An overview of G2M Programme at University of Aberdeen: Demographic characteristics and correlation analysis of Academic *vs.* MMI/UCAT performances.

Marini, P.[1,*], Yilmaz, H. B.[1,*], Gibson-Smith K.[2], 2 Miller, S.[1], Young L.[3], Fraser D.[3], & Lumsden, C.[1]

1. Institute of Education in Healthcare and Medical Sciences, University of Aberdeen, AB25 2ZD, Scotland , UK
2. Centre for Healthcare education, Research and Innovation, University of Aberdeen, Ab25 2zd, Scotland, UK
3. North-East Scotland College, Aberdeen City Campus, Gallowgate, Aberdeen, AB25 1BN, Scotland, UK
*These authors contributed equally

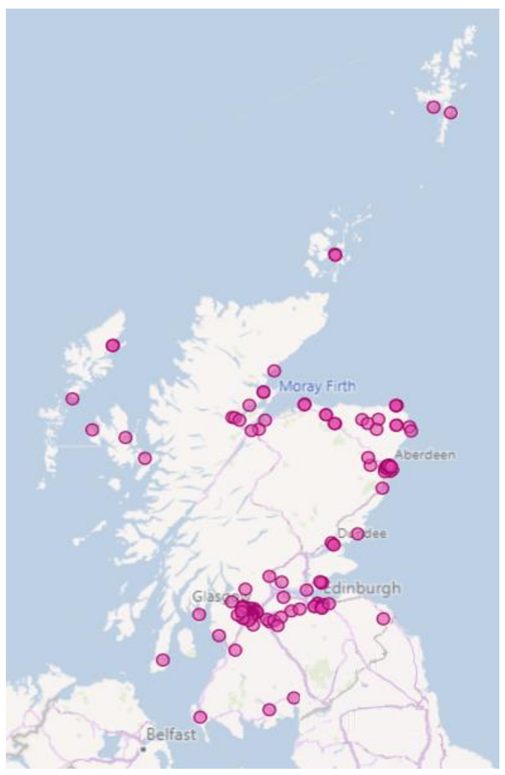
Introduction

- Gateway to Medicine (G2M) is a foundation programme established in 2017 in partnership with North-East Scotland College (NESCol).
- The programme aims to widen access to Medicine at the University of Aberdeen.
- Students can apply to G2M programme based on eligibility criteria.
- Over the 6 years G2M has run, 150 pupils have entered the programme, 95% of entrants have progressed to the MBChB.

Aims

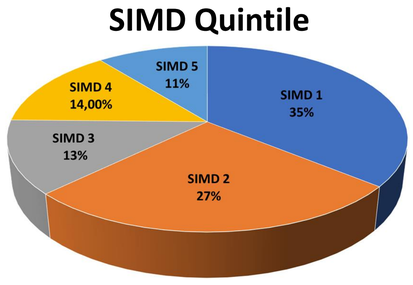
In This study we have:
- summarised the demographic background of students who entered the programme.
- investigated the possible correlation between academic students' performance versus two key MBChB entry requirements: MMI and UCAT.

G2M Students population: eligibility criteria-based demographic representation.



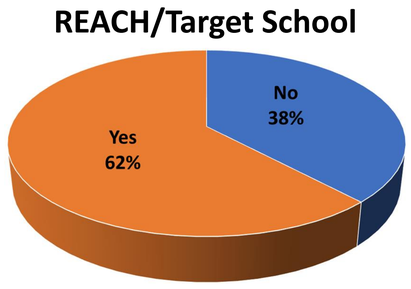
Domicile distribution
G2M students come from across Scotland, with prevalence from the central belt.

SIMD Quintile



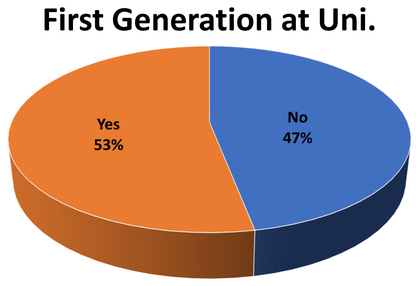
Majority of students (62%) are from SIMD 1 and 2 Quintile.
(Scottish Index Multiple deprivation)

REACH/Target School



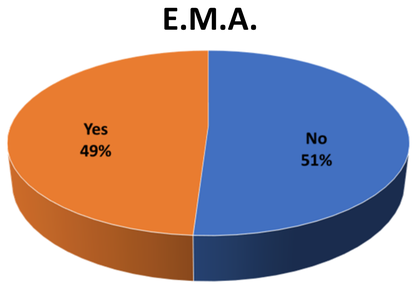
Similarly, majority of students (62%) were from REACH programme schools or from our Target schools

First Generation at Uni.



