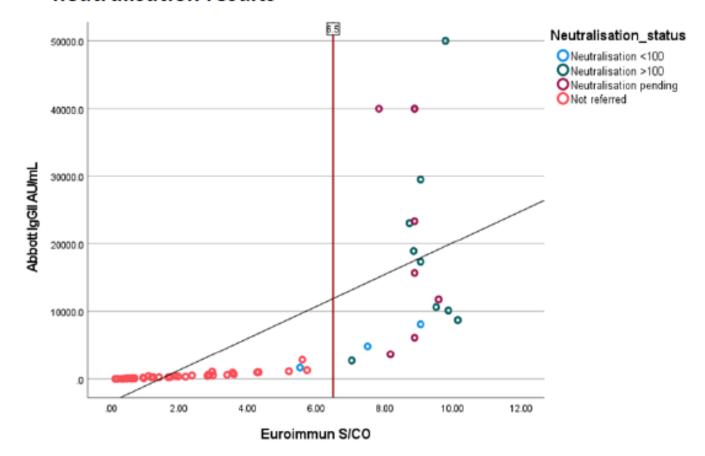
### COVID-19 Convalescent Plasma Production in Ireland

Allison Waters<sup>1</sup>, Mark Coyne<sup>2</sup>, Niamh O'Flaherty<sup>1,3</sup>, Ellen McSweeney<sup>1</sup>, Pádraig Williams<sup>1</sup>, Barry Doyle<sup>1</sup>, Sophie O'Reilly<sup>5</sup>, Virginie Gautier<sup>5</sup>, Paddy Mallon<sup>2,5</sup>, Dearbhla Butler<sup>1</sup>, Dermot Coyne<sup>1</sup>, Stephen Field<sup>1,4</sup>

- <sup>1</sup> Irish Blood Transfusion Service, IRELAND, <sup>2</sup> St. Vincent's University Hospital, Dublin 4, IRELAND;
- <sup>3</sup> UCD National Virus Reference Laboratory, University College Dublin, IRELAND; <sup>4</sup> School of Medicine, Trinity College Dublin, IRELAND
- <sup>5</sup> UCD Centre for Experimental Pathogen Host Research (CEPHR), School of Medicine, University College Dublin, IRELAND

- All aims were achieved (table 1)
- A total of 9/12 samples tested had neutralisation titres (IC50) >100. The Abbott SARS-CoV-2 IgGII Quant assay also shows a strong positive correlation with neutralisation (n=12) (r=0.82, P < 0.05).</li>
- 12 CCP products from 6 qualified donors have been produced

Figure 1: correlation of antibody screening titre and neutralisation results





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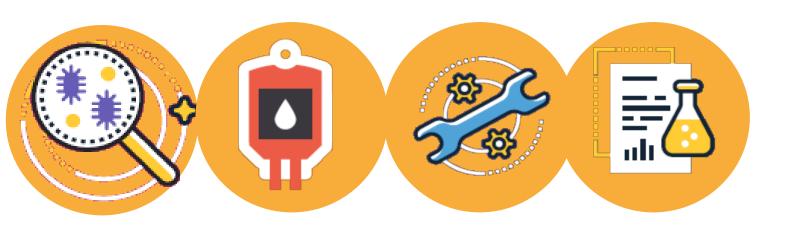




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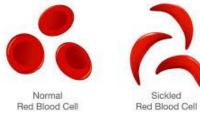
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# What's Next





Sickle-cell disease What we know & Current challenges



**Cellular Therapy** PhD | Immunological profile in patients undergoing cellular therapy



**DEHP-free Production and validation** of DEHP-free materials



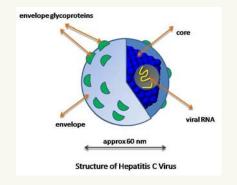
Iron & donor health **Donor Ferritin & Haemoglobin** 



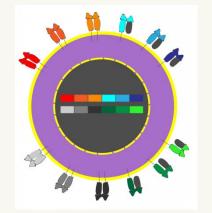
**Platelet-derived** extracellular vesicles **PhD | Characterisation of PEV** in blood components



SARS-CoV-2 On-going studies on SARS-**CoV-2** seroepidemiology



**Disease epidemiology Incidence of Hepatitis E** virus in donors



**Human Leukocyte Antigen HLA** typing and correlation with disease



**African Ancestry Donors** How best to recruit donors in order to maximise our service to patients



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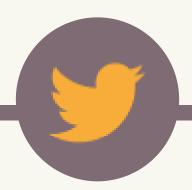
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# Connect with Us





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@DrAllisonWaters

LINKED IN

Irish Blood

Transfusion

Service

**INSTAGRAM** 

@Give blood.ie

https://www.linkedin.com/in/allison-waters-20550939/





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