



Devon & Cornwall  
**POLICE**

# Targeting missing persons most likely to come to harm

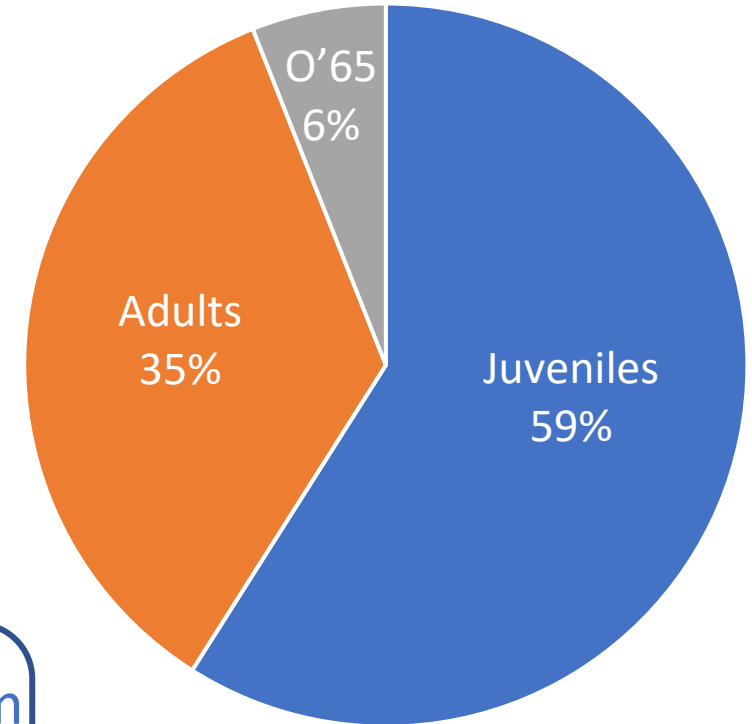
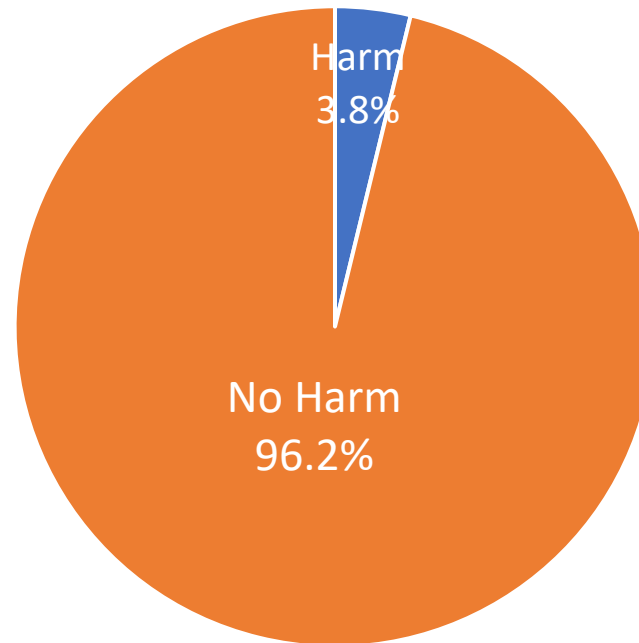
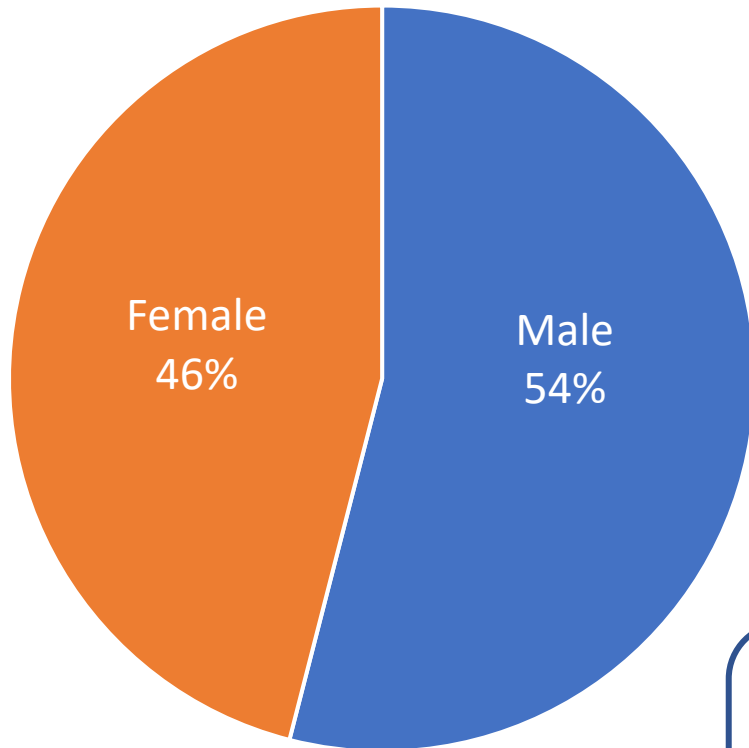
Superintendent Ryan Doyle



- National: Biggest threat to the Police Service is Legitimacy – trust and confidence of the public in effective use of our resources and ability to keep people safe
- Devon and Cornwall: Missing People account for up to 15% of our daily demand, safeguarding and vulnerability focussed force mission
- Personal: Wanted research to add value to the service

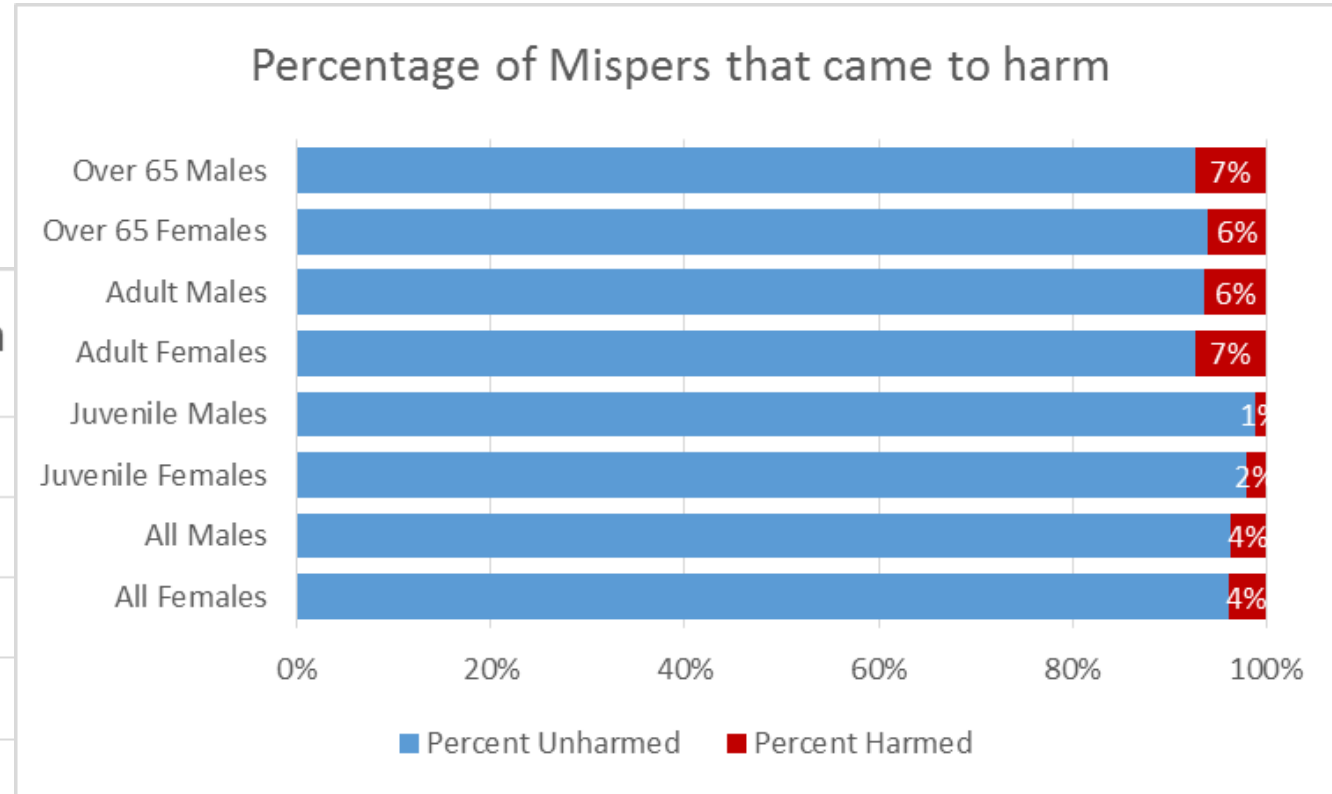
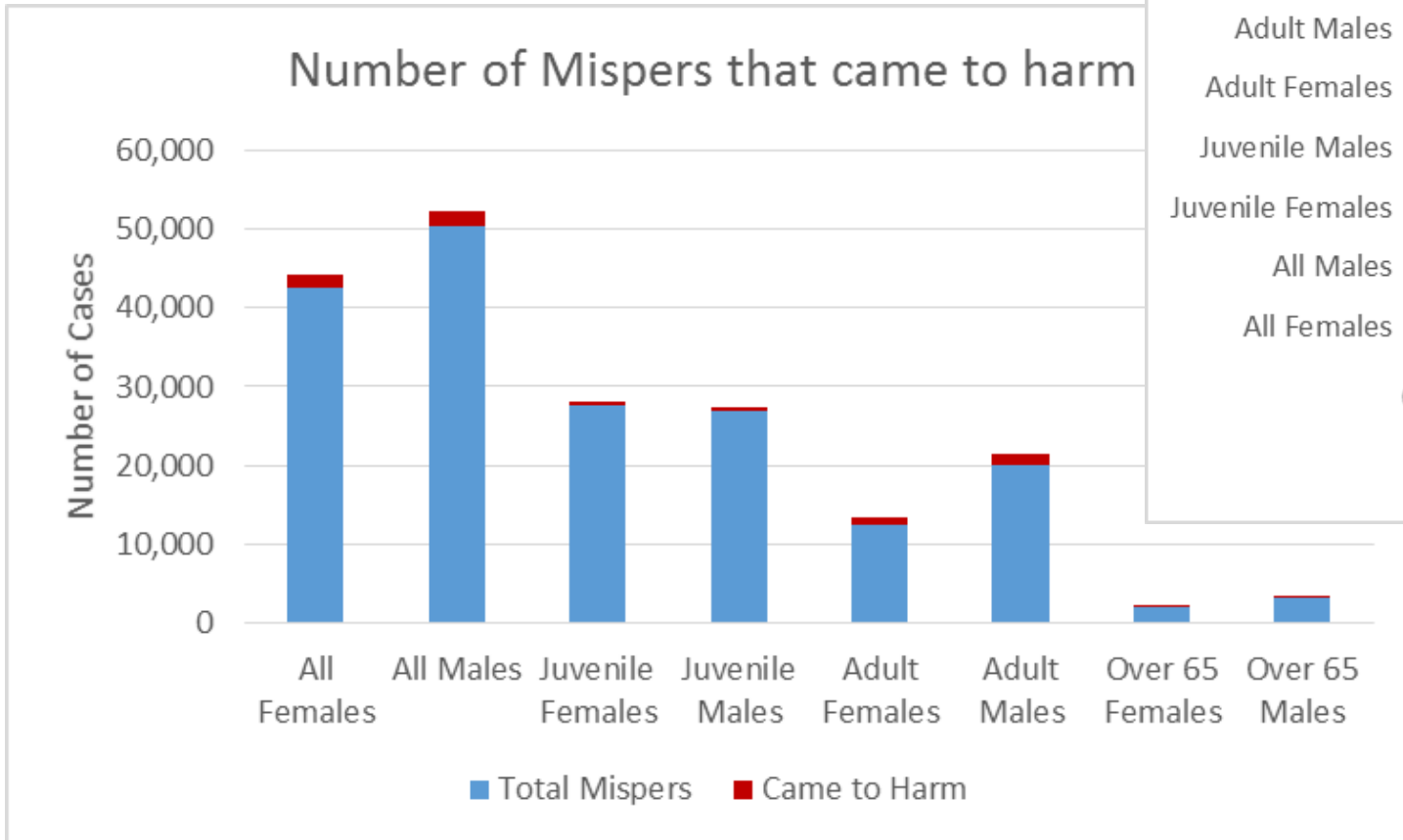
- Retrospective analysis of 92, 681 mispers recorded on COMPACT in Devon & Cornwall, between 2008 and 2019
- Predictive associations between binary predictors, gained from COMPACT risk factors known at the time of report, and harmful outcomes in missing person cases, are measured using odds ratios.
- All types of harm are aggregated in to one outcome of harm

## 92,681 Misper Records...



1.7% of Juveniles came to harm  
6.8% of Adults and Over 65's

# Findings: Which Mispers come to harm?





The predictive value of risk factors is conditional on age and gender

The current risk assessment process is less accurate at forecasting outcomes than simply assuming no missing persons will ever come to harm.

## RISK GRADES

**High Risk: Serious harm is very likely**

**Medium Risk: Harm is likely but not serious**

**Low Risk: Harm is possible but minimal**

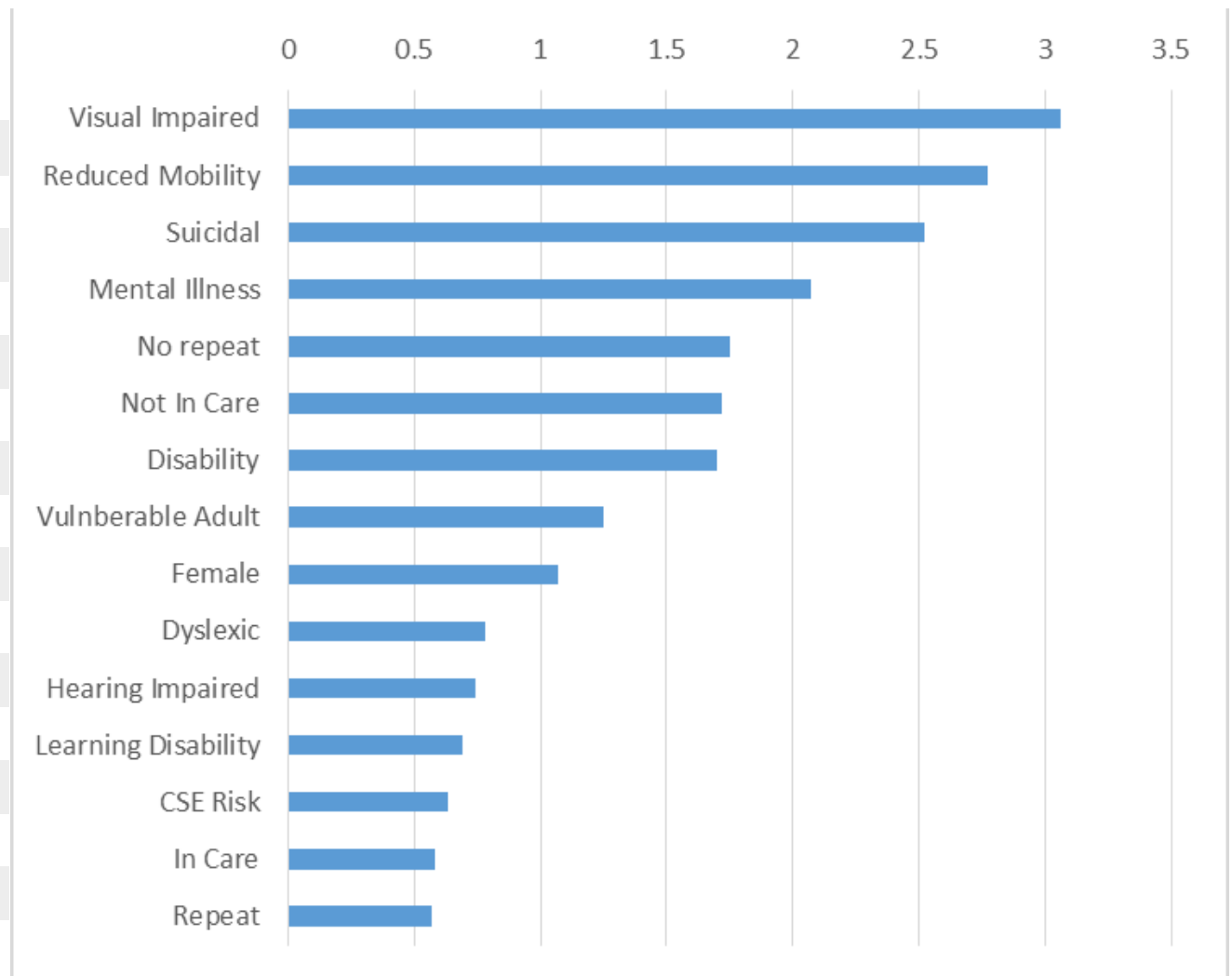
GRADE	% of Total	Number	% Came to Harm	% of all Harm
HIGH	15%	13,260	11%	41%
MEDIUM	75%	70,046	3%	53%
LOW	10%	9,375	2%	6%

Category	Accuracy
All (HR as Harm Predictor)	85.0%
All (HR and MR as Harm Predictor)	13.4%
Juveniles (HR as Harm Predictor)	94.4%
Juveniles (HR and MR as Harm Predictor)	6.9%
Adults (HR as Harm Predictor)	75.7%
Adults (HR and MR as Harm Predictor)	24.4%
Over 65 (HR as Harm Predictor)	46.6%
Over 65 (HR and MR as Harm Predictor)	13.2%



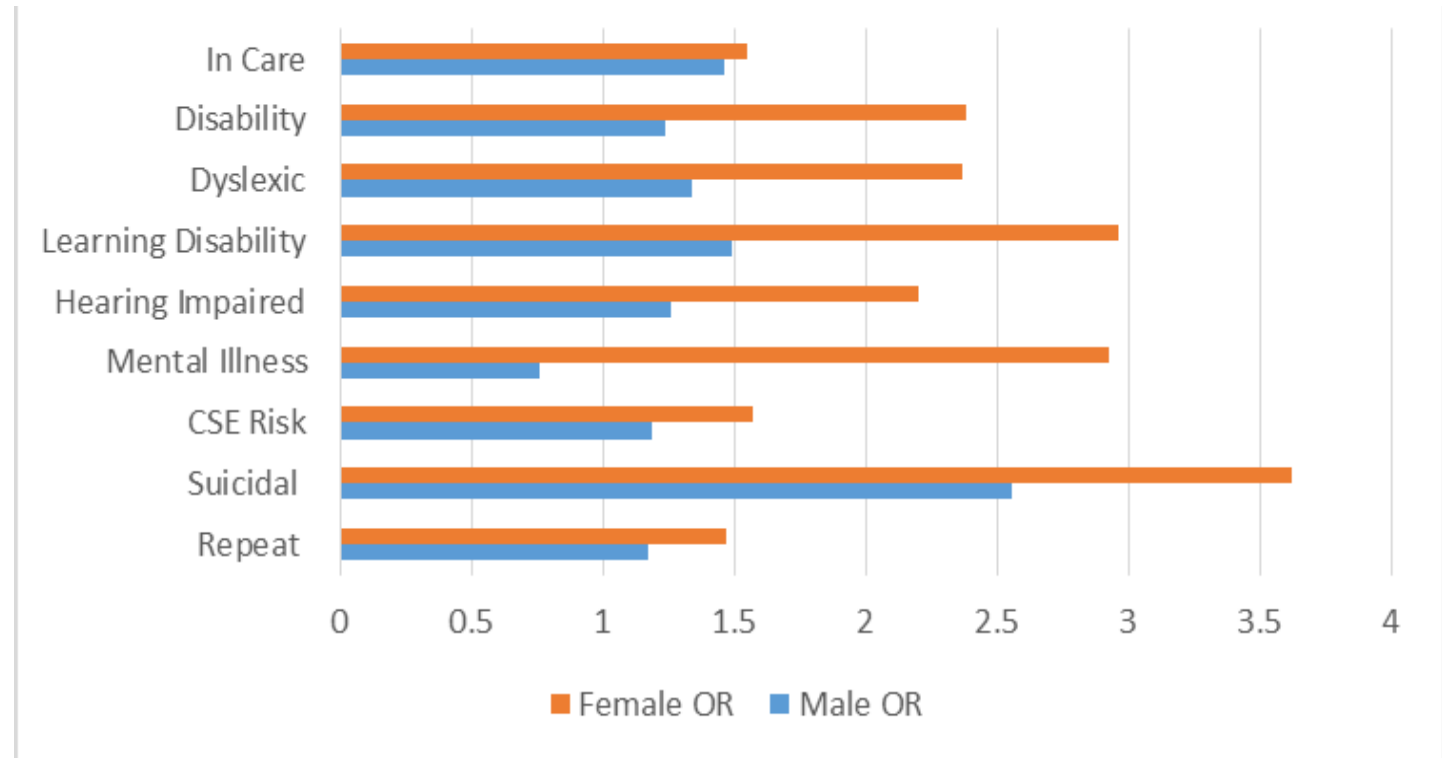
# Odds Ratios: Predictive Factors for All Mispers

<i>Predictor</i>	<b>Predictor N</b>	<b>Smallest N</b>	<b>Odds Ratio</b>	<b>OR Sig.</b>
<i>Visual Impaired</i>	94	10	3.06	0.002
<i>Reduced Mobility</i>	413	40	2.77	<0.001
<i>Suicidal</i>	529	47	2.52	<0.001
<i>Mental Illness</i>	7740	535	2.07	<0.001
<i>No repeat</i>	26237	1401	1.75	<0.001
<i>Not in Care</i>	82070	3234	1.72	<0.001
<i>Disability</i>	10288	597	1.7	<0.001
<i>Vulnerable Adult</i>	129	6	1.25	0.49
<i>Female</i>	42414	1650	1.07	0.05
<i>Dyslexic</i>	136	4	0.78	0.82
<i>Hearing Impaired</i>	179	5	0.74	0.69
<i>Learning Disability</i>	2410	64	0.69	0.003
<i>CSE Risk</i>	4829	119	0.63	<0.001
<i>In care</i>	10611	247	0.58	<0.001
<i>Repeat</i>	66444	2080	0.57	<0.001



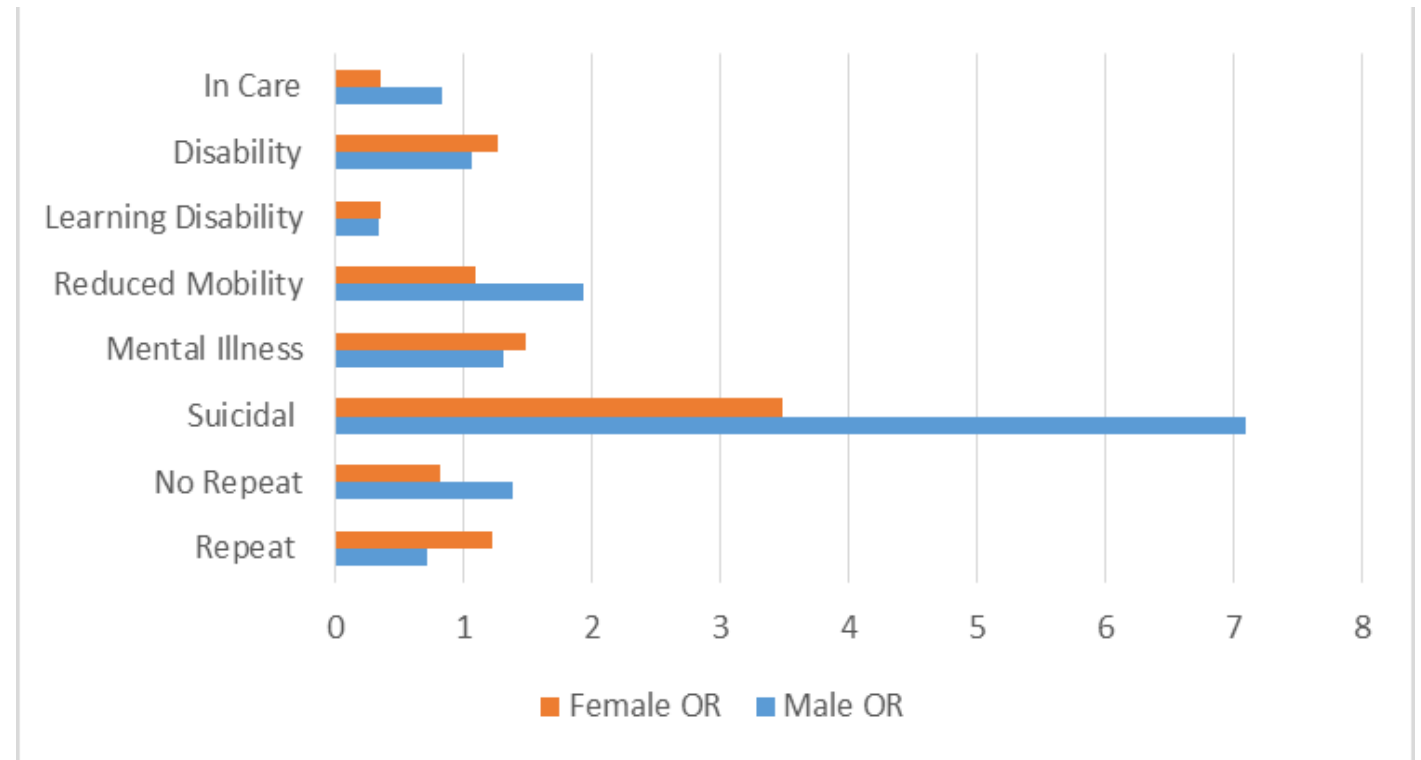
# Odds Ratios: Predictive Factors for Juvenile Mispers

<i>Predictor</i>	<b>Predictor N</b>	<b>Smallest N</b>	<b>Odds Ratio</b>	<b>OR Sig.</b>
<i>Suicidal</i>	469	29	4	<0.001
<i>Reduced Mobility</i>	24	1	2.58	0.33
<i>Mental Illness</i>	2155	74	2.2	<0.001
<i>Female</i>	27625	586	1.8	<0.001
<i>Disability</i>	3598	100	1.78	<0.001
<i>Learning Disability</i>	1411	40	1.76	0.001
<i>Dyslexic</i>	104	3	1.76	0.24
<i>CSE Risk</i>	4826	119	1.57	<0.001
<i>In Care</i>	10384	236	1.51	<0.001
<i>Repeat</i>	46160	800	1.37	0.002
<i>Hearing Impaired</i>	77	1	0.78	1



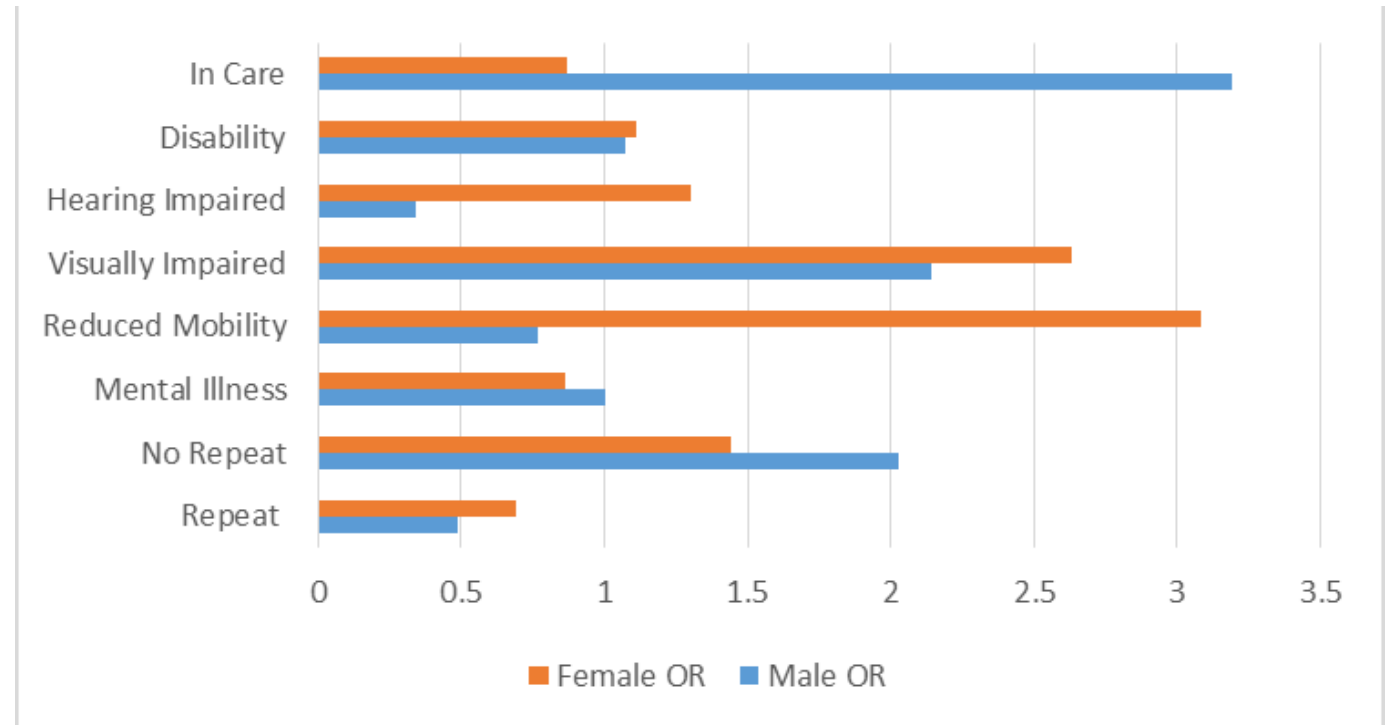
# Odds Ratios: Predictive Factors for Adult Mispers

<i>Predictor</i>	<b>Predictor N</b>	<b>Smallest N</b>	<b>Odds Ratio</b>	<b>OR Sig.</b>
<i>Suicidal</i>	57	16	5.42	<0.001
<i>Reduced Mobility</i>	197	21	1.65	0.04
<i>Mental Illness</i>	4561	396	1.38	<0.001
<i>Female</i>	12614	933	1.18	<0.001
<i>Disability</i>	5497	411	1.14	0.02
<i>No Repeat</i>	14243	1014	1.11	0.02
<i>Vulnerable Adult</i>	42	3	1.06	0.76
<i>Visually Impaired</i>	42	3	1.06	0.76
<i>Repeat</i>	18465	1196	0.9	0.02
<i>In Care</i>	203	9	0.64	0.21
<i>Hearing Impaired</i>	51	2	0.56	0.58
<i>Dyslexic</i>	32	1	0.44	0.72
<i>Learning Disability</i>	985	24	0.34	<0.001



# Odds Ratios: Predictive Factors for Mispers Over 65

<i>Predictor</i>	<b>Predictor N</b>	<b>Smallest N</b>	<b>Odds Ratio</b>	<b>OR Sig.</b>
<i>Suicidal</i>	3	1	27.65	0.01
<i>Visually Impaired</i>	49	7	2.32	0.045
<i>No Repeat</i>	3551	280	1.77	<0.001
<i>Reduced Mobility</i>	192	18	1.44	0.14
<i>In Care</i>	24	2	1.25	0.68
<i>Male</i>	3195	233	1.23	0.08
<i>Disability</i>	1193	86	1.09	0.51
<i>Mental Illness</i>	1024	65	0.92	0.58
<i>Female</i>	2175	131	0.81	0.08
<i>Repeat</i>	1819	84	0.57	<0.001
<i>Hearing Impaired</i>	51	2	0.56	0.58



- The risk assessment process for Mispers should be specific to the age and gender of the Misper.
- Six risk different risk assessment models should be built for Mispers; Male and Female for each of the three age categories
- Consider risk grading titles; e.g. Low, Standard, Raised and Critical, rather than Low, Medium and High
- Odds Ratios provide strong indicators, but future model should be built on more sophisticated prediction tool such as Random Forest



# Devon & Cornwall **POLICE**

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