Bristol Children's Vaccine Centre

Developments in the Study of Meningococcal Carriage and Transmission

@adamhfinn

DIPS, Korsør
9th November 2018

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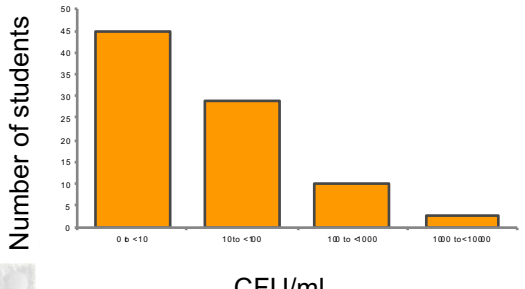
Meningococcal carriage density in 87 young adults



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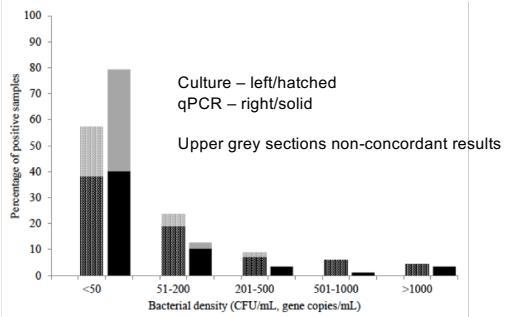
Mening' carriage density



Finn et al PIDJ 2016

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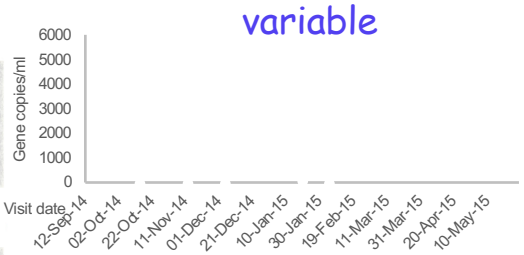
Density over time within individuals appears highly variable



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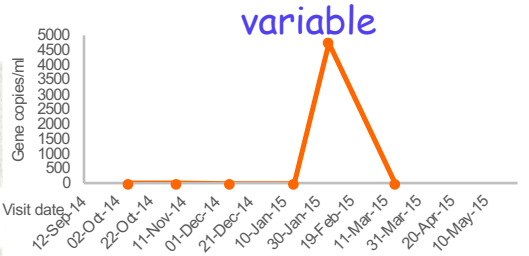

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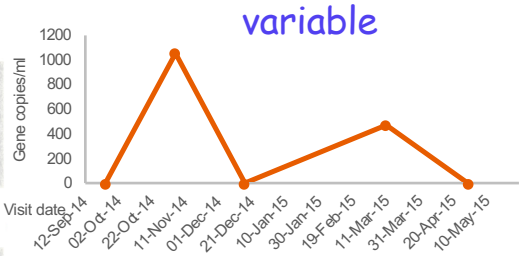

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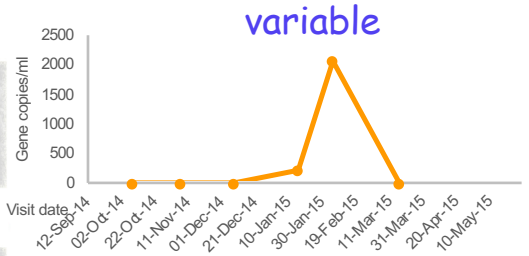

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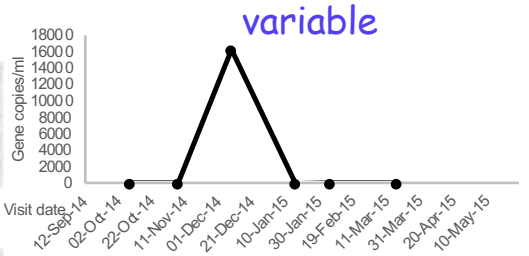


Risk factors for carriage...

- Gender
- Age
- Smoking
- Kissing
- Antibiotics

Predict very little of density

Associations between Meningococcal Carriage &:

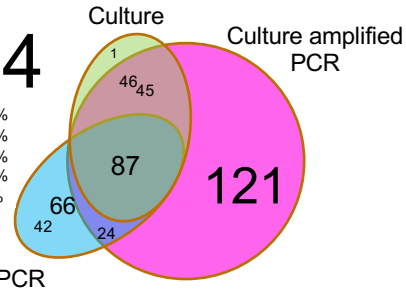
		N. meningitidis+	*N. meningitidis-*	Total	
Virus Presence	Virus+	11.8%	88.2%	100%	P=0.0564
	Virus-	7.0%	93.0%	100%	
	Total	102	1278	1380	
Rhinovirus Presence	RhV+	12.9%	87.1%	100%	P=0.0354
	RhV-	7.0%	93.0%	100%	
	Total	102	1278	1380	

N.B. Percentages as a proportion of total Viral/RhV +/-

Comparing methods

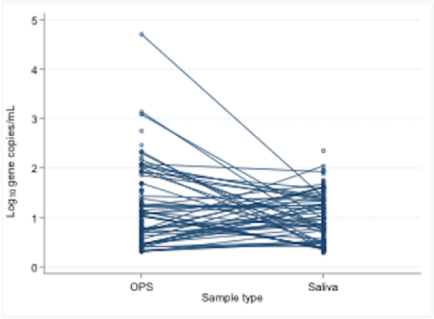
1614

Cx 7.6%
PCR 8.8%
Cx+PCR 11.4%
CaPCR 15.9%
Cx+PCR+CaPCR 18.3%



Saliva

Comparison Throat swab vs Saliva



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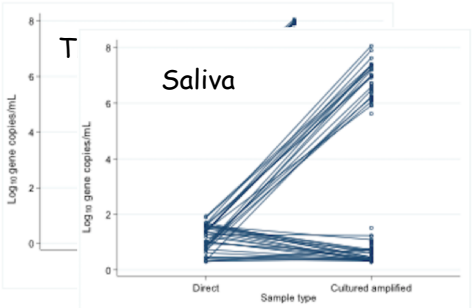
Culture + PCR



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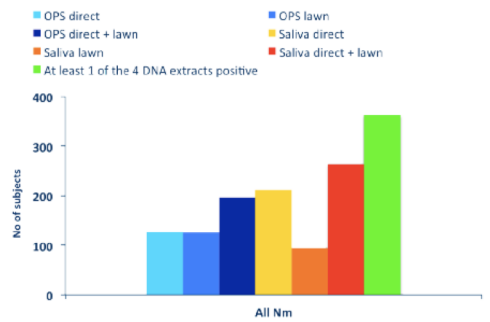
Increasing sensitivity…



N=1005 18-25 year old medical/pharmacy students
Coimbra, Portugal

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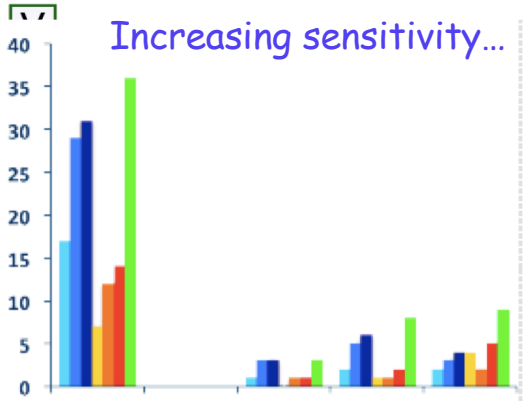
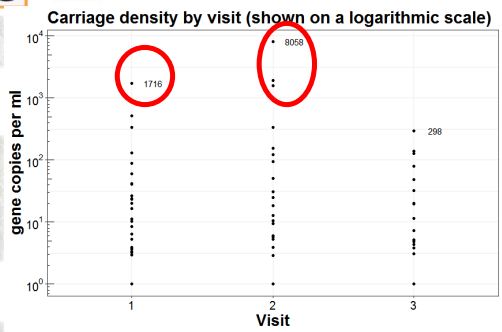


SPIT study



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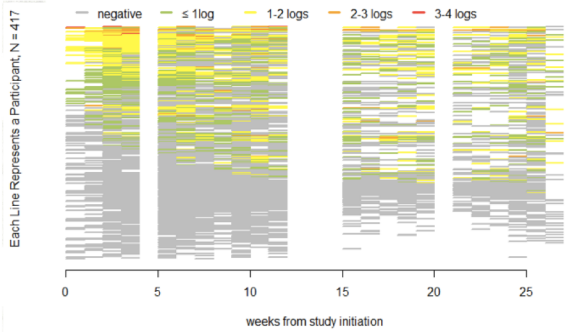

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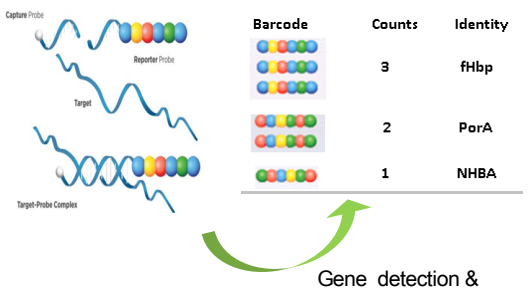
NanoString nCounter system



Barcode	Counts	Identity
	3	fHbp
	2	PorA
	1	NHBA

Gene detection & counting nCounter

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Conclusions

- Meningococcal carriage density is dynamic – possibly driven by viral infections
- Overall crude carriage rates in vaccine recipients may be relatively poor predictors of vaccine impact on transmission
- Viable meningococci can be found in saliva – implications for transmission and precautions

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