

**SUMMARY OF GUIDANCE DOCUMENT ON  
REVISED PRECAUTIONARY MEASURES TO  
REDUCE THE POSSIBLE RISK OF  
TRANSMISSION OF CJD AND NVCJD BY BLOOD  
AND BLOOD PRODUCTS**

**Committee Update**

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64<sup>th</sup> Meeting  
September 16, 1999  
Bethesda Ramada Inn  
8400 Wisconsin Avenue  
Bethesda, MD

# FDA TALK PAPER

*Food and Drug Administration  
U.S. Department of Health and Human Services  
Public Health Service 5600 Fishers Lane Rockville, MD 20857*

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T99-38  
August 17, 1999

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## **NEW PRECAUTIONARY MEASURES TO REDUCE THE THEORETICAL RISK OF NEW VARIANT CJD FROM BLOOD PRODUCTS**

FDA today issued guidance to blood establishments to reduce the theoretical risk of transmission of new variant Creutzfeldt-Jakob Disease (nvCJD) to recipients of blood products.

This guidance, a precautionary measure, asks blood centers to exclude potential donors who have spent six or more cumulative months in the U.K. between Jan 1, 1980, and December 31, 1996 from donating blood.

FDA's guidance was developed in parallel with Canada's health ministry, Health Canada, which today is issuing similar guidance for its blood establishments.

FDA expects blood centers to implement the new guidance over the next six months.

NvCJD, a fatal degenerative disease found almost exclusively in the United Kingdom (U.K.), has been linked to an outbreak of bovine spongiform encephalopathy (BSE) there. No evidence exists that the disease has been transmitted by blood transfusion, but current studies cannot exclude this possibility.

The risk of nvCJD from BSE exposure is unknown. However, if the number of cases of nvCJD in the U.K. remains low for the next several years, then scientists estimate that the overall risk of nvCJD to people exposed to BSE will be small. No cases of BSE or nvCJD have been identified in the U.S.

Also included in this deferral are donors who have received non-U.S. licensed bovine insulin or other injectable products made from cattle in BSE endemic countries, although there are no reports of nvCJD transmission by such products.

The U.K. includes England, Scotland, Wales, Northern Ireland, the Isle of Man and the Channel Islands.

Previous guidance recommended that potential donors with risk factors or a diagnosis of classical

forms of CJD should be permanently deferred and that any blood products or plasma derivatives from these donors should be immediately retrieved, quarantined, and destroyed. However, under the revised guidance, withdrawal of plasma derivatives is no longer recommended in these cases. (The guidance remains the same for deferral of donors based on classical CJD and CJD risk and for quarantine of blood components not manufactured into plasma derivatives.) The reason is that laboratory and large epidemiologic studies suggest that the risk of classical CJD from plasma derivatives is extremely low. In addition, shortages of plasma derivatives due partly to the withdrawal policy related to CJD have caused serious disruptions in patient care.

Although there are no reports of transmission of classical forms of CJD from blood or blood products, nvCJD differs both in its symptoms and biology. In addition, less is known about nvCJD and whether it is transmissible through blood or blood products, although laboratory and epidemiologic studies are underway to evaluate this risk. Therefore, until more is known about the risk of nvCJD, withdrawal of all blood components and plasma derivatives made from donations from people later diagnosed with nvCJD is recommended.

The guidance can be obtained on FDA's Website at [www.fda.gov/cber/guidelines.htm](http://www.fda.gov/cber/guidelines.htm). Media questions on the Canadian guidance can be directed to Eric Morin, Health Canada at (613-957-2978).

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**FDA HOME PAGE**

# **Guidance for Industry**

## **Revised Precautionary Measures to Reduce the Possible Risk of Transmission of Creutzfeldt-Jakob Disease (CJD) and New Variant Creutzfeldt-Jakob Disease (nvCJD) by Blood and Blood Products**

Comments and suggestions regarding this document should be submitted within 60 days of publication in the *Federal Register* of the notice announcing the availability of the guidance. Submit comments to Dockets Management Branch (HFA-305), Food and Drug Administration, 5630 Fishers Lane, rm. 1061, Rockville, MD 20852. All comments should be identified with the docket number listed in the notice of availability that publishes in the *Federal Register*.