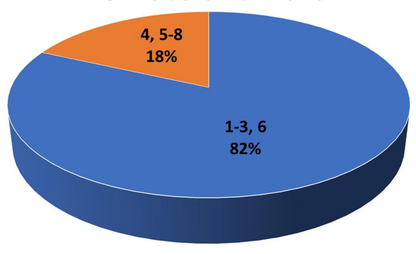
A slight prevalence of students that applied as first generation at Uni.

E.M.A.



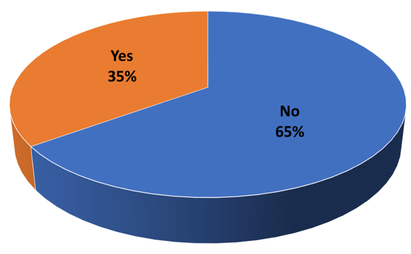
Half of G2M students entitled for Educational Maintenance Award.

Resident in Remote and Rural



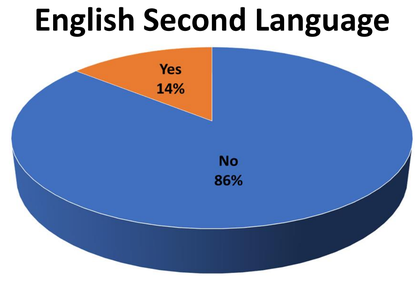
Only 18% of students were from remote small town (4), very remote small town (5), remote rural (7) or very remote rural (8) areas.

Free School Meals



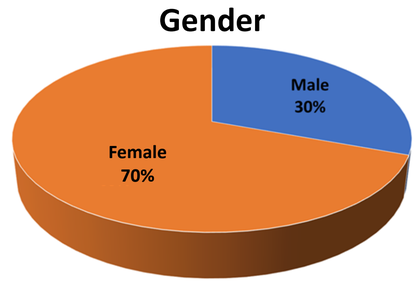
Among different eligibility criteria, 35% of applicants were entitled to free school meals.

English Second Language



Most participants were native English speakers.

Gender



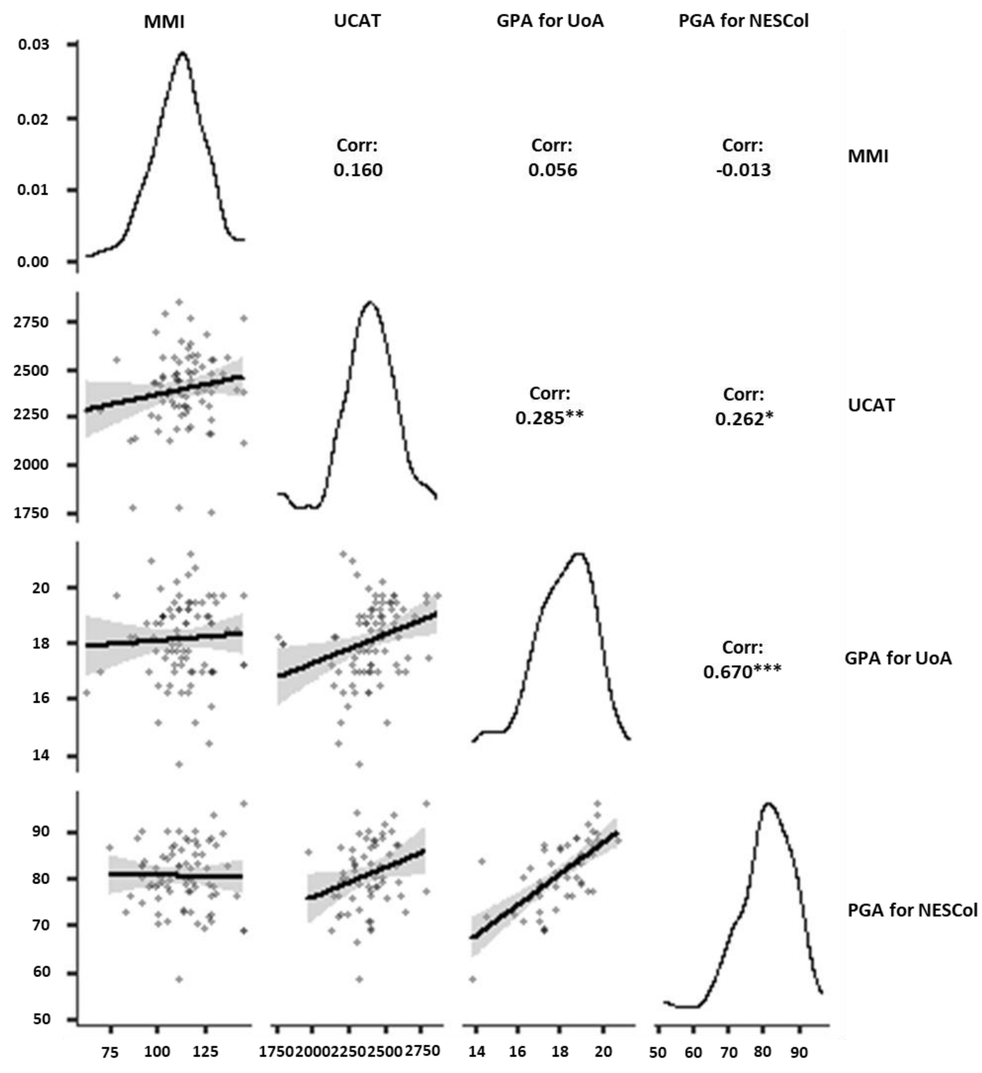
Predominantly, the G2M population was composed of female students.

