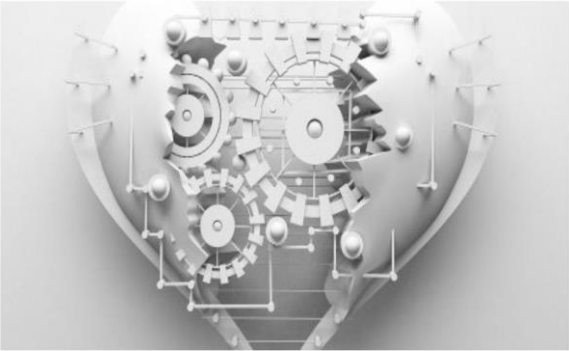
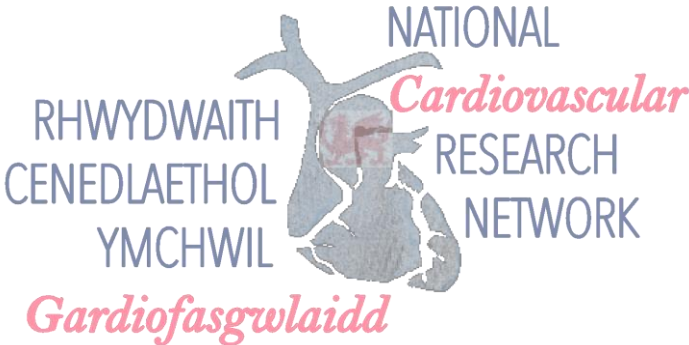


Cardiovascular Data Sciences Research in Swansea

- **Julian Halcox**
- Daniel Obaid
- **Libby Ellins**
- **Daniel Harris**
- Pradeep Mohan
- Rich Summers
- Monica Martins
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- Mike Gravenor
- Ashley Akbari
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Cardiovascular Research in Wales



NCRN research themes

New Approaches to Cardiac Arrhythmia Therapy(NATCAT)

Research

- Inherited cardiac conditions
- Stratified medicine
- Genotype/phenotype linkage
- Mechanism-based drug design

CV healthcare outcomes / data science

Research

- Coronary disease and AF
- Population healthcare datasets
- Adverse outcome mapping
- Co-morbidities

Translational vascular physiology

Research

- Research trials
- Arterial haemodynamics/microvasculature
- Risk factors
- Aging and disease

Mission Statement

“ The NCRN will create a focused translational infrastructure to facilitate delivery of clinical trials, pathways and/or policy to introduce the learnings from mechanism-oriented, cardiovascular and data science research activities most effectively and appropriately into the clinical and public health domains.”

