## Device Results 2012

Since the start of 2012 I have been prospectively auditing all device implants and complications (of all operators in our institution). I am publishing my results here. I do believe that we should be publishing our data, warts and all. In 2013 I will collect data on co-morbidities too, which I feel is important. We have already published long-term data from our institution:

<http://bjcardio.co.uk/2012/05/pacemaker-complications-in-a-district-general-hospital/>

At our institution we undertake “simple” (single and dual chamber conventional pacemakers) and complex device implants (cardiac resynchronisation therapy/biventricular pacemakers and implantable cardioverter defibrillators). We will remove devices that are less than one year old, but do not remove devices that are older. I tend to do more complex procedures and also undertake a number of corrective procedures.

In 2012 I undertook 163 first operator implants. I supervise very few procedures. The mean age was 74.0±12.7 years. Over two thirds of patients were male (112/163, 69%). Approximately 50% of my procedures are complex procedures. I implanted 26 LV leads.

In detail, I undertook the following procedures:

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| **“Simple Pacing”** |
| Single Chamber Pacemakers (VVIR) | 19 | 11.7% |
| Dual Chamber Pacemakers (DDDR) | 38 | 23.3% |
| Box Changes | 11 | 6.7% |
| Box Changes with New V Leads | 3 | 1.8% |
| A Lead Repositions / Replacements | 4 | 2.5% |
| A Lead and RV Lead Repositions | 1 | 0.6% |
| RV Lead Repositions / Replacements | 3 | 1.8% |
| Device Explants (Infection) | 1 | 0.6% |
| Reveal Explants (End of Life) | 1 | 0.6% |
| **Total** | **81** | **49.7%** |
|  |
| **“Complex Pacing”** |
| Single Chamber ICDs  | 13 | 8.0% |
| Dual Chamber ICDs | 11 | 6.7% |
| ICD Box Changes | 20 | 12.3% |
| ICD Box Changes and New RV Leads | 3 | 1.8% |
| Subcutaneous ICDs | 1 | 0.6% |
| CRT-Ps | 9 | 5.5% |
| Of which 4 were upgrades simpler devices |
| CRT-P Box Change | 1 | 0.6% |
| RV and LV lead replacement | 1 | 0.6% |
| Failed attempt at CRT-P (DDD only) | 1 | 0.6% |
| CRT-D | 16 | 9.8% |
| Of which 8 were upgrades from simpler devices |
| CRT-D Box Changes | 6 | 3.7% |
| **Total** | **82** | **50.3%** |

I have been a consultant for 5 years now. During that time I have been refining my techniques. In particular we have worked hard to reduce our infection rate and I have switched back to using the cephalic vein where possible.

We have published an abstract detailing what we have done to reduce our infection rate and the consequences:

<http://europace.oxfordjournals.org/content/14/suppl_4/iv22.abstract?sid=ce10eb0d-3a91-4603-a073-12fdded80aff>

I have had the following complications/issues:

1. Pneumothorax requiring chest drain

This was a consequence of an upgrade from a dual chamber pacemaker to biventricular ICD (CRT-D). I had already punctured the subclavian once and had a venogram to assist. He required a small bore percutaneous chest drain and was discharged a few days later.

1. Pneumothorax requiring aspiration

This man was having a dual chamber pacemaker. He was already an inpatient and had presented with complete heart block. I could not identify a cephalic vein. The first subclavian puncture was unremarkable. On the second pass I aspirated air. He required aspiration of the pneumothorax later that day. He remained an inpatient because of other issues for a number of other reasons after this (confusion, social placement).

1. Atrial lead reposition

Somewhat frustrating displacement of an atrial lead, the only one, to my knowledge, that I have had in the last 5 years. I repositioned it a couple of days later without consequence.

1. Device related infection within 3 months

At 11 weeks post implant a patient who I had performed a box change and new V lead on (his old V lead had failed) represented with *Staphylococcus aureus* septicaemia. The implant site looked fine, but there was no other obvious source of infection. He was old and frail and had dementia. It was decided after discussion with his family that antibiotics should be the ceiling of care and he should not have device extraction. He initially did well, but then declined and died. I have had no other infections related to device implantation this year.

1. Minor wound issue

On Christmas Eve around 4.30 pm I was asked to look at a wound from earlier in the day. It had bled a little. Given the time and the upcoming break I took her back to the lab. Once there the wound looked fine. On inspection there was a small area of superficial bleeding and on balance I inserted a single subcuticular suture to cover the area. At any other time I would have left it alone.

1. Failed upgrade to CRT.

This gentleman had unfavourable coronary venous anatomy. Despite trying a wide number of different locations the lead was unstable or there was little margin between the lead threshold and diaphragmatic pacing. I send him for a percutaneous lead.