

Senior doctors expose 'scandal' of pacemaker battery life

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The battery life of implantable heart monitors must be improved to reduce the need for replacement and the risks this carries for patients, argue two senior doctors in *The BMJ* today.

Cardiologists John Dean and Neil Sulke say over half of [patients](#) with pacemakers will need new batteries and many need several replacements.

Not only is money wasted replacing batteries before they've expired, this "exposes patients to risk of serious complications, including life threatening infection," they warn.

The situation is worse for patients with an [implantable cardioverter defibrillator](#) (ICD), they add, since the risks of infection at the time of implant and device replacement are higher than with pacemakers and the batteries have a shorter life (around four to seven years on average).

"The increased risk of infection associated with [battery replacement](#) makes it critical that we prolong the life of implantable devices as much as possible," they write.

Yet they point out that the current financial model discourages the development of longer life devices. "With financial disincentives for both manufacturers and purchasers it is hardly surprising that longer life devices do not exist."

Furthermore, patients are often assumed to prefer smaller devices, they

say, but when offered the choice, over 90% would opt for a larger, longer lasting device over a smaller one that would require more frequent operations to change the battery.

"We need to review the timing of replacement of [implantable devices](#) in all patients," they write. "While early replacement may be reasonable for high risk patients, allowing batteries to deplete for longer before replacement in lower risk patients could help to maximise device longevity."

For ICDs the waste is even more striking, they add. These devices reach their elective replacement indication when they are still capable of delivering at least six full energy shocks. "So for patients who receive no shock therapy we are prematurely discarding a [device](#) costing up to £25,000, which could last at least another six months."

They suggest that with existing technology, engineers could design and build pacemakers that would last for 25 years or more, while further developments in battery technology might enable smaller or rechargeable devices.

"There is an urgent need to minimise the requirement for replacement of these devices. Doing so will save lives, minimise suffering, and reduce costs," they conclude.

More information: Editorial: Pacemaker battery scandal , *BMJ* , www.bmj.com/cgi/doi/10.1136/bmj.i228

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