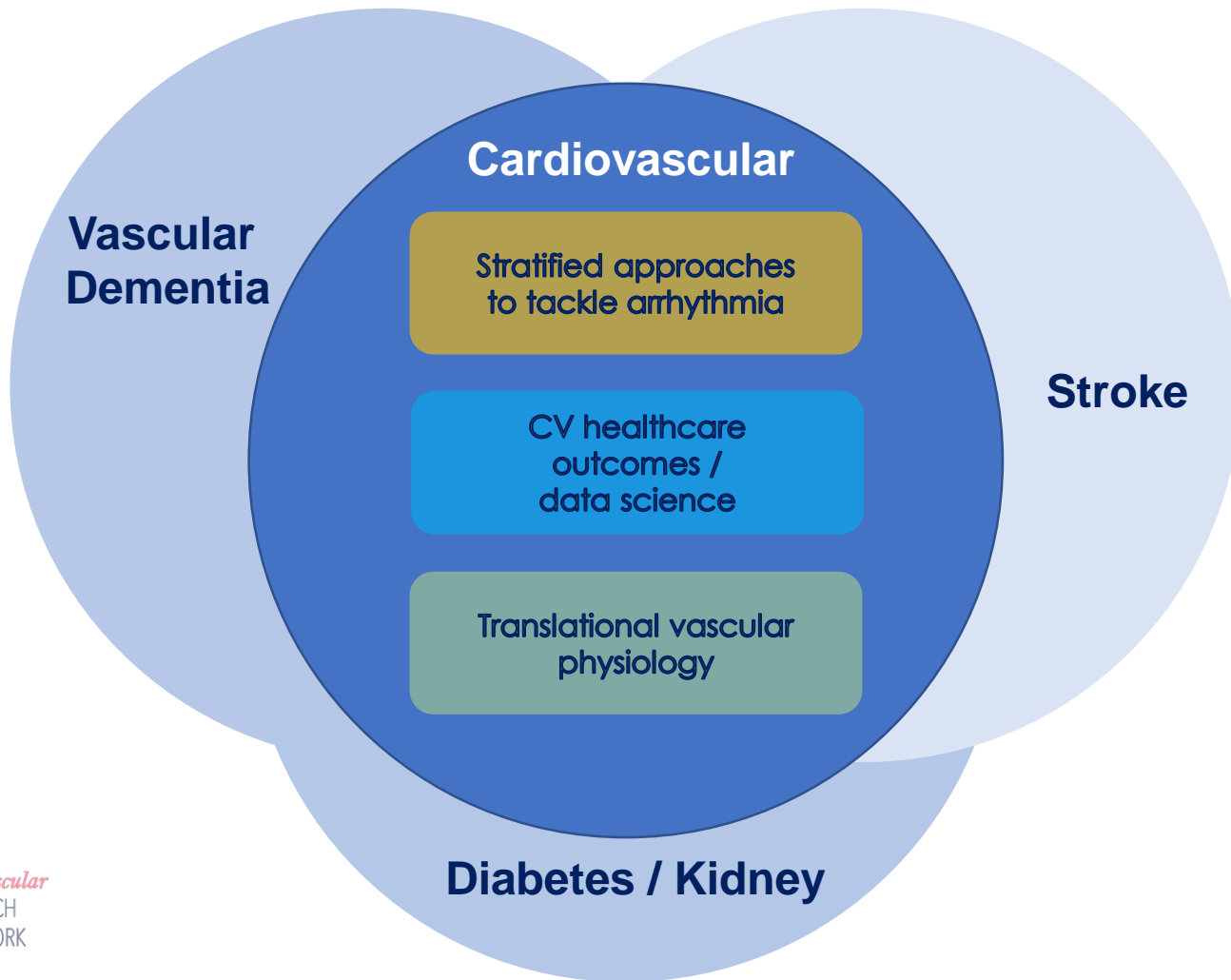
Mission Statement Mk. 2

“ To do some good stuff with good people in a good way.”



Ymchwil Iechyd
a Gofal **Cymru**
Health and Care
Research **Wales**





Cardiovascular Data Sciences Research in Swansea

Outcomes Research Focus (Second Translational Gap)



