intramural/epicardial RMCC. Programmed ventricular stimulation assessed VT inducibility post procedure as a marker of immediate efficacy and device interrogations were conducted at 1, 3, 6, and 12 months to determine time to VT recurrence.

Results 15 consecutive pts (median age 68yrs, LVEF 30%) were studied (6 month pre-procedural ICD therapies: median 19 ATP events (IQR=4–93) and 1 shock (IQR=0–3)). Scar (<1.5mV) occupied a median 29% of the total surface area (median 523 scar points). A median of 2 RMCCs were seen within each scar (length 60mm; far field peak amplitude 0.43mV; local 0.19mV; conduction 53cm/s). The Figure illustrates two RMCCs enhanced with design lines within a large anterior scar containing distinct late potentials ascending up the scar. This is readily apparent without manual annotation or point tagging. Ablation was performed along all RMCCs (median 19 lesions (IQR=10–23)) and any non-connected sites (median 6 lesions (IQR=2–12)). The diastolic isthmus in VT was mapped in 3 pts and co-located within the RMCCs identified. VT was non-inducible in 85% of patients post ablation. There were no complications during the procedures. In this cohort, 71% remain free of VT recurrence at 6 month median follow up. Interestingly, during redo ablation in a patient with recurrence, an RMCC identified during the index procedure had not been completely eliminated.

Conclusions RM identifies conducting channels within the post-infarct scar that might support re-entrant VT and can be used to guide substrate based ablation to reduce future ICD therapies.

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A PHYSIOLOGIST LED LOOP RECORDER IMPLANTATION SERVICE IN AN AMBULATORY SETTING

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Our tertiary cardiac centre has developed a new ambulatory service for injectable loop recorder insertion based in a treatment room. Previously loop recorders were implanted in a dedicated pacing theatre by a consultant led team. The patient was kept nil by mouth prior to the procedure and were dressed in a theatre gown. The wound from the device was around 4 cm and was closed with sutures. The typical time in

Abstract 68 Figure 1 The path of RMCC activation at 4 time points (i-iv) within scar, with associated electrograms and ablation lesions (v)

theatre was around 30 min. Patients were then observed for 2 h post procedure prior to discharge.

A new injectable reveal device became available with reduced surgical trauma and scarring. We subsequently developed a new service run by senior cardiac physiologists without the need for medical staff to be present. The physiologists were initially trained in obtaining consent, surgical skills and device implantation. They were then supervised for the first 20 implants before continuing independently. We looked retrospectively at the first 100 cases. The service was run from a treatment room on a day ward and was entirely ambulatory. Oral antibiotics and local anaesthetic were prescribed by a doctor prior to the implant. The average case time was less than 10 min. Patients did not require fasting and were able to have the implant done in their own clothes. The wound is less than one cm and is closed with a surgical glue without the need for sutures. The patients were educated on use of the device and then discharged post procedure. The waiting time for the physiologist led service is significantly reduced with cases generally being done in under 2 weeks. Previously the waiting time for a consultant to implant a loop recorder was around 2 months. The adverse event rate is favourable with no implant site infections and 2 erosions. There have been no major adverse effects. The new service had freed up a considerable amount of theatre space and consultant time allowing a more efficient pacing service. The patient experience has been improved with a shorter time in hospital. The new device is more expensive than the previous loop recorder but the cost has been offset by the reduced staffing requirements and need for less equipment. We have demonstrated that implanting by non medical staff is safe, efficient and cost effective.

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A NOVEL AMBULATORY SYNCOPE ASSESSMENT UNIT IS SAFE AND COST-EFFECTIVE IN A LOW-RISK PATIENT COHORT

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Introduction Syncope affects approximately 50% of people in their lifetime. The diagnosis of the underlying cause for syncope is often delayed, inaccurate and cost-inefficient.¹ The objective of this study was to evaluate the safety and cost-effectiveness of a novel low-risk syncope day-case assessment unit recently introduced at a DGH.

Methods A retrospective analysis of 50 in-patients admitted with syncope was initially undertaken. Measured variables included length of in-patient admission, waiting time to investigation (24-hour holter and transthoracic echocardiogram), frequency of cardiology review, 30-day re-admission rate with syncope and 90-day mortality rate. The same variables were then assessed prospectively in 50 in-patients referred directly to the syncope clinic. The one-stop assessment unit took place in the local ambulatory care unit (Figure 1) and was led by acute medical physicians; with access to transthoracic echocardiography and continuous ECG monitoring which were all performed on the same day. Patients were referred for same-day specialist review as appropriate. All 100 patients were deemed low risk as defined by the San-Francisco Syncope Rule.³ Patients investigated for conditions other than syncope

Based on: European Society of Cardiology's Guidelines for the diagnosis and management of syncope (version 2009)

Abstract 70 Figure 1 Based on : European Society of Cardiology's Guidelines for the diagnosis and management of syncope (version 2009)

