Administration of incorrect thrombolysing agent following stroke (11HDC01434, 20 November 2013)

Public hospital ~ District health board ~ Stroke ~ Stroke thrombolysis protocol ~ Medication error ~ Communication ~ Right 4(1)

An 82-year-old man was taken to hospital following a suspected stroke. He was fast-tracked onto the thrombolysis pathway by an emergency department (ED) house surgeon. Thrombolysis is the use of drug therapy to break down clots. After a period of observation and a head CT scan, a medical consultant advised the house surgeon to start thrombolysis.

The stroke thrombolysis protocol (the protocol) used at the hospital was from a tertiary hospital. The protocol advised administration of "t-PA". The house surgeon was unsure what medication this referred to, and was advised by an ED nurse that the only t-PA available in the ED was tenecteplase. The house surgeon was uncertain whether or not this was the correct drug, as there was inconsistency in the dosing, so he decided to clarify the correct drug to use with the tertiary hospital. He telephoned and was put through to a medical registrar working in the ED. The house surgeon told the registrar that they had only tenecteplase in stock and asked her if that was the t-PA referred to in the protocol. The registrar asked an ED consultant. She called the house surgeon back 10 minutes later and told him that tenecteplase was the medication they used.

The house surgeon prescribed tenecteplase. The following morning, the man's neurological status deteriorated. A CT head scan showed that he had had an intracranial haemorrhage. The man should have been given the t-PA drug alteplase, which was available at the hospital. Tenecteplase should not be used for the treatment of stroke, and is used only for treatment of heart attacks.

It was held that mistakes were made by staff at both hospitals. It was inappropriate for the hospital to adopt and implement the protocol from the other hospital without first reviewing it to ascertain its applicability locally and amending it to reflect its own processes. The protocol provided no guidance to staff on which drug should be used, how to access that drug, and who to contact with questions or queries about the protocol.

The uncertainty in the protocol as to which drug to use resulted in a series of actions — all 'small holes' in the provision of care — which lined up with disastrous results. The house surgeon was informed that tenecteplase was the only drug available in the ED. Concerned that the packaging indicated that the dosage in the protocol was higher than the manufacturer's instructions, he sought advice. He called the tertiary hospital, because it was their protocol. He did not contact the consultant at his own hospital as he was expected to do.

When speaking to the registrar at the tertiary hospital the question 'should I give tenecteplase to thrombolyse a stroke patient?' was incorrectly conveyed to or heard by the consultant as 'is tenecteplase what we use for thrombolysis?', and the question was assumed to relate to a cardiac patient. The answer conveyed to the house surgeon was 'yes'.

No further checks were made — either by reference to MIMS (a medicines information resource) or Medsafe data, or the on-call consultant. Concerns held were allayed, warning bells had, it was thought, been heeded, and the drug was administered.

Had the protocol clearly identified the relevant drug, had the house surgeon called his own consultant, had the manufacturer's guidelines been complied with, had the question been correctly asked and answered in the tertiary hospital, a different outcome may have resulted. There was a series of missed opportunities through the systems and staff to catch what would become a fatal error.

The DHB failed to provide services with reasonable care and skill and so breached Right 4(1).