Additional copies of this guidance document are available from the Office of Communication, Training and Manufacturers Assistance (HFMA-40), 1401 Rockville Pike, Rockville, MD 20852-1448, or by calling 1-800-835-4709 or 301-827-1800, or from the Internet at <http://www.fda.gov/cber/guidelines.htm>

For questions regarding this document, contact the Director, Division of Hematology, at 301-496-4396.

**U.S. Department of Health and Human Services  
Food and Drug Administration  
Center for Biologics Evaluation and Research (CBER)  
August 1999**

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# **GUIDANCE FOR INDUSTRY<sup>1</sup>**

## **Revised Precautionary Measures To Reduce The Possible Risk of Transmission of Creutzfeldt-Jakob Disease (CJD) and New Variant Creutzfeldt-Jakob Disease (nvCJD) by Blood and Blood Products**

### **I. INTRODUCTION**

This guidance is released for immediate implementation. Justification for implementation prior to comment is as follows: 1) the guidance presents a less burdensome policy that is consistent with the public health for the management of blood components and plasma derivatives in cases where the donor has classic CJD or CJD risk factors, and 2) there are public health reasons for immediate implementation of the recommendations regarding additional safeguards with respect to new variant CJD.

This guidance supersedes the FDA memorandum of December 11, 1996, entitled "Revised Precautionary Measures to Reduce the Possible Risk of Transmission of Creutzfeldt-Jakob Disease (CJD) by Blood and Blood Products." It summarizes the reasons for changes to the December 11, 1996 memorandum and provides comprehensive current recommendations, including new recommendations concerning nvCJD.

FDA recognizes that the scientific technology for determining individuals at risk for CJD and nvCJD, and detecting the infectious agents in tissues and in products, is continuing to advance, and that there may be a need for future updating of the relevant guidance.

### **II. BACKGROUND**

CJD is a rare but invariably fatal degenerative disease associated with a poorly understood transmissible agent (1, 2). CJD cases occur at low frequency by an unknown mechanism (sporadic CJD). It may also be acquired by exogenous (usually iatrogenic) exposure to infectious material; or may be familial, caused by a genetic mutation of the prion protein gene. Clinical latency for iatrogenic CJD may exceed 30 years.

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<sup>1</sup> This guidance document represents the agency's current thinking on precautionary measures to reduce the possible risk of transmission of Creutzfeldt-Jakob Disease (CJD) and new variant CJD (nvCJD) by blood and blood products and to assure that blood and blood products are not adulterated or misbranded, within the meaning of the Federal Food Drug and Cosmetic Act, and are safe, pure and potent within the meaning of the Public Health Service Act. It does not create or confer any rights for or on any person and does not operate to bind FDA or the public. An alternative approach may be used if such approach satisfies the requirements of the applicable statute, regulations or both.

In 1996, a previously unrecognized variant of CJD was described almost exclusively in the United Kingdom (3), and is referred to as new variant CJD (nvCJD). Although to date only forty patients have died of nvCJD, the extent and occurrence of a nvCJD epidemic in the United Kingdom cannot yet be determined. No cases of nvCJD have been identified in the United States. Laboratory and epidemiologic studies have linked nvCJD to an outbreak of bovine spongiform encephalopathy (BSE) in the United Kingdom (4, 5). BSE infection in cattle appeared in 1980, peaked in 1992, and fell to low levels by 1996.

On December 11, 1996, the Food and Drug Administration (FDA) issued a Memorandum to all registered blood and plasma establishments and all establishments engaged in manufacturing plasma derivatives entitled "Revised Precautionary Measures to Reduce the Possible Risk of Transmission of Creutzfeldt-Jakob Disease (CJD) by Blood and Blood Products." The memorandum recommended as a precaution, to quarantine and destroy in-date Source Plasma and plasma derivatives, and in-date transfusion products prepared from donors who were at increased risk for developing CJD or who were subsequently diagnosed with CJD. The memorandum recommended permanent deferral of donors with CJD or CJD risks, unless, for cases of genetic risk, the donor underwent genetic testing which did not reveal a familial-CJD associated abnormality of the prion protein gene. This document did not make recommendations specific to nvCJD. New FDA recommendations announced on September 8, 1998, specified 1) reversal of the recommendation to withdraw plasma derivatives from donors with classic CJD or CJD risk factors, and 2) recommendation to withdraw all material from nvCJD donors.