Abstract 70 Table 1 Summary of patient variables

Variable	In-patient Assessment (n= 50)	Assessment Unit (n = 50)	P-value
Median length of in-patient admission (days)	5	2	< 0.05
Waiting time to investigation			
24-hour holter	1.6	1	0.168
TTE*	2.5	1	< 0.05
Reviewed by cardiologist (%)	23 (46)	16 (32)	0.151
30-day re-admission with syncope (%)	4 (8)	1 (2)	0.169
90-day mortality (%)	0 (0)	0 (0)	-

* TTE=transthoracic echocardiogram

Abstract 70 Table 2 Summary of projected cost data

Item	Total
Bed-days saved per patient by referring to syncope clinic (n)	4
Mean monthly frequency of patients reviewed in syncope clinic (n)	16
Total in-patient bed days saved per month (n)	64
Total in-patient bed days saved per year (n)	768
Cost of in-patient bed-day (£)	273
Cost of saved in-patient bed-days saved per year (£)	209,664

were excluded. Student's t-test and chi-squared tests were used to compare continuous and categorical data respectively.

Results The median length of admission for patients remaining in hospital for assessment was 4 days compared to 1 day for those referred to the syncope assessment unit ($p < 0.05$). The median waiting time from discharge for a syncope unit appointment was 3 days. 32% of the patients referred to the syncope clinic were reviewed or discussed with a cardiologist. This figure was higher (46%) for those patients remaining in hospital for assessment although not statistically significant ($p = 0.151$). There was no significant difference in 30-day readmission rate with syncope or 90-day mortality rate between the two ($p > 0.05$). 93 patients were reviewed in the syncope clinic over the first 6 months (16/month). With an in-patient bed-day costing £273, referral of patients to the syncope clinic at this rate would save £17,472 per month and £209,664 per year (Tables 1 and 2).

Conclusions The introduction of a novel low-risk syncope assessment unit promotes early discharge from hospital with prompt outpatient medical review and shorter waiting times for diagnostic investigations. Our data suggests this is both cost-effective and safe with improved patient care.

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Congenital Heart Disease

71 LONG-TERM OUTCOMES OF COARCTATION OF AORTA IN EAST OF ENGLAND – THE NORFOLK AND NORWICH AND PAPWORTH HOSPITAL EXPERIENCE

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Background Coarctation of the aorta (CoA) is associated with premature mortality with a mean survival age of 35 year in spite of early repair. Treatment paradigms are continually changing and contemporary data on CoA are needed.

Methods The Norwich and Papworth (NORPAP) dataset was set up in 1993 to record demographics, treatments and

outcomes of adult congenital heart disease (ACHD) patients in the east of England. We report on the CoA subset.

Results In total 2322 patients were included in the dataset and of these 223 had CoA (9%): 146 males and 77 females, mean age 40 years (range 16–94). Hypertension was documented in 34% and coronary heart disease 6%. 91% received a corrective procedure (80% surgical and 11% percutaneous) and of these 38% required more than one procedure. Percutaneous intervention made up about half of all re-do procedures. 13% of second procedures were not related to CoA and were mostly aortic valve replacement. There were two cases of subarachnoid haemorrhage and 2 deaths (0.8%) over approximately 10 years follow up.

Conclusion There is a high initial intervention rate in CoA with about 40% requiring additional intervention. The serious complication rate was low in our cohort suggesting that prognosis is improving over time.

72 MORBIDITY AND MORTALITY ASSOCIATED WITH CONGENITAL HEART DISEASE IN ADULTS WITH TRISOMY 21 (T21)

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Background Trisomy 21 is frequently associated with congenital heart disease (CHD). Survival and life expectancy has increased as a result of surgical intervention and medical therapies. The NORPAP GUCH database, started in 1993, has 2668 patients.

Methodology Patients with Trisomy 21 were selected from the NORPAP database. Population demographics, underlying diagnosis, comorbidities and mortality were analysed.

Results 110 patients had T21; Mean 34 years, Median 30 years, M:F 1.1:1 (Figure 1). Underlying CHD was AV Canal defect 57 (51.8%), VSD 30 (27.3%), Fallot Repair 10 (9.1%), Secundum ASD 6 (5.5%), Bicuspid Aortic Valve 3 (2.7%), Mitral Regurgitation 1 (0.9%), Single Ventricle 1 (0.9%), Pulmonary Stenosis 1 (0.9%), PDA 1 (0.9%). 61 (55%) patients had had surgery. Of those under 40, 51% were unoperated.

Death occurred in 9 patients (9%). Average age at death 46 years. 78% of deaths were in patients with AV Canal defect. Mode of death was cardiac in 8 and PAH-CHD was present in all but one.

Figure 2 shows associated comorbidities. 35% have PAH — 59% received targeted therapy.

Conclusion AV Canal defect was the most frequent underlying CHD in the T21 NORPAP cohort and was associated with