G2M Students: Academic, MMI and UCAT performance

	Mean	Median	SD	Min.	Max.	Skew.	Kurto.
MMI Score	110.61	111.5	15.17	62	145.5	-0.35	0.69
UCAT Score	2385.86	2390	193.19	1760	2850	-0.61	1.81
GPA for UoA*	18.06	18.25	1.55	13.75	21.25	-0.64	0.25
PGA for NESCol*	80.32	80.81	8.08	51.4	96.3	-0.94	1.68

** Grade for UoA is out of 22 and Grade for NESCol is out of 100.*
MMI scores exhibit the highest variability among the variables, whereas UCAT scores demonstrate the lowest relative variation $\left[cv = \frac{\sigma}{\bar{x}} \times 100\right]$.
All variables can be considered as having normal distributions. Both skewness and kurtosis values are in [-2, +2] range. This is also confirmed by the below distribution graphs attached to the correlation table and the scatter graphs.
Means, standard deviations, and frequency distributions, were computed for the study participants' demographic information and eligibility criteria. MMI Score: Multiple Mini-Interview score; UCAT Scores: University Clinical Aptitude Test scores; GPA forUoA: Grade Point Average Scores on University courses; PGA fo NESCol: Percentage Grade Average Scores on NESCol courses.

Correlation analysis: Academic *vs.* MMI/UCAT performance



Pearson correlation coefficients were calculated as a measure of the strength and direction of a linear relationship between two variables, to assess the degree and direction of associations between MMI scores, UCAT scores, GPA for UoA GPA scores, and PGA for NESCol scores.
Despite the lack of statistical significance in the correlations between MMI and other variables ($p>0.05$), students' UCAT scores exhibit positive but weak correlations with their average scores at the UoA (**$p<0.01$) and NESCol (*$p<0.05$). Their scores in NESCol and UoA also show positive and stronger correlations (***$p<0.001$) compared to their relationship with UCAT.

Discussion

Demographics:

- Majority of G2M students were female, from central belt/North-East of Scotland.
- Majority of students from SIMD 1 and 2 quintiles.
- Very low number of students from remote/rural areas.
- Majority of students from REACH programme or target schools.
- Half of students were eligible for EMA and first generation at Uni.
- Free school meals and English as second language, were the eligibility criteria matched less by G2M students.

Correlation Analysis:

- Students performing well at NESCol also performed well at UoA courses as shown by the significant correlation between PGA for NESCol and PGA for UoA.
- Students' performance at both NESCol and UoA were significantly correlated to a good UCAT outcome.
- No correlation was observed between academic performance and MMI scores or between UCAT and MMI.

Conclusion

- Majority of students were recruited based on SIMD and REACH/Target school criteria. The geographical distribution of participants clearly highlights that North and North- West areas of Scotland are still underrepresented and may require a more targeted intervention in promoting the programme.
- NESCol is a good preparatory step at helping G2M students to better perform at Uni and UCAT test.
- MMI scores are not influenced by academic performances of G2M students, suggesting extracurricular activities are required to improve outcomes.