

Improving transition from child to adult mental health services in Europe: The maths behind the MILESTONE study

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Introduction

- What happens when a young person in the care of child mental health services reaches the age of transition?
- The 5-year MILESTONE project aims to improve the understanding of transitional care across different healthcare systems in the EU.
- This poster describes some of the mathematical aspects behind the novel MILESTONE study design, the motivating results we have found so far and what to expect as the project finishes in early 2019.



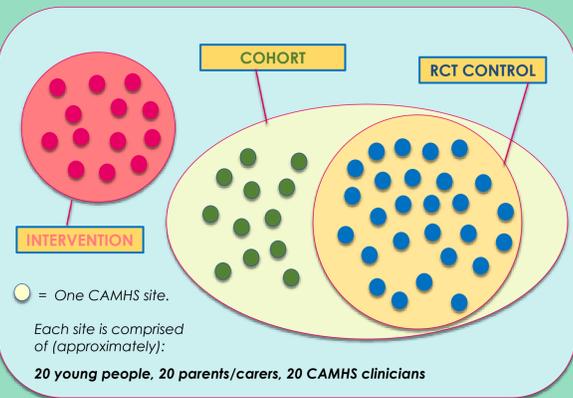
Map of MILESTONE partners around the EU

- MILESTONE is a vast project which includes 50 centres, across 8 EU countries conducted by a team of over 100 researchers. The aims are to:
 - map mental health services and transitional policies across the EU;
 - conduct a longitudinal cohort study of transition outcomes across eight EU countries;
 - develop and test an intervention to improve transitional care;
 - create clinical and policy guidelines for improving care and outcomes for young people;
 - develop and implement training packages for clinicians across the EU.

The Design of MILESTONE

- MILESTONE is an innovative study design; a nested cluster randomised controlled trial (nCRCT). This allows us to simultaneously conduct two studies in one nested design and is an efficient model which is becoming popular in the wider field of medical research and clinical trials.
- We approached child and adolescent mental health services (CAMHS) in our 8 recruiting countries, and if eligible, the CAMHS site was randomly allocated to one of three groups, shown in the Figure below, namely **INTERVENTION**, **COHORT** or **RCT CONTROL**. This allowed use to form two distinct, but related, studies:

1 A **RANDOMISED CONTROLLED TRIAL (RCT)** to test the implementation of "managed transition" (a process capped with the TRAM report shown below) on the health outcomes of YP, compared to usual care. The figure below shows this is equivalent to comparing the outcomes of YP at ● sites (N≈540) to the outcomes of YP at ● sites (N≈270), and seeing which group is superior.

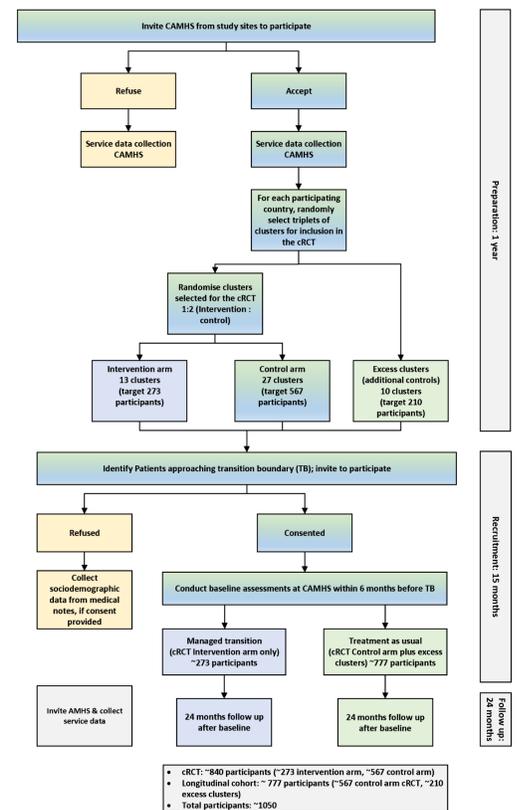


2 A **COHORT STUDY** of 700 YP to evaluate their long term mental health, and assess the changes in the course of their mental health as they approach the transition boundary and move beyond. In the figure this is equivalent to grouping together the YP at the ● and the ● sites, and investigating the patterns of outcomes.



"The pattern of peak onset and the burden of mental disorders means that the maximum weakness and discontinuity in the system occurs just when it should be strongest"
Pat McGorry, 2014

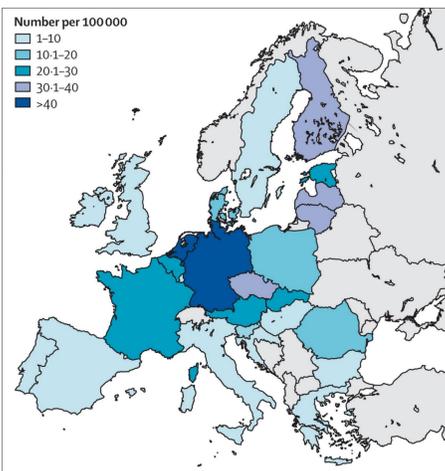
Study Flowchart



Results: so far

- What do the MILESTONE YP look like?
 - 62% are female
 - Mean age is 17.5 years old
 - 85% have a parent or carer participating in MILESTONE
 - More than 50% live in a non nuclear family household
- There is a research team in each of the 8 countries; each working on a specific topic surrounding issues of transition.
- Italy and UK researchers (my team) published a paper investigating how the map of CAMHS provision differs across 28 EU countries. **Headline result:** The differences in resource allocation do not map on to the burden of disease; hence improvements are needed across healthcare systems.
- We have a fantastic group of Young Project Advisors who have a lived experience of CAMHS, and are now producing a TEDx talk and a live theatre production on transitioning through mental health services and the differences MILESTONE may make.

"Half of all lifetime mental health disorders start by age 14 years and three quarters by the age of 24 years."
Ronald C Kessler, 2014



Map showing number of CAMHS per 100k young people in European Union countries
Signorini et al, Lancet Psychiatry, June 2017

Results: to come

- The RCT and the cohort study do not finish follow up data collection until May 2018 and Jan 2019 respectively, after which main analysis can be undertaken and reported.
- I will be responsible for analysing the results of the RCT, which will answer the question of whether the TRAM process has improved the outcomes of YP compared to the best usual care; the first time gold standard research on managed transition has been tested in an RCT.
- Only this kind of ambitious, methodologically robust, high impact European wide research has the power and influence to provide a timely insight into an under-researched population.

Our RCT experiment is testing the TRAM report shown here



The MILESTONE team!

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