Cardiovascular Data Sciences Research in Swansea

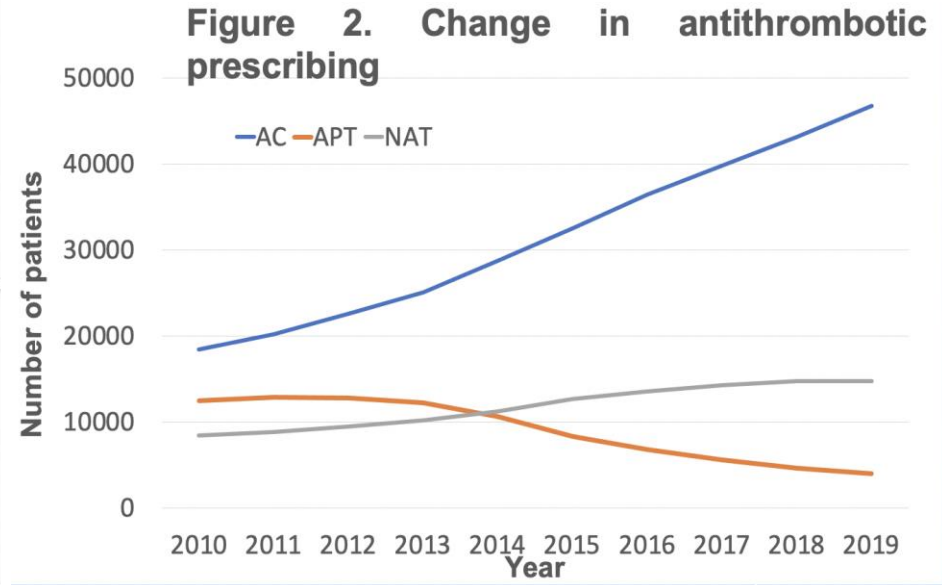
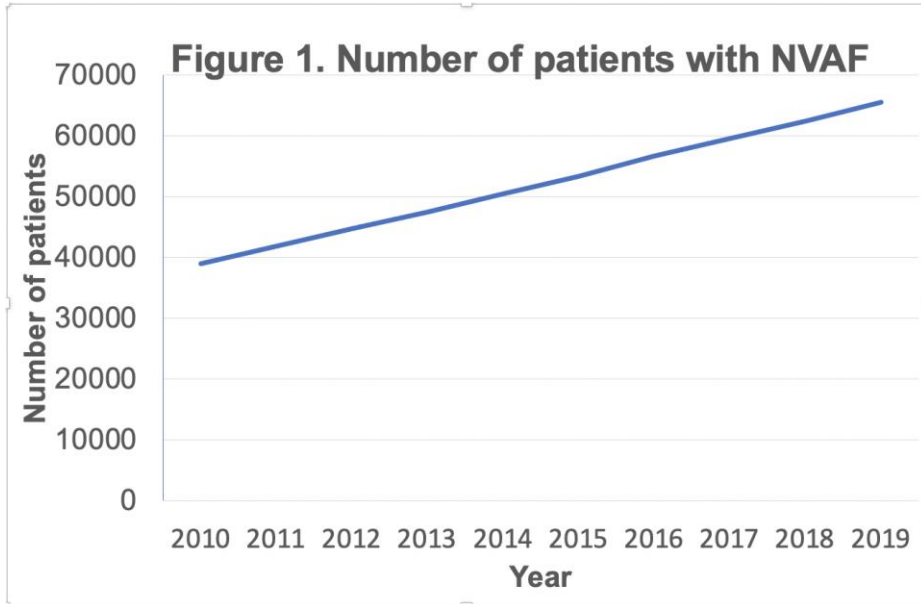
Outcomes Research Focus (Second Translational Gap)

- Identification and Characterisation of
 - Treatment Gaps (Actual Care vs Evidence-Based Guideline-Directed Standards)
 - Anticoagulation in Atrial Fibrillation
 - Risk Factor Management in Coronary Disease
 - Cardiovascular Care in Patients with Mental Health Disorders
 - Hypertension Programme
 - CVD in SARS-CoV9 Pandemic
 - CVD Investigation Pathways
 - Acute and Chronic Coronary Disease (Exercise ECG, Nuclear perfusion, (CT)Angiography)
- What is the impact of the relationships we identify (in above) on CVD Outcomes?
- How Can we Translate these findings into improved care for our patients and population?

Using data to explain changes in the prevalence, treatment and outcomes in patients with atrial fibrillation

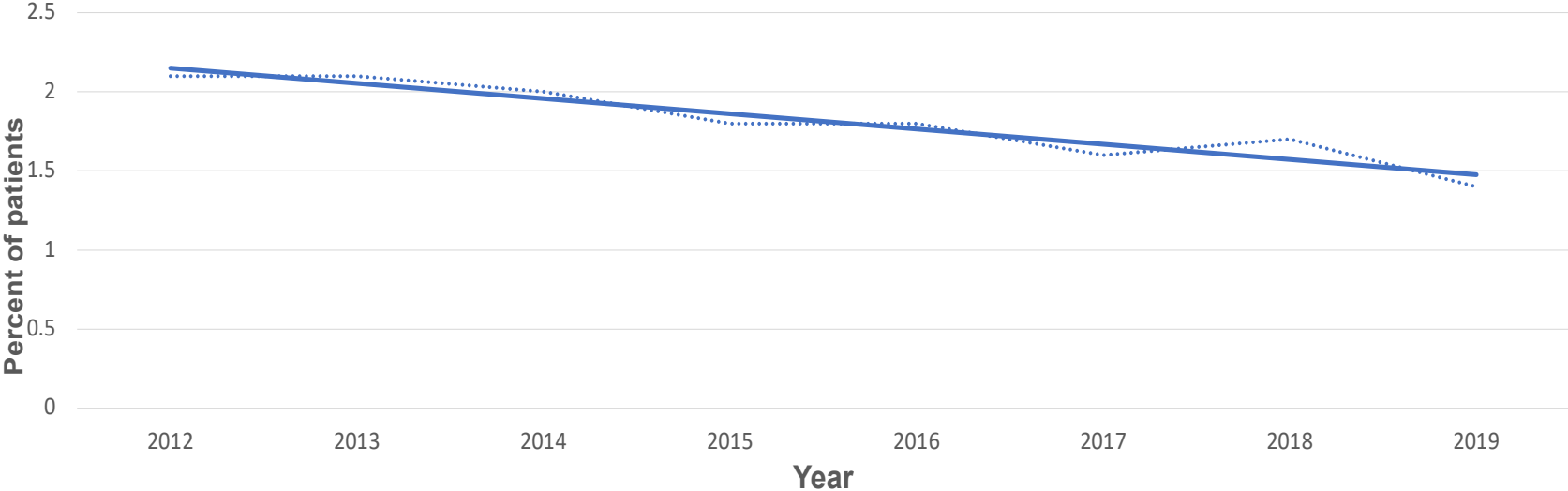
- AF – prevalence ~2.5%
- Increases risk of stroke x5
- 30 day mortality ~33%
- Stroke risk reduced by use of anticoagulants
- Spend on anticoagulants has steeply risen but has there been a decrease in strokes?

Prevalence of AF and change of antithrombotic prescribing



Hospitalisation rate for stroke (and systemic embolism)

Figure 3. Hospitalisation rate for SSE



Cardiovascular Risk Factor Assessment and Treatment in Patients with Depression in Wales: A Data Linkage Study

Dr Libby Ellins

Col: Julian Halcox, Ann John, Ashley Akbari, Mike Gravenor, Keith Lloyd & David Osborn



Background

- Both cardiovascular disease (CVD) and depression have major public health implications
- CVD ↔ depression
- Mechanisms – not fully understood
- Risk factor (RF) management key in primary prevention of CVD
- Previously shown that high risk CVD patients with depression are less likely to achieve guideline target levels for lipids

Research aim

- To explore the impact of depression on cardiovascular risk factor assessment, treatment and management in patients free from previous CVD and depression

Research questions

- **1.** Is there a difference in likelihood of CVD RF assessment in those with and without a diagnosis of depression?
- **2.** Are patients with depression less likely to have CVD RFs treated with evidence-based medication where identified than patients without depression?
- **3.** Do patients with depression and on blood pressure or lipid lowering medications have successfully controlled:
 - blood pressure (<140/90 mmHg)
 - lipid levels (LDL decreased by $\geq 40\%$ vs baseline)?

Methods

- ▶ Retrospective cohort study using electronic health records in the SAIL Databank.
- ▶ Those included in the study:
 - ▶ Those registered with a SAIL GP on 1st January 2010 & have at least one year of pre-study data
 - ▶ Aged 18+
 - ▶ Are free from atherosclerotic CVD/ depression/ severe mental health conditions
- ▶ Primary Outcome RQ1- **Time until CVD assessment**
 - ▶ Adjusted for relevant demographic and health-related variables