#### **A. CJD: Rationale for Not Withdrawing Plasma Derivatives from Donors with CJD or CJD Risk**

Accumulating epidemiologic information and laboratory studies have indicated that transmission of the CJD infectious agent by blood products is highly unlikely. Five published case-control studies analyzed over 600 CJD cases. None of these studies showed that blood transfusion increased the risk for CJD (6-8). Investigations of recipients of blood components from known CJD donors have not revealed transmission of the CJD agent (9, 10), although these cohort studies are limited by the small numbers of such recipients, especially with long-term follow-up, and thus would only be likely to reveal a high transmission rate. National mortality surveillance performed by the Centers for Disease Control and Prevention (CDC) indicates that patient populations with increased exposure to blood or blood products are not at increased risk for CJD (11). During a 18-year period (1979-96), 4,468 cases of CJD were reported to CDC. When death records were searched, none of these cases were reported to have had hemophilia, thalassemia, or sickle cell disease. More directed evaluation of persons with hemophilia have not shown a link to CJD. In one study, brain tissue from 24 hemophiliacs who died with neurologic disease was examined; none had evidence of CJD (12). In a second study, brain tissue from 33 hemophiliacs

in the United Kingdom, who died of various causes was examined, and none had evidence for CJD (13). Additional surveillance of cryoprecipitate recipients is underway in Seattle, WA. Through 1997, no CJD cases have been reported among 101 patients who, together, received over 238,000 units of cryoprecipitate between 1979-85; 76 of these subjects are alive from 12.5 to 18.5 years later (14). Three of these recipients were known to have received at least one unit of cryoprecipitate from donors known to have developed CJD.

While epidemiological studies have not revealed transmission of CJD in humans by blood and blood products, and laboratory experiments have demonstrated that manufacturing significantly lowers the amount of the CJD infectious agent in plasma derivatives, some laboratory experiments have shown that blood and plasma fractions from experimentally infected animals transmit CJD to recipient animals when directly injected into the brain (15-17). In a single case, transfusion of blood directly from an infected hamster transmitted disease to the recipient (Transmissible Spongiform Encephalopathy (TSE) Advisory Committee transcript, December 1998) (27).

In contrast, other laboratory studies have not supported the transmission of CJD through transfusion of blood. Transfusion of blood units from 3 CJD patients failed to transmit CJD to chimpanzees (15), and the validity of reported positive transmissions to animals using blood from patients with CJD has been questioned (17).

Plasma derivatives are unlikely to transmit disease in humans because: 1) a CJD-implicated plasma unit would be diluted into a large plasma pool, leading to a low number of infectious units in a dose of the final product, 2) intravenous and intramuscular inoculation alone is less efficient than cerebral inoculation for CJD transmission, and 3) further processing of plasma pools by Cohn fractionation and manufacturing processes such as column chromatography, precipitation, and filtration, have been shown to diminish titers of CJD-like agents, in spiking experiments using scaled-down manufacturing procedures (16) (TSE Advisory Committee transcript, December 1998) (27).

#### **B. NvCJD: Current Case Definitions, and Rationale for Withdrawing Plasma Derivatives From Donors with NvCJD**

NvCJD is distinguished from CJD by differences in clinical presentation and neuropathologic changes (3, 18-20). Clinically, nvCJD patients have an earlier age of onset, with median age at death of 29 years, compared to CJD patients, whose mean age at death is 67 years. NvCJD presents with predominantly psychiatric and sensory symptoms, and absence of diagnostic EEG changes frequently seen in CJD. NvCJD patients have a more prolonged duration of illness (median survival 14 months) than patients with CJD (median survival 4 months) (21). Neuropathologic features of nvCJD include florid prion protein plaques surrounded by spongiform changes, which

are rarely found in CJD. In addition, prion protein can be detected immunohistochemically in the lymphoid tissues of nvCJD, but not CJD patients (22). This observation led to concerns that transmission of nvCJD by blood might be possible.

Neuropathologic examination of brain tissue is required to confirm a diagnosis of nvCJD. A confirmed or definite case of nvCJD is currently defined by the following neuropathologic findings: 1) numerous widespread kuru-type amyloid plaques, surrounded by vacuoles, in both cerebellum and cerebrum (“florid plaques”); 2) spongiform change most evident in the basal ganglia and thalamus, with sparse distribution in the cerebral cortex; and 3) high density accumulation of prion protein, particularly in the cerebrum and cerebellum as shown by immunohistochemistry.

In cases where adequate neuropathology specimens are not available, a clinical diagnosis of “suspected” nvCJD could be made based upon certain atypical clinical features. Although recommended diagnostic evaluations and criteria for nvCJD are evolving, at present the CDC would classify cases in the United States with all of the following features as “suspected” nvCJD:

1. Current age (if alive) or age at death <55.
2. Persistent painful sensory symptoms and/or psychiatric symptoms at clinical presentation.
3. Dementia, and delayed development ( $\geq 4$  months after illness onset) of ataxia, plus at least one of the following three neurologic signs: myoclonus, chorea, or dystonia.
4. A normal or abnormal EEG, but not the diagnostic EEG changes often seen in classic CJD.
5. Duration of illness greater than 6 months.
6. Routine investigations do not suggest an alternative, non-CJD diagnosis.
7. A history of possible exposure to bovine spongiform encephalopathy (BSE), e.g., having been a resident or traveler to a BSE-affected country from 1980 through 1996.
8. No history of iatrogenic exposure to CJD, such as receipt of a dura mater graft, or human pituitary-derived hormones.
9. The patient does not have a prion protein gene mutation, or, if this has not been determined, there is no history of CJD in a first degree relative.

The transmissibility of nvCJD by blood or blood products is unknown, although laboratory and epidemiologic studies are underway to evaluate this risk. NvCJD appears to be distinct from classic variants of CJD both clinically and biologically and therefore transmissibility cannot confidently be predicted from studies of CJD. Until more is known about the possibility of nvCJD transmission by blood components or

plasma derivatives, a precautionary policy of withdrawal for all of these products is recommended for material from donors with nvCJD.

### **C. Current CJD and NvCJD Recommendations**

On January 29, 1998, the Public Health Service (PHS) Advisory Committee on Blood Safety and Availability reviewed laboratory and epidemiologic information concerning CJD transmissibility by blood, as well as the impact of CJD-related withdrawals upon the supply of medically necessary plasma derivatives. Based upon this review, the committee recommended that FDA consider revising its December 11, 1996 guidance to the extent necessary to relieve shortages of medically necessary plasma derivatives. Subsequently, epidemiological and laboratory studies were evaluated by the Department of Health and Human Services Blood Safety Committee, which determined at its July 23, 1998 meeting, that the current CJD guidance on quarantine and withdrawal of blood products should be revised. A policy position to modify the withdrawal recommendations for plasma derivatives was announced by Surgeon General David Satcher, M.D. on August 27, 1998, at a public meeting of the PHS Advisory Committee on Blood Safety and Availability. It was recommended that plasma derivatives be withdrawn and intermediates quarantined only if a blood donor develops nvCJD and that previously recommended withdrawals and quarantines be discontinued for classical CJD and CJD risk factors. A consistent recommendation was made available on the Internet by the FDA on September 8, 1998.

United Kingdom residents have an increased risk of developing nvCJD. The number of people incubating nvCJD in the United Kingdom cannot yet be predicted. The FDA received additional advice from the TSE Advisory Committee (27) on December 18, 1998, concerning deferral of donors who have traveled to or resided in the United Kingdom for a certain period of time, and therefore could have been exposed to the nvCJD agent. The TSE Advisory Committee recommended deferring such donors, but requested additional information concerning the impact of deferrals on the blood supply in order to provide more specific advice about time of residence in the United Kingdom. On June 2, 1999, the TSE Advisory Committee reaffirmed its recommendation to defer donors who have traveled to or resided in the United Kingdom, until more is known about the potential risk of nvCJD incubation in such donors and about the ability of blood to transmit nvCJD (28).

Comprehensive revised recommendations based upon the above discussions and PHS and FDA internal deliberations are contained in this guidance document. Recommendations for donor deferral, product disposition, and recipient notification have been developed based upon consideration of risk in the donor, risk in the product, and the effect of withdrawals on the supply of life- and health-sustaining blood components and plasma derivatives. In particular, nvCJD is distinguished from CJD and CJD risk factors, based on lack of sufficient historical and epidemiological

experience, and lack of available scientific studies relevant to the likelihood of transmission of nvCJD via blood components or derivatives.

### **III. RECOMMENDATIONS FOR DONOR DEFERRAL**

#### **A. Recommended Donor Deferral Criteria**

1. FDA recommends that donors who have been diagnosed with nvCJD or CJD be permanently deferred.
2. FDA recommends that donors at increased risk for CJD (as identified by questions in section III.B.) be indefinitely deferred and appropriately counseled. Donors are considered to have an increased risk for CJD if they have received a dura mater transplant, human pituitary-derived hormones, or have one or more blood relatives with CJD.
3. FDA believes that donors who have resided in the United Kingdom (as identified by questions in section III.D.) may be at risk for exposure to nvCJD. As a precaution, FDA recommends that donors who have spent six months or more cumulatively in the United Kingdom from 1980 through 1996 (i.e., from January 1, 1980 through December 31, 1996) be indefinitely deferred.
4. FDA recommends that donors who received injectable products made from cattle in BSE endemic countries (as identified by questions in section III.D.) be indefinitely deferred. FDA has previously recommended that material from cattle in BSE countries not be used in the manufacture of FDA regulated products (59 FR 44591, August 29, 1994).

#### **B. Recommended Questions for Identifying Donors at an Increased Risk for CJD**

FDA recommends that Source Plasma donors be questioned at the first donation and at each annual physical examination thereafter, and that Whole Blood donors be questioned at the time of each donation. If the donor is not familiar with the term "Creutzfeldt-Jakob Disease," it may be taken as a negative response. These questions are similar to those in the December 11, 1996 guidance, except that receipt of human pituitary gonadotropins has been added as a risk factor, based upon reports of CJD transmission by these preparations (23, 24).

**Question 1)** "Have you or any of your blood relatives had Creutzfeldt-Jakob Disease or have you ever been told that your family is at an increased risk for Creutzfeldt-Jakob Disease?"

NOTE: This may be asked as one or two questions in order to elicit complete information regarding a family history of CJD.

**Question 2)** “Have you ever received human pituitary-derived hormones, such as growth hormone or gonadotropins?”

NOTE: If the donor is uncertain about his or her treatment, the following question describing human pituitary-derived growth hormone injections may be asked: “Was the hormone treatment given by injection?”

**Question 3)** “Have you ever had brain surgery?” and if so, “Have you received a dura mater (or brain covering) graft?”

FDA considers that donors who answer “Yes” to any of the above questions are at an increased risk for developing CJD.

### **C. Recommendations Regarding Donor Reentry After Donor Deferral for Risk of Familial CJD**

If a donor is deferred because of family history (one or more family members with CJD), that donor may be reentered if:

- 1) The diagnosis of CJD in the family member(s) is confidently excluded, or CJD in the family member(s) is iatrogenic, or the family member(s) is(are) not a blood relative(s); or
- 2) Laboratory testing (gene sequencing) shows that the donor does not have mutations associated with familial CJD.

### **D. Recommended Questions for Identifying Donors at Risk for Exposure to BSE**

Note that the United Kingdom is defined as England, Scotland, Wales, Northern Ireland, Isle of Man, and Channel Islands. Residence in the Republic of Ireland is not counted as contributing to risk of nvCJD exposure.

1. Donors who have resided or traveled to the United Kingdom

**Question 1)** Have you visited or lived in the United Kingdom (England, Northern Ireland, Scotland, Wales, the Isle of Man, or the Channel Islands) from 1980 through 1996?

**Question 2)** If so, have you spent a total time of 6 months or more in the United Kingdom from 1980 through 1996?

FDA recommends that donors who answer "Yes" to both of the above questions be indefinitely deferred.

2. Donors who have been exposed to bovine-derived injectable products made in BSE endemic countries

No cases of transmission of nvCJD have been reported in recipients of bovine insulin or other injectable products manufactured in BSE-affected countries. However, as a precaution, FDA has recommended that material from cattle in BSE countries not be used in the manufacture of FDA regulated products (59 FR 44591, August 29, 1994). Consistent with these recommendations, as a precaution, FDA recommends that blood donors who have received bovine insulin or other injectable products made from cattle in BSE endemic countries such as the United Kingdom, be indefinitely deferred.

The following question or a similar question is recommended to be asked of potential donors:

**Question:** Since 1980, have you knowingly obtained and been injected with a non-U.S. licensed drug product made from cattle, such as bovine (beef) insulin?

FDA recommends that donors who received injectable products from cattle in BSE endemic countries be indefinitely deferred. A current report of BSE surveillance in Europe can be obtained on the Internet (29).

#### **IV. RECOMMENDATIONS FOR DISPOSITION OF IMPLICATED PRODUCTS**

##### **A. Blood Components**

The recommended disposition of blood components is the same for all of the following: donors with CJD, donors with CJD risk factors, donors with nvCJD, and donors with potential exposure to nvCJD (travel or residence in the United Kingdom for 6 months or more, cumulatively from 1980 through 1996, or recipients of bovine-derived injectable products from BSE endemic countries since 1980).

1. FDA recommends that all in-date blood components under the control of

the Establishment (Whole Blood, blood components, Source Leukocytes, Pooled Platelets, unpooled Source Plasma) that were collected from the donor and intended for use in transfusion or for further manufacturing into injectable products be immediately retrieved and quarantined for subsequent destruction. FDA is not recommending the withdrawal and quarantine of classical CJD materials intended for further manufacturing into non-injectable products; however FDA recommends that such products be labeled appropriately (see section VI.A. for labeling recommendations). FDA recommends that material from nvCJD donors be immediately retrieved and quarantined, but may be saved for use in research on nvCJD by laboratories qualified to use this material (see section VI.A for labeling recommendations). Furthermore, FDA recommends that Establishments immediately notify the CJD Surveillance Unit of the Division of Viral and Rickettsial Diseases of the Centers for Disease Control and Prevention (CDC) at (404) 639-3091, and the FDA, Director, Division of Hematology at (301) 496-4396, if they receive a report of a donor with nvCJD.

FDA also recommends immediate notification of CDC and FDA in case of a post donation report of a donor with a physician's clinical or pathological diagnosis of CJD and age less than 55 years. Donors under 55 years of age who are diagnosed with CJD will be investigated and reviewed by FDA in collaboration with CDC. The purpose of such investigations will be to assess the likelihood of nvCJD, in order to identify any case which occurs in the United States.

2. FDA recommends that all consignees should be notified within one week after receipt of post donation information, to immediately retrieve and quarantine any implicated in-date blood components intended for use in transfusion or for further manufacturing into injectable products, for subsequent destruction. NvCJD-implicated material may be saved for use in research on nvCJD by qualified laboratories (see section VI.A. for labeling recommendations).

## **B. Plasma Derivatives**

1. Plasma derivatives from donors with CJD or CJD risk factors, or potential exposure to nvCJD (as defined in section III.A.)
  - a. FDA recommends that pooled plasma, intermediates, and derivatives should not be withdrawn.
  - b. FDA recommends consignee notification for all plasma intended for further manufacture into derivatives. Consignee notification is

recommended in order to effect withdrawal of plasma that has not already been pooled for manufacture. FDA recommends that single, unpooled units of plasma be retrieved and quarantined for subsequent destruction. FDA does not recommend retrieval and quarantine of plasma that has been pooled prior to consignee notification.

2. Plasma derivatives from donors diagnosed with nvCJD

FDA recommends that Establishments immediately notify the CJD Surveillance Unit of the Division of Viral and Rickettsial Diseases of the Centers for Disease Control and Prevention (CDC) at (404) 639-3091, and the FDA, Director, Division of Hematology at (301) 496-4396, if they receive a report of a donor with nvCJD.

- a. FDA recommends that if an Establishment receives a post donation report of nvCJD diagnosis, the Establishment immediately retrieve and quarantine for subsequent destruction pooled plasma, intermediates, and derivatives, and any other materials containing plasma from the nvCJD donor. Alternatively, material from nvCJD donors may be saved for use in research on nvCJD by qualified laboratories (see section VI.A. for labeling recommendations). FDA recommends against the use of such material for non-injectable products.
- b. FDA recommends that, within one week of receiving a post donation report of nvCJD diagnosis, the Establishment notify all consignees to immediately retrieve and quarantine for subsequent destruction pooled plasma, intermediates, and derivatives, and any other materials containing plasma from the nvCJD donor. Alternatively, this material may be saved for use in research on nvCJD (see section VI.A. for labeling recommendations).

3. Plasma derivatives from donors with a physician's clinical or pathological diagnosis of CJD and age less than 55 years

FDA recommends that Blood or Plasma Establishments immediately notify the CJD Surveillance Unit of the Division of Viral and Rickettsial Diseases of the Centers for Disease Control and Prevention (CDC) at (404) 639-3091, and the FDA, Director, Division of Hematology at (301) 496-4396, if they receive a report of a donor with a physician's clinical or pathological diagnosis of CJD and age less than 55 years.

Donors under 55 years of age who are diagnosed with CJD will be investigated and reviewed by FDA in collaboration with CDC. The purpose of such investigations will be to assess the likelihood of nvCJD, in order to consider precautionary withdrawal of plasma derivatives.

- a. Recommendations to quarantine and withdraw plasma derivatives from such donors will be made by FDA on a case-by-case basis, depending upon results of the investigation. Precautionary quarantine and withdrawal may be advised if available information is ambiguous, and does not clearly indicate the presence of a classic form of CJD.
- b. FDA recommends that quarantined and withdrawn material from such donors should be treated in the same manner as for nvCJD (see section IV.B.2.).

### **C. Disposal of Retrieved and Quarantined Products**

The transmissible agent of CJD is quite resistant to most disinfecting regimens. There is no current consensus of specific details of decontamination requirements for blood products. However, the preferred methods of destruction of CJD-implicated material are steam autoclaving at 132° C for 1-4 hours, incineration, or treatment with 1 N NaOH or concentrated sodium hypochlorite for at least 1 hour at room temperature (25, 26 and 30). These treatments are known to diminish, but may not completely eliminate, infectivity.

FDA believes that blood components and plasma derivatives from donors with nvCJD, or which have been withdrawn because the donor might have nvCJD, may be saved for use in research on nvCJD by qualified laboratories (see section VI.A. for labeling recommendations).

## **V. CONSIGNEE NOTIFICATION AND COUNSELING: ADDITIONAL RECOMMENDATIONS**

FDA recommends if a donor is found to have CJD, nvCJD, risk factors for CJD, or if withdrawal is recommended in cases under investigation for nvCJD, that Establishments inform all consignees of previously distributed blood components from that particular donor. FDA recommends that the search of records to identify prior collections from that donor extend back indefinitely to the extent that electronic or other readily retrievable records are available. Consignee notification will enable the consignee to inform the physician or other qualified personnel responsible for the care of the recipient so that recipient tracing and medically appropriate notification and counseling may be performed at the discretion of care providers.

In cases of donors diagnosed with nvCJD or donors under investigation for nvCJD, FDA recommends that Establishments inform consignees of affected plasma derivatives as well as blood components.

NOTE: If a donor is found to have risk factors for nvCJD (due to six months domicile in the United Kingdom from 1980 through 1996, or due to injection of a bovine-derived product made in a BSE endemic country), FDA recommends consignee notification for the purpose of quarantine and disposition of in-date blood components (see section IV.A.). However, FDA does not recommend additional consignee notification for the purpose of tracing and notifying prior recipients.

## **VI. LABELING RECOMMENDATIONS**

### **A. Labeling of Implicated Products for Research or Intended for Further Manufacture into Non-Injectable Products**

FDA recommends that blood components from donors with CJD or who are at increased risk for CJD or exposure to nvCJD, intended to be used in research or manufacture into non-injectable products, be appropriately labeled with the following statements:

1. "Biohazard";
2. "Collected from a donor determined to be at risk for CJD"; or "Collected from a donor diagnosed with CJD"; or "Collected from a donor with potential risk of exposure to new variant CJD"; and
3. "For laboratory research use only"; or "Caution: for use in manufacturing non-injectable products only."

FDA believes that blood components from donors with nvCJD should not be used for further manufacture into non-injectable products. However blood components and plasma derivatives from donors with nvCJD or which have been withdrawn on a case-by-case basis for suspicion of nvCJD, may be used in laboratory research on nvCJD by qualified laboratories. FDA recommends that these products be labeled with the following statements:

1. "Biohazard";
2. "Collected from a donor with new variant CJD"; and

3. "Only for laboratory research on new variant CJD".

## **B. Labeling of Non-Implicated Products**

No transmission of CJD or nvCJD by human blood components or plasma derivatives has been documented to date. However, as a precaution, FDA recommends that all blood components and plasma-derived products include labeling to address the theoretical risk. Because albumin has never been known to transmit viral diseases, and because model laboratory experiments suggest that albumin is less likely to contain CJD-like agents than other plasma fractions, FDA believes that a more specific statement may be provided in the package insert for albumin and products containing albumin.

1. For Whole Blood and blood components, FDA recommends the Circular of Information be revised to include under "Side Effects and Hazards," the following statement:

"Because this product is made from human blood, it may carry a risk of transmitting infectious agents, e.g., viruses, and theoretically, the Creutzfeldt-Jakob disease (CJD) agent."

Until the circular is revised, this statement may be inserted or attached to the current circular.

2. For plasma-derived products other than albumin, FDA recommends the package insert warning section be revised to include the following statement:

"Because this product is made from human blood, it may carry a risk of transmitting infectious agents, e.g., viruses, and theoretically, the Creutzfeldt-Jakob disease (CJD) agent."

3. For plasma-derived albumin, FDA recommends the package insert warning section be revised to include the following statement:

"Albumin is a derivative of human blood. Based on effective donor screening and product manufacturing processes, it carries an extremely remote risk for transmission of viral diseases. A theoretical risk for transmission of Creutzfeldt-Jakob disease (CJD) also is considered extremely remote. No cases of transmission of viral diseases or CJD have ever been identified for albumin."

4. For products containing plasma-derived albumin, FDA recommends the package insert warning section be revised to include the following statement:  
“This product contains albumin, a derivative of human blood. Based on effective donor screening and product manufacturing processes, it carries an extremely remote risk for transmission of viral diseases. A theoretical risk for transmission of Creutzfeldt-Jakob disease (CJD) also is considered extremely remote. No cases of transmission of viral diseases or CJD have ever been identified for albumin.”

## **VII. IMPLEMENTATION OF RECOMMENDATIONS**

The recommendations contained in this guidance may be implemented without prior approval from the agency. FDA recommends that Establishments implement this guidance as soon as feasible, but not later than six months from the date of publication of this guidance. Licensed Establishments implementing these recommendations should submit in their annual reports (21 CFR 601.12(d)) a statement indicating the date that revised standard operating procedures (SOPs) consistent with the recommendations have been established and implemented. If Establishments elect to use an insert to incorporate the language recommended in this guidance (until the Circular of Information is revised), the annual report may also reference the date of use of the insert. In the event that a Blood Establishment elects to use other wording, FDA requests the Establishment to submit the labeling in accordance with 21 CFR 601.12(f)(2). FDA further requests manufacturers of plasma-derived products to submit labeling changes in accordance with 21 CFR 601.12(f)(2).

If a manufacturer of blood components or plasