



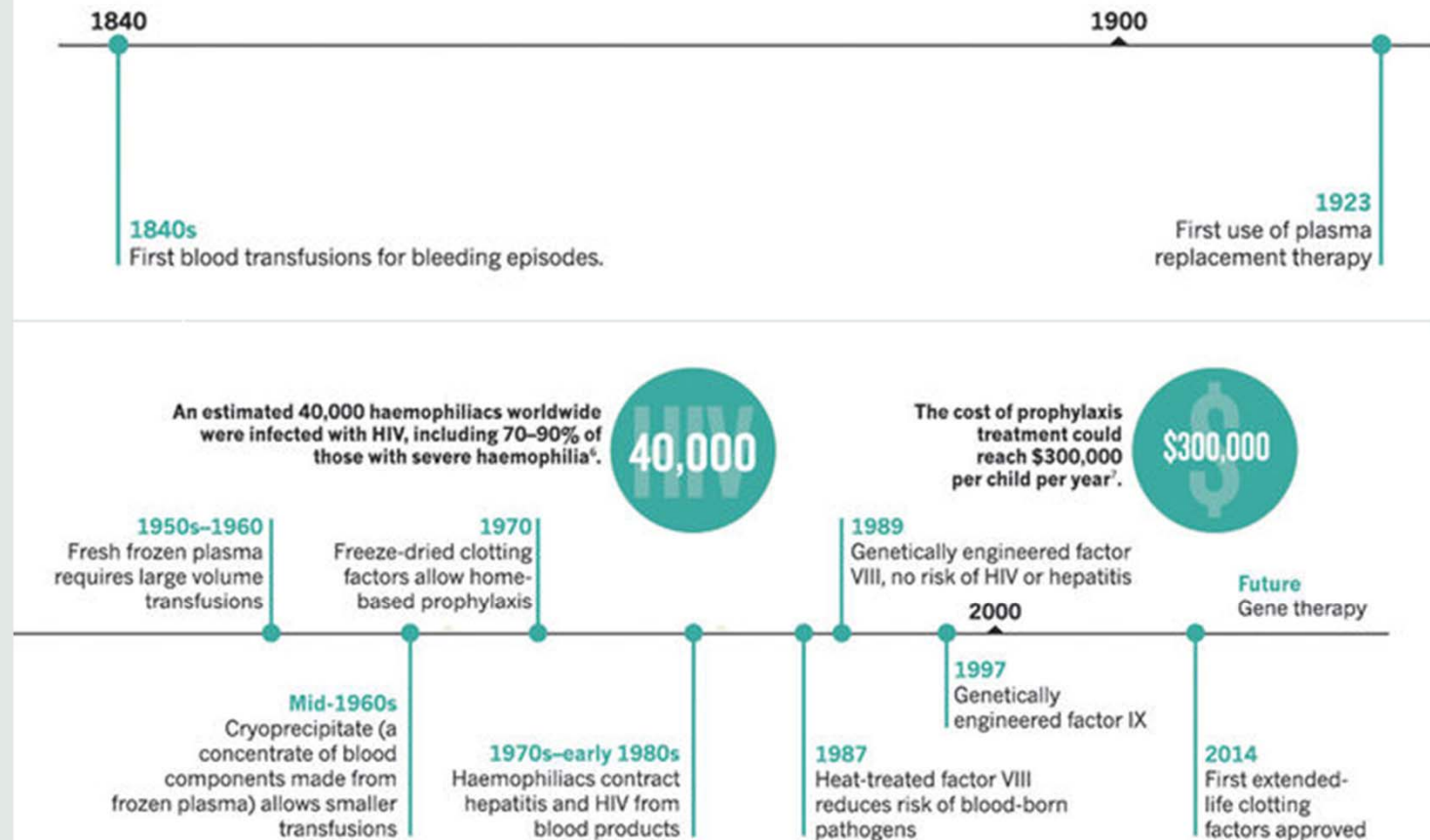
# New therapies

13 October 2022, HFA Webinar

Dr Sally Campbell (Acting  
Director RBWH HTC QLD)

## Past therapies

About two-thirds of the world's population lacks access to prophylaxis with clotting factors because the cost of treatment is too high.



# Current therapies

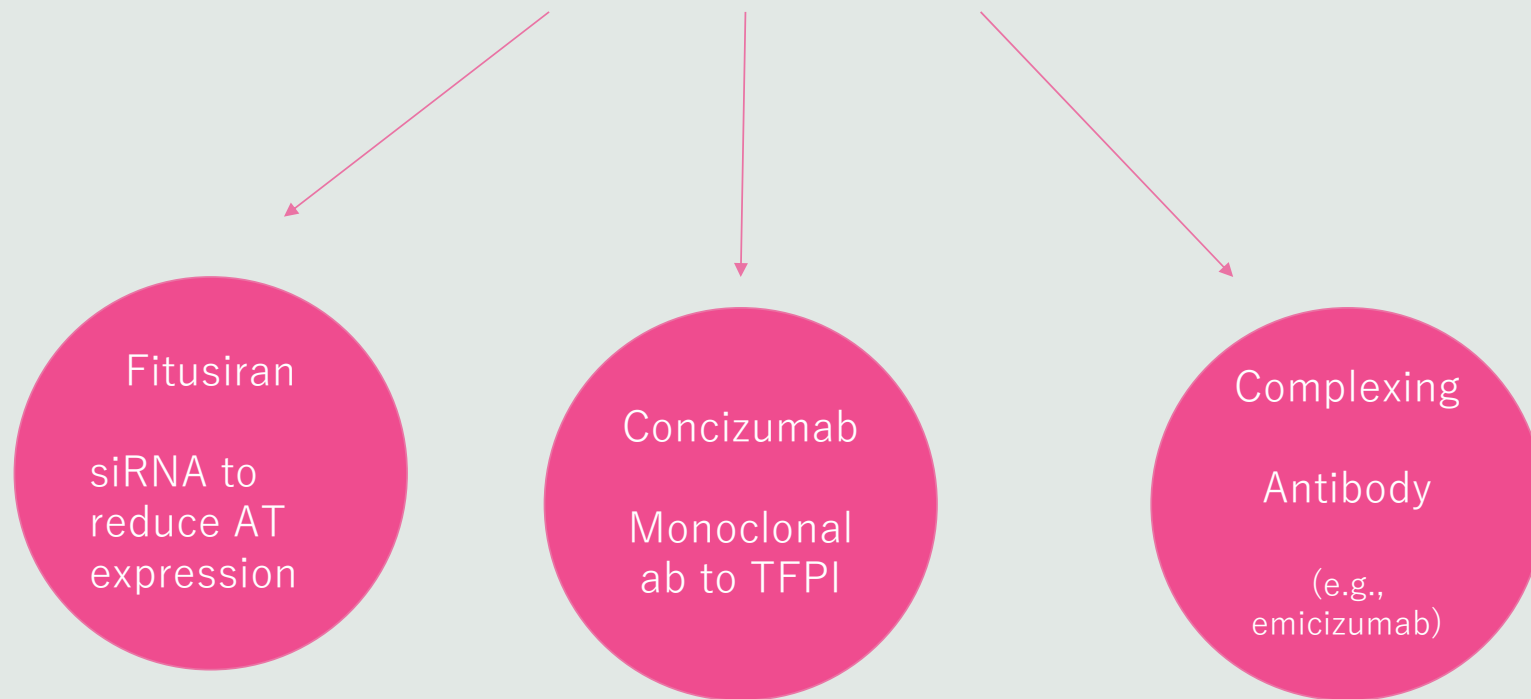
- **Haemophilia A**

- Plasma derived – Biostate<sup>®</sup> (VWF/FVIII)
- Standard half life FVIII – Advate<sup>®</sup>, Xyntha<sup>®</sup>
- Extended half life FVIII – Adynovate<sup>®</sup>, Eloctate<sup>®</sup> (T  $\frac{1}{2}$  19 hours, 1.5 x SHL)
- Emicizumab

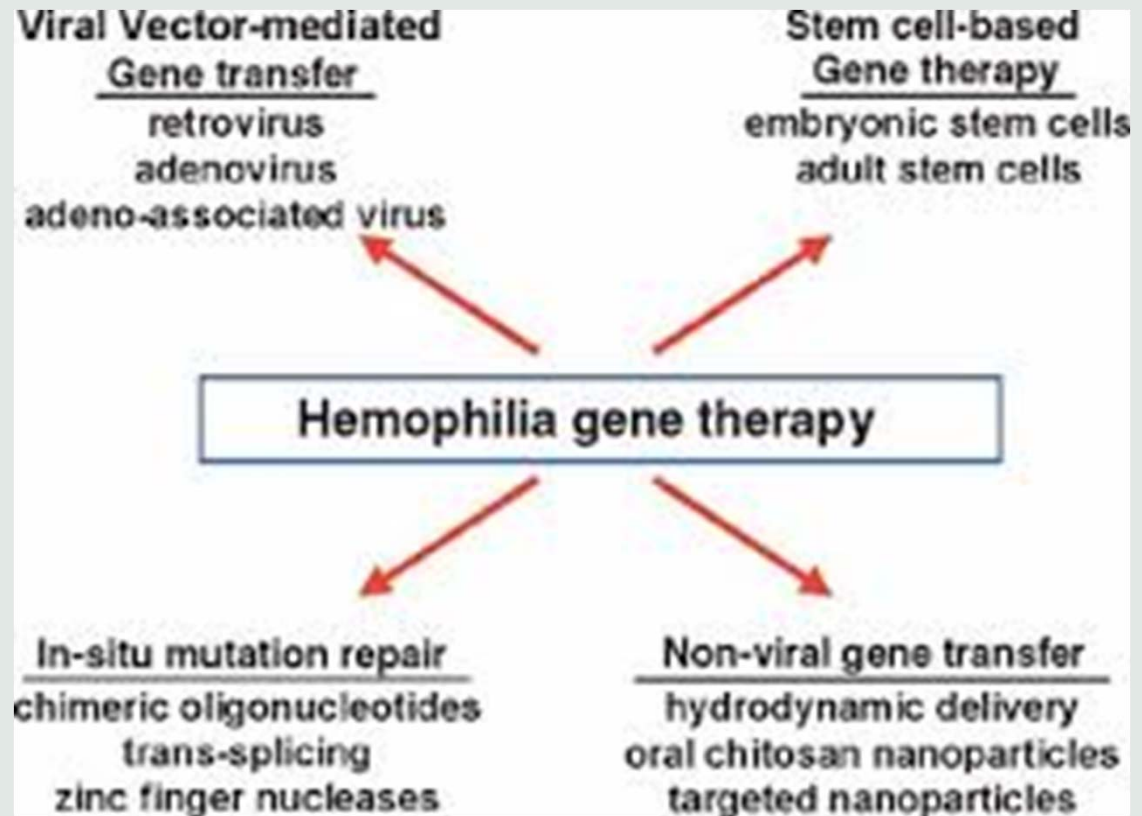
- **Haemophilia B**

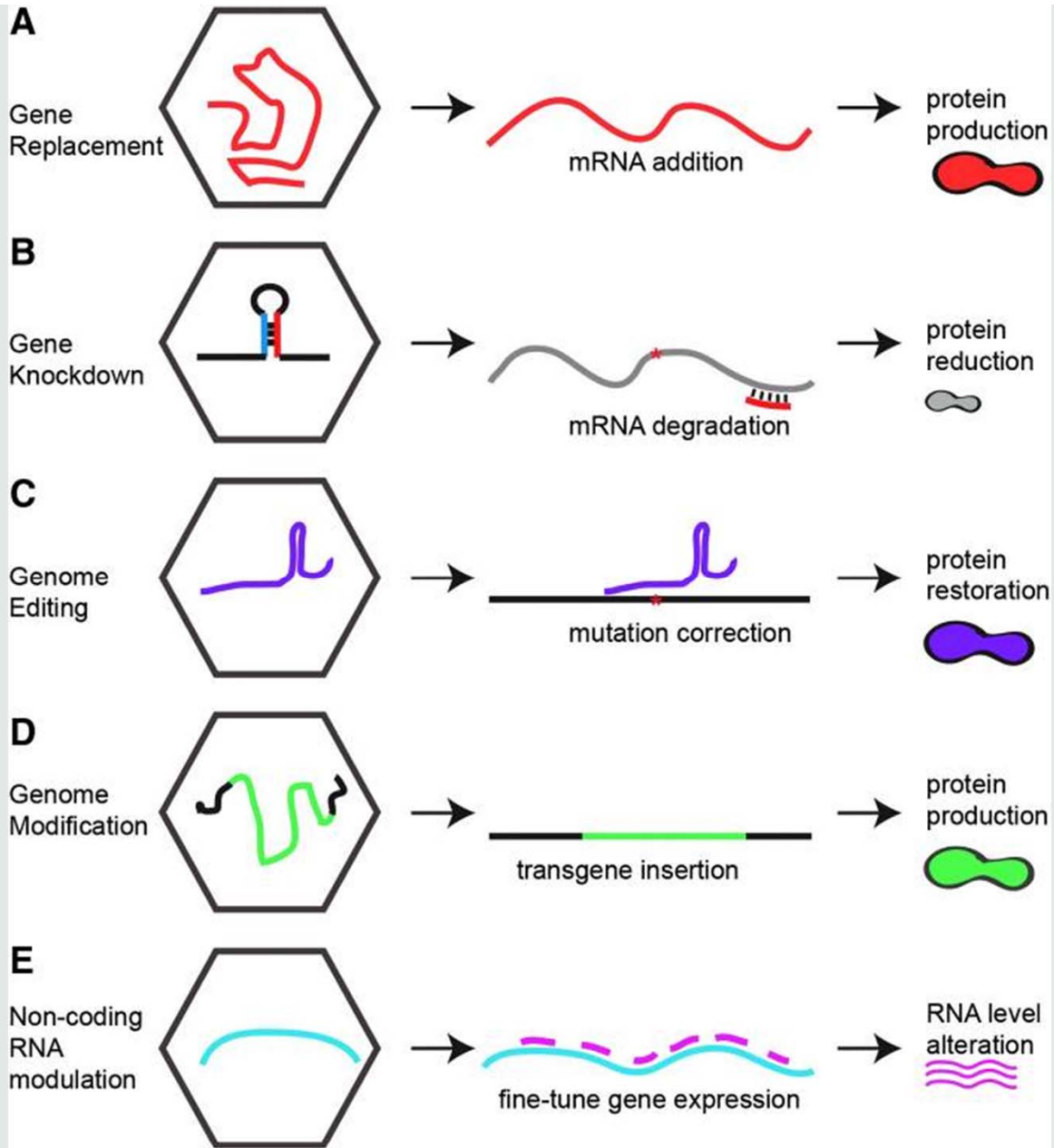
- Standard half life FIX – Benefix<sup>®</sup>
- Extended half life FIX – Alprolix<sup>®</sup> (T  $\frac{1}{2}$  57-83 hours, 3 x =SHL)

# Non-factor replacement strategies



# Gene therapy





The Vector  
AAV 5 – adeno associated virus

Lowest immune response  
Episomal & had integrates at a frequency of  
0.1%

Non-pathogenic, even in wild type format

## Seroprevalence for neutralizing antibodies to AAV vectors is critical for eligibility to gene therapy

Vector	Seroprevalence of neutralizing antibodies	Investigated population
AAV-2	59% 44% 44%	General population <sup>1</sup> Haemophilia B population <sup>4</sup> US paediatric haemophilia A population <sup>3</sup>
AAV-5	3.2% 17% 26%	General population <sup>1</sup> UK Adult haemophilia A population <sup>2</sup> US paediatric haemophilia A population <sup>3</sup>
AAV-6	37%	General population <sup>1</sup>
AAV-8	19% 23% 55%	General population <sup>1</sup> US paediatric haemophilia A population <sup>3</sup> Haemophilia B population <sup>4</sup>
SPK-9001 (Bio-engineered AAV)	41%	Haemophilia B population <sup>4</sup>
AAV-10	NA	NA

1. Boutin et al. Hum Gen Ther 2010; 21: 704-712; 2. Stanford et al. Haemophilia 2016; 22 (suppl 4): 3-138 3. Li et al. Gene Therapy 2012; 19: 288-294; 4. Angueta et al. Abstract presented at International Society on Thrombosis and Haemostasis June 20-25 2015, Toronto.

# Gene therapy

- 2011 the first paper was published following treatment
- EMA approval now for Roctavian (Haemophilia A) - Biomarin
- EMA is under review for Dezaparvovec (Haemophila B) - CSL



# Gene therapy in Australia

- Several HTC's in Australia (Brisbane, Sydney, Melbourne, Adelaide, Perth) are already involved in clinical trials for gene therapy, and have dosed patients
- AHCD0 soon to release a roadmap to Gene Therapy for Australia
- Several roadblocks are highlighted, including funding

# Patient considerations

