Health Care Inspectorate
*Ministry of Health, Welfare and Sport*

Fact sheet

# Investigation into possible problems with hypodermic needles reveals negligible risk

**May 7, 2015**

## Background

On 23 March 2015, the Dutch current affairs TV programme *EenVandaag* broadcast a report on the possible presence of traces of glue in two types of hypodermic needle manufactured by Terumo, a Japanese company with a production facility in Belgium. The Dutch Health Care Inspectorate (IGZ) promptly instituted an investigation to determine if these allegations are true, and if there are any health risks associated with the use of these needles. In addition, an international team performed a number of inspections at Terumo's production facility in Leuven, Belgium. IGZ also conducted two lengthy interviews with the whistle-blower who had initially contacted the producers of *EenVandaag*. The whistle-blower provided a great deal of information and supplied IGZ with samples of hypodermic needles manufactured by Terumo.
On 15 April 2015, *EenVandaag* broadcast a second report on Terumo, this time concerning alleged problems with Terumo's CAPA quality management system and the packaging of sterile medical devices at Terumo's distribution centre in Genk, Belgium. These repeated allegations prompted the Belgian and Dutch inspection authorities to perform a number of inspections.

## Investigation by RIVM

At the request of IGZ, the Dutch National Institute for Public Health and the Environment (RIVM) investigated the possible presence of traces of glue in two types of hypodermic needle manufactured by Terumo (K-Pack II and Neolus). For this purpose RIVM analyzed over 7,000 hypodermic needles produced by Terumo and various other manufacturers. RIVM also assessed the extent to which traces of glue pose a risk to patient health.

## Findings

Traces of hardened glue (epoxy resin) were found on less than 1 percent of the needles investigated. This percentage is much lower than the 20 to 30 percent mentioned in the *EenVandaag* report. Traces of hardened glue were also found in needles produced by other manufacturers, also in less than 1 percent of all samples investigated. No completely blocked needles were found. In needles carrying traces of hardened glue, the quantity of glue found was very limited. There are no indications that particles of glue can be released and injected along with the injection solution. No traces of non-hardened, liquid glue were found in any of the needles investigated.

The glue used in the manufacture of these hypodermic needles contains bisphenol A diglycidyl ether (BADGE) and bisphenol A (BPA), among other substances. The quantities found are so small that they pose no risk to patient safety. The glue also contains a colouring agent called titanium dioxide, about which less information is known. However, this substance is not expected to pose health risks because it is encapsulated in the hardened glue and is not released. Titanium dioxide is a common ingredient of medicines and foodstuffs, but little information is known

about possible exposure via hypodermic needles. Further research is therefore required. No standard is currently in place imposing any limits on the quantity of glue in hypodermic needles. IGZ calls on the industry to formulate such a standard.

The investigation also revealed the presence of tiny plastic particles in needles produced by various manufacturers. RIVM also assessed the potential risks to patients posed by these particles, by flushing the needles with a solution to find out if any particles are released. The findings showed that very small quantities of particles are indeed released, too small to be observable by microscope. However, the quantities of plastic particles found were far below the statutory limit value for injection solutions.

**Inspections at production facility in Leuven**
An international team conducted a number of inspection visits at Terumo's production facility in Leuven. The inspection team consisted of representatives of IGZ and the Belgian Federal Agency for Medicines and Health Products (FAMHP).

To ensure proper quality monitoring during the production of hypodermic needles, manufacturers must have an approved quality management system in place and use that system correctly. Only if these conditions are met can the resulting product (e.g. a hypodermic needle) be said to satisfy the applicable safety standards.

The inspection visits at Terumo's facility in Leuven revealed that some aspects of quality monitoring during the production of hypodermic needles require improvement. Terumo's procedure for dealing with products that do not meet quality standards is incomplete. As a result, some problems are not registered as non-conformities in the quality management system, and Terumo fails to take systematic action when any non-conformities are discovered.

It is important that the glue used in the production of hypodermic needles is allowed to set properly. Terumo devotes insufficient attention to ensuring that this is the case. When problems with the glue were discovered in the past, Terumo temporarily suspended the production of the hypodermic needles concerned. The company then started a project to identify and resolve any issues. Terumo resumed production when the investigation showed that the non-hardened glue was not toxic. The non-hardened glue was located between the hub (the plastic component of the syringe) and the cannula (the metal needle itself), and therefore only comes into contact with the injection solution in the needle to a very limited extent. Terumo's requirements for the needles have not been formulated in concrete enough terms.

All allegations made by the whistle-blower were investigated during the inspection visits. All documents and images shown on the *EenVandaag* programme could be retrieved from Terumo's quality assurance systems. IGZ concludes that Terumo has resolved the problems with the production of its hypodermic needles, but that its quality policy is inadequate. As a result, possible risks may not be identified in time. RIVM's investigation into the needles has not revealed any risk to patient safety, however. This applies to needles produced by Terumo as well as other manufacturers.

**Inspections at distribution centre in Genk**
Following the initial broadcast about Terumo's hypodermic needles in March, *EenVandaag* broadcast a second item in April concerning alleged problems with the packaging of sterile medical devices at Terumo's distribution centre in Genk, Belgium. The item focused primarily on coronary stents and catheters. These sterile products are packaged using inner and outer packaging. According to *EenVandaag*,

Terumo repackages products when the inner packaging is damaged. This is not allowed because the sterility of the product would then be compromised. *EenVandaag* alleged that Terumo does not register cases of damaged inner packaging in its quality management system, and even deletes any such reports from the system.

The international inspection team also investigated these allegations. During the inspection, it was found that sterile medical devices are not repackaged. When a packaging is damaged, the product is destroyed. The relevant information could be retrieved from the quality management system and was confirmed by Terumo employees. All actions and changes made in the quality management system are recorded so they can be traced. The quality management system used by Terumo has been approved and validated.

**Investigation reports**
The report of RIVM's investigation into the hypodermic needles and the report of the inspection visits to Terumo's facilities in Leuven and Genk have not yet been finalized. The RIVM report will be published in mid-May 2015, with the report on the inspection visits following a few weeks later.

**Next steps**
In late March, pending the results of the investigation, IGZ advised the use of alternative hypodermic needles, if available, rather than those supplied by Terumo. This was no more than a precautionary measure. Based on the preliminary results of the investigation, IGZ concluded in mid-April that there was no longer any reason to refrain, as a precautionary measure, from using the two types of hypodermic needle manufactured by Terumo. IGZ still holds this view now that RIVM has completed its investigation.

IGZ calls on manufacturers of hypodermic needles to draw up a standard that defines a limit value for traces of glue found in hypodermic needles. IGZ will also assess whether the current investigation demands further elaboration, and if so, in what way this can be achieved. In addition, IGZ and FAMHP will liaise with manufacturers of hypodermic needles to evaluate the inspection findings and discuss possible improvements.