The University *of* Edinburgh

News Release

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Hi-tech system aims to cut false alarms in baby wards

The high number of false alarms in neonatal units which waste valuable medical time could be significantly reduced with new technology developed at the University of Edinburgh.

The new system aims to establish why the majority of alarms – estimated to be as high as 94 per cent – can sound when nothing is clinically wrong.

Alarms in neonatal units are linked to monitoring probes but they can sound off when a baby moves or is being handled, for instance when changing a nappy, which creates interference or may dislodge wires.

Professor Neil McIntosh, Professor of Child Life and Health at the University of Edinburgh, said: "Alarms going off needlessly are a major problem. Because it happens so often, the worry is that they could go ignored when there is in fact a problem. It also creates extra noise in an environment where sound should ideally be kept to a minimum.

"We have devised a system that looks at the monitoring data as a whole – for instance changes to the heart rate and respiratory rate together as opposed to individually. This is more likely to indicate what causes the alarm to go off and if there is indeed a problem."

The technology, devised by Professor Chris Williams and his postgraduate student John Quinn in the University of Edinburgh's School of Informatics in conjunction with Professor McIntosh, would potentially be able to link monitoring machines to a computer that keeps a constant record of any changes that may affect the baby's health.

It works out an "X-factor" to understand whether the changes are clinically significant or whether they are, for instance, simply a result of a probe being dislodged. It also has the potential to indicate problems much sooner.

Professor McIntosh, who is also a clinical consultant neonatologist at the Simpson Centre for Reproductive Health, said: "If a baby's heart rate drops to zero completely suddenly then you know that is because a monitoring wire has come off. It is physically impossible for a baby's heart rate to go instantly to zero – they always gradually slow down.
"The system could also spot problems much earlier - for instance, if the carbon dioxide in the blood goes up consistently over 10 minutes this could indicate a lung rupture, which is a risk factor in babies who are ventilated. Such ruptures have a 40 per cent mortality rate among babies, but clinically it can take two hours before staff realise there is a problem."

The Simpson Centre for Reproductive Health is one of only a few units in the United Kingdom that link up all the monitoring machines to a central computer to keep a continuous record of monitoring data.

Professor McIntosh is available for interviews after 1pm.
For more information, please contact:

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