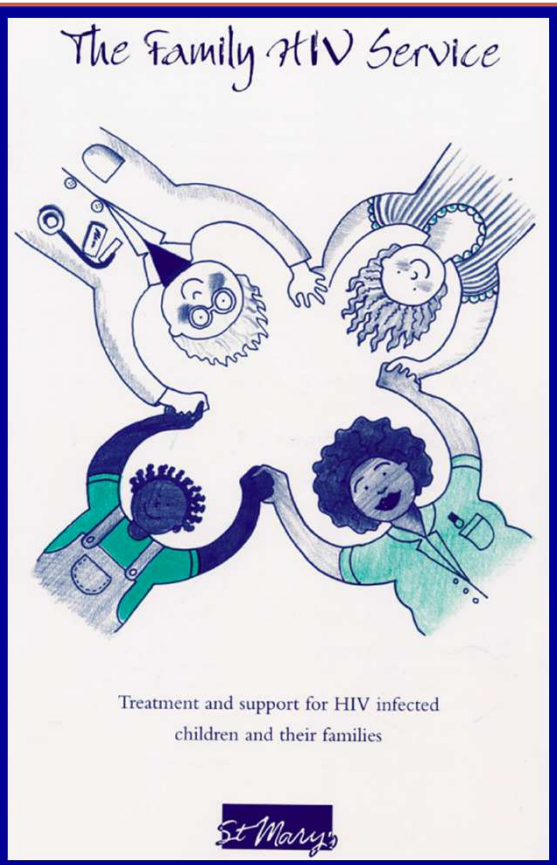

Referral patterns and treatment outcomes from a regional Paediatric Virtual Clinic

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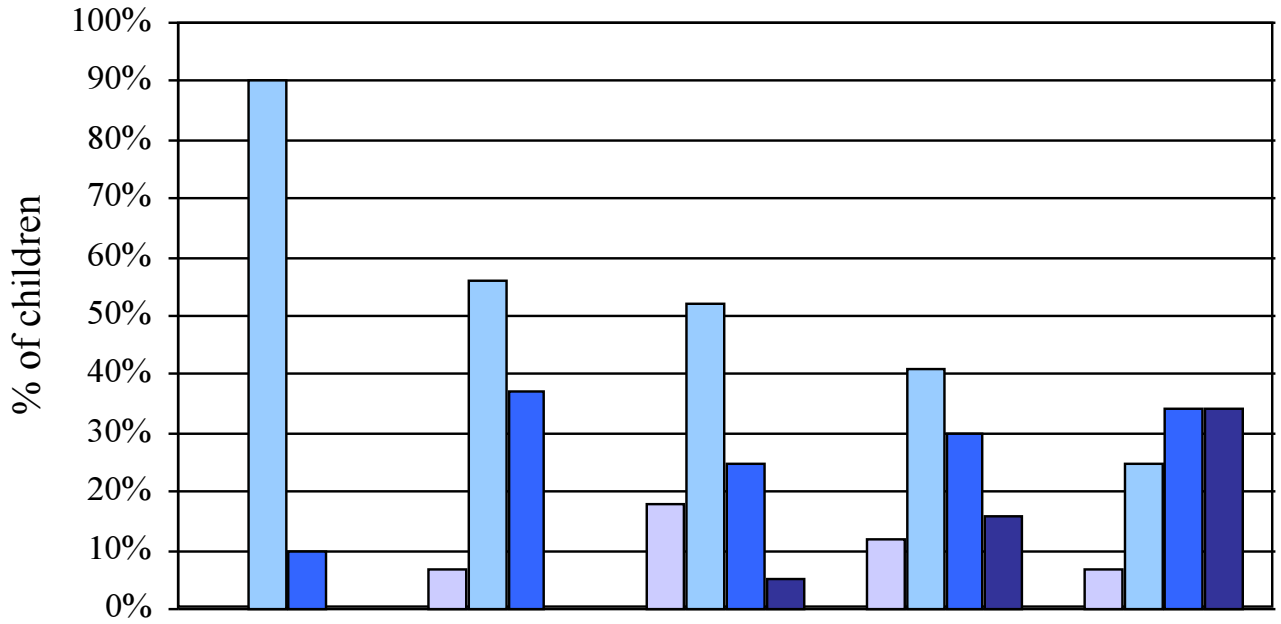
Background

- Paradigm shift from terminal illness to chronic disease in Children with HIV
- Children surviving to adulthood with chronic HIV infection and long term exposure to antiviral therapy
- Long term medication comes with increased risk of potential side effects, adherence issues and accumulated resistance
- Rapidly increasing range of HAART options makes management decisions ever more complex
- Childhood prescribing complicated by limited liquid/paediatric tablet formulations, reduced pharmacokinetic data and delayed access to newer drug classes[1,2,3].
- The small UK child HIV population limits treatment experience of individual centres.

References:
1. Prendergast A et al. 2007; 2. Maron G et al. 2010; 3. Welch S et al. 2009.

Antiretroviral drug experience 2013

N=1090 children with follow-up since January 2011



No. of children	< 2 years	2-4 years	5-9 years	10-14 years	≥15 years	**Total (%)**
Naive	0 (0%)	3 (7%)	39 (18%)	59 (12%)	24 (7%)	125 (11%)
1-4 drugs	9 (90%)	24 (56%)	112 (52%)	201 (41%)	83 (25%)	429 (39%)
5-7 drugs	1 (10%)	16 (37%)	54 (25%)	147 (30%)	116 (34%)	334 (31%)
8+ drugs	0 (0%)	0 (0%)	10 (5%)	78 (16%)	114 (34%)	202 (19%)
Total	10 (100%)	43 (100%)	215 (100%)	485 (100%)	337 (100%)	1090 (100%)

Background

- CHIVA guidelines 2009 aim to achieve uniform care for all HIV-infected children in the UK through the development of clinical networks
- Attending MDTs to discuss complex management is logistically challenging
- Virtual clinics supporting complex treatment decision-making in adult practice is well established[1,2]

AIM: To establish the referral patterns of a Paediatric Virtual Clinic for HIV medicine held monthly at St. Mary's Hospital, Imperial College NHS Trust, London over an eight-year period.

References:
1. Marett B et al. 2008; 2. Hughes A et al. 2010;

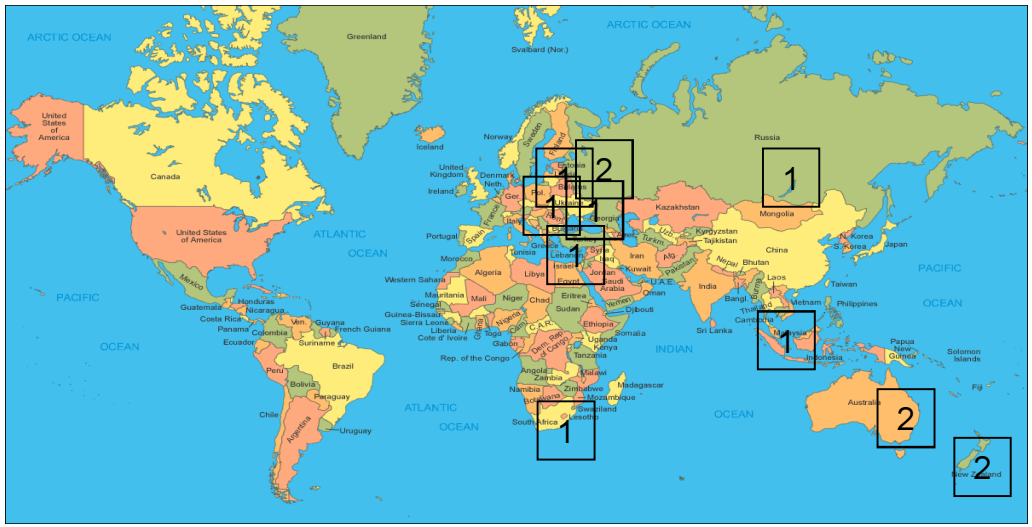
The PVC

- 4 x Paediatric ID specialists,
- 2 x Adult physicians with expertise in resistance/family care,
- 1 x Virologist,
- 1 x Paediatric
- HIV Pharmacist,
- 1 x Clinical Nurse Specialist.

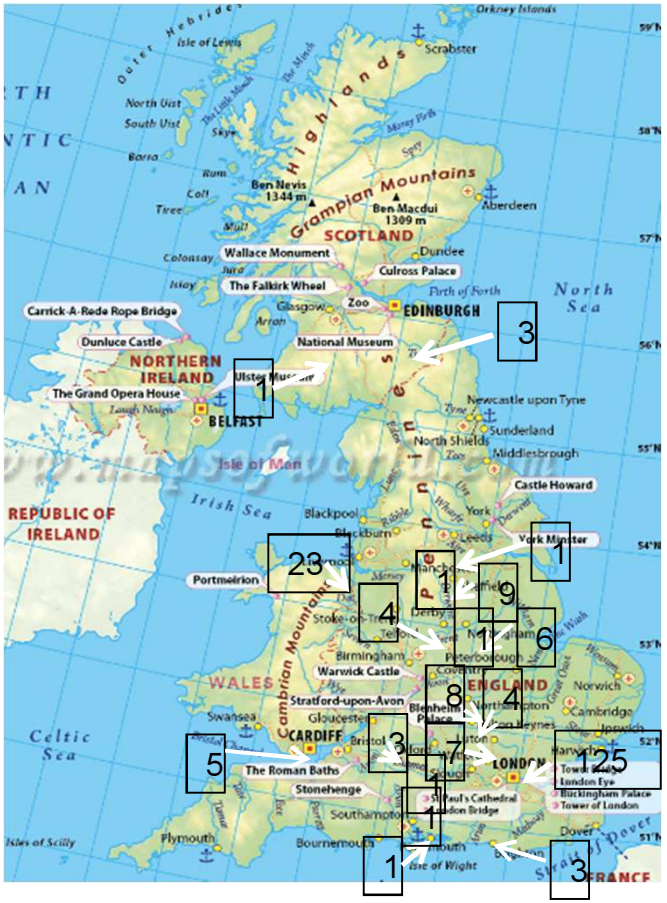
RESULTS

- 234 referrals in 182 children
- Median age 13 years (IQR 10-15 years), range (0-21)
- 82% once, 13% twice and 5% 3+ times.
- Referrals from 37 centres in 11 countries

Map of World-wide Referral Centres



Map of UK Referral Centres



Referral Patterns by year

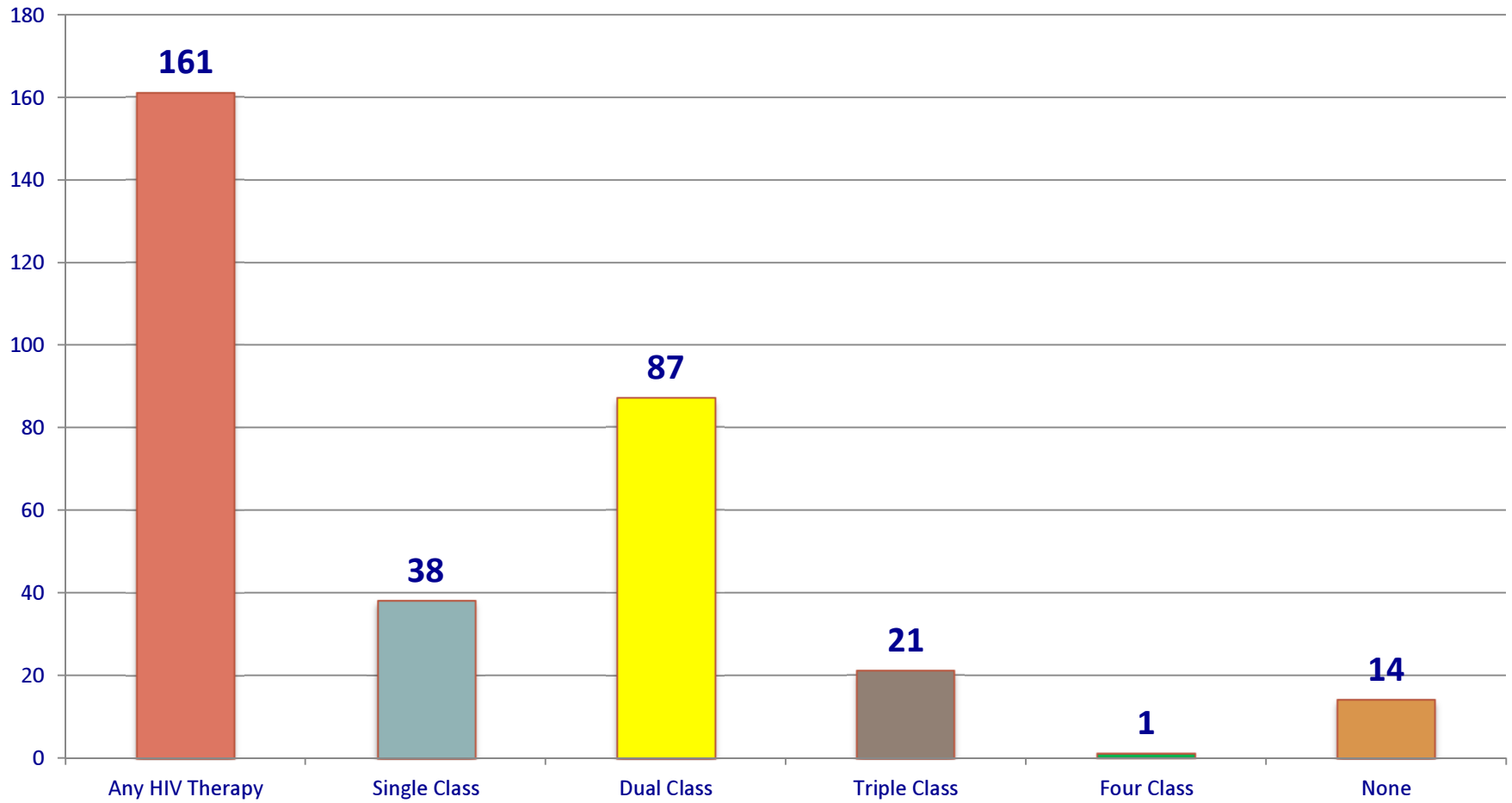
Referral Year	Total Referrals	PVC Centre	Number of referrals London (%)	Number of referrals other UK centres (%)	Number of referrals international (%)
2009*	16	9 (56)	1 (6)	6 (38)	0
2010	45	26 (58)	4 (9)	15 (33)	0
2011	56	26 (46)	7 (13)	20 (36)	3 (5)
2012	57	29 (51)	5 (9)	20 (36)	3 (5)
2013	60	22 (37)	7 (12)	22 (37)	9 (15)

* 3 months data

Reasons for referral

Referral Reason	N
CONTROL OF VIRAEMIA	
Treatment failure	79
Restart HAART	16
Start HAART	8
REGIMEN SIMPLIFICATION	57
DRUG TOXICITY	
Dyslipidaemia	27
Abnormal liver function	11
Renal Toxicity	9
Hypersensitivity	2
Neurological side effects	2
Other complications**	5
OTHER	18
TOTAL	**234**

90.6% HIV-1 associated resistance N=146/161

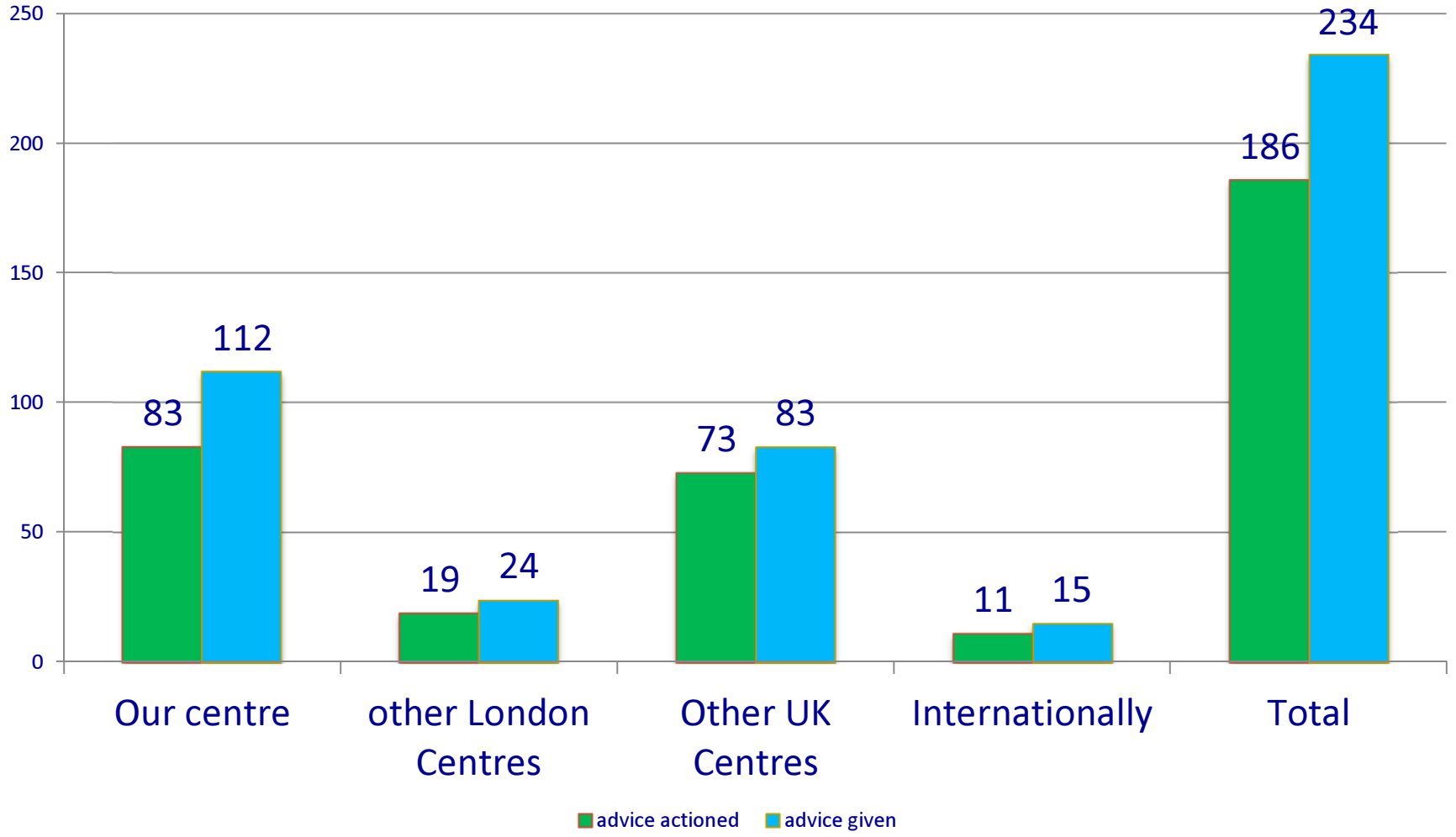


Recommendations from the PVC

- Therapy switch – 178/234 (76%)
- Maraviroc in 17/178 (9.6%)
- Raltegravir in 21/178 (11.8%)

- Adherence support - 21/182 children, including: psychology, social services, CAMHS and gastrostomy (10).

80% PVC Recommendation uptake



Discussion

- 40% of referrals were due to viraemia with resistance
- 25% of referrals for regimen simplification in adolescents
- 25% showed signs of drug toxicity

=>MDT input with adult expertise in resistance and newer agents and paediatric knowledge of pill swallowing, childhood formulations/weight banding and parental support assists complex treatment decision making in this population.

Acknowledgements

The families of our HIV Patients

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The PVC at St. Mary's Hospital

Dr. Bamford

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Royal College of Physicians
British HIV Association BHIVA
GILEAD
wellcome trust

Referral Reason	N	2009* (%)	2010 (%)	2011 (%)	2012 (%)	2013 (%)
CONTROL OF VIRAEMIA						
Treatment failure	79	6 (9)	19 (24)	15 (19)	18 (23)	21 (27)
Restart HAART	16	2 (13)	4 (25)	2 (13)	7 (44)	1 (6)
Start HAART	8	0	2 (25)	1 (13)	1 (13)	4 (50)
Simplification of regimen						
	57	3 (5)	10 (18)	19 (33)	14 (25)	11 (19)
DRUG TOXICITY						
Dyslipidaemia	27	2 (7)	3 (11)	10 (37)	7 (26)	5 (19)
Abnormal liver function	11	0	1 (9)	3 (27)	3 (27)	4 (36)
Renal Toxicity	9	1 (11)	1 (11)	1 (11)	3 (33)	3 (33)
Hypersensitivity	2	0	0	1 (50)	1 (50)	0
Neurological side effects	2	0	1 (50)	0	1 (50)	0
Other complications**	5	0	2 (40)	1 (20)	1 (20)	1 (20)
OTHER						
	18	2 (11)	2 (11)	4 (22)	1 (6)	9 (50)
TOTAL	**234**	**16**	**45**	**56**	**57**	**60**