SANOFI PASTEUR

September 24, 2012

Dear Health Care Professional:

Subject: Recall of Sanofi Pasteur Typhim Vi® (Typhoid Vi Polysaccharide Vaccine) Lots With Potentially Low Antigen Content

Sanofi Pasteur has voluntarily decided, as a precautionary measure, to recall several lots of Typhim Vi vaccine with potentially low antigen content.

This action was taken, in consultation with the US Food and Drug Administration, because of potential lower potency of the vaccine against typhoid fever due to a lower antigen content (ie, an antigen content below the official Pharmacopeia specification limit) in some lots of vaccine.

The list of lots being recalled in the US is in the recall packet.

- There is no safety concern for the persons who received a Typhim Vi vaccine from a recalled lot
- Persons who received a Typhim Vi vaccination from a recalled lot may have received less than the intended amount of antigen. Although Sanofi Pasteur does not have clinical trial data on the immunogenicity and efficacy of Typhim Vi vaccine with antigen content below specification, Sanofi Pasteur does not recommend revaccination earlier than otherwise indicated based on existing dose-ranging data and knowledge of the kinetics of Typhim Vi vaccine.
- Typhim Vi vaccine from lots not being recalled can be administered

Typhim Vi vaccine is indicated for active immunization against typhoid fever caused by *Salmonella enterica serovar typhi* (*S typhi*) in persons 2 years of age or older.

In the US, an alternative typhoid vaccine is VIVOTIF® (Typhoid Vaccine Live Oral Ty21a), distributed by Crucell.

Vaccination against typhoid fever is complementary to the classical avoidance of risky food and drink, and all hygienic recommendations must be carefully maintained.

Currently, there is no commercially available blood test to easily evaluate the anti-Vi serum antibody level of individuals and furthermore there is no validated immunological surrogate of protection (ie, antibody measurement) for typhoid fever.

Typhim Vi vaccine is a purified Vi polysaccharide and it behaves like a T-lymphocyte-independent antigen; the serum antibody response after a second dose is not greater than that observed after the initial vaccination. There are no data on immunogenicity for revaccination with a Vi polysaccharide vaccine less than 1 year after the primary dose. Revaccination is recommended 2 to 3 years after the previous dose.

There are no published efficacy or immunogenicity data of an oral attenuated *S typhi* vaccine in persons initially vaccinated with a Vi polysaccharide vaccine.

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Action to be taken:

- For individuals vaccinated with Typhim Vi vaccine less than 2 years ago and living in, or planning to visit, an endemic area
  - It is not feasible to measure the immunological status and hence level of protection against typhoid fever since these are not easily measurable and difficult to interpret
  - A reminder of the classical avoidance of risky food and drink should be provided
  - According to Typhim Vi vaccine prescribing information, there is no recommendation for revaccination before 2 years after the primary dose. There are limited data available on the immune response of revaccination if administered less than 2 years after the initial vaccination.

- For individuals vaccinated with Typhim Vi vaccine more than 2 years ago and living in, or planning to visit, an endemic area
  - A reminder of the classical avoidance of risky food and drink should be provided
  - Revaccination with a Vi polysaccharide typhoid vaccine is recommended
  - There are no data available on the immune response or efficacy of an oral attenuated *S typhi* vaccine administered after a previous vaccination with a Vi polysaccharide typhoid vaccine

- For individuals not yet vaccinated against typhoid fever and living in, or planning to visit, an endemic area
  - A reminder of the classical avoidance of risky food and drink should be provided
  - Vaccination with a licensed typhoid vaccine is recommended

In all cases, Sanofi Pasteur recommends that the decision to vaccinate and revaccinate is taken when the benefit of vaccination outweighs the risk of non-vaccination according to the level of exposure to typhoid fever.

Sincerely,

Michael Decker

Michael D. Decker, MD, MPH
Vice President, Scientific & Medical Affairs

MKT25667-1

SANOFI PASTEUR

URGENT VACCINE RECALL

Voluntary Recall of Typhim Vi®, Typhoid Vi Polysaccharide Vaccine With Potentially Low Antigen Content

Prefilled syringes (NDC[a] 49281-790-51): Lots E1287-1 (Expiration Date 20NOV12), E1288-1 (Expiration Date 17NOV12), G0481-1 (Expiration Date 07SEP13), G0507-1 (Expiration Date 20SEP13), and G0508-1 (Expiration Date 27SEP13)

20-dose vials (NDC 49281-790-20): Lot G1130-1 (Expiration Date 18MAR13)

September 24, 2012

Dear Health Care Provider:

Sanofi Pasteur is committed to providing our customers with vaccines of the highest purity, potency, and safety. As a precautionary measure, Sanofi Pasteur is voluntarily recalling some lots of Typhim Vi vaccine (prefilled syringes and 20-dose vials). The vaccine met all release requirements at the time of distribution. We are taking this action because these lots are at risk for lower antigen content. **There is no safety concern related to this action.**

We ask that you promptly examine your inventory. If you have any remaining doses from the above lots of the prefilled syringes or the 20-dose vials, PLEASE DO NOT USE THESE DOSES. We strongly recommend that you follow the procedures outlined in this Recall Letter, Instructions, and Business Reply Card.

For your reference, we have enclosed a Medical Statement to provide further information. Should you have any questions, please call Sanofi Pasteur at 1-800-872-2463.

This voluntary recall is being conducted with the knowledge of the US Food and Drug Administration. Please accept our apologies for any inconvenience associated with this recall. You are a valued customer and we greatly appreciate your cooperation.

Sincerely,

William L. Averbeck
Associate Vice President, Marketing

[a] NDC = National Drug Code.

MKT25663-1

SANOFI PASTEUR

Voluntary Recall of Typhim Vi®, Typhoid Vi Polysaccharide Vaccine

Instructions For Complying With Recall

Sanofi Pasteur is initiating a voluntary recall of 5 lots of Typhim Vi vaccine prefilled syringes (NDC[a] 49281-790-51) and 1 lot of 20-dose vials (NDC 49281-790-20).

Lot Number:	Expiration Date:	NDC:	Presentation:
E1287-1	20NOV12	49281-790-51	Syringe
E1288-1	17NOV12	49281-790-51	Syringe
G0481-1	07SEP13	49281-790-51	Syringe
G0507-1	20SEP13	49281-790-51	Syringe
G0508-1	27SEP13	49281-790-51	Syringe
G1130-1	18MAR13	49281-790-20	20-dose Vial

Please stop using doses from these lot numbers immediately and return all remaining inventory of these lots (see below).

No other distributed lots of Typhim Vi vaccine are affected.

Patient Action

There is no safety concern related to this action. Please see the enclosed Medical Statement for further information.

Product Action

We request that you examine your inventory to determine if you have any remaining stock of the recalled lots. Please return the Business Reply Card (BRC) whether or not you have remaining doses to help us determine that all existing stock has been returned.

Attached to the BRC is a postage-paid Shipping Label and a Packing Slip with instructions on how to return the product to: GENCO Pharmaceutical Services, 6101 North 64th St, Milwaukee, WI 53218.

Additional Assistance

Sanofi Pasteur will provide you with additional communication materials upon request. Please call 1-877-950-5479 for these items. For other inquiries, please contact Sanofi Pasteur Customer Services at 1-800-872-2463.

[a] NDC = National Drug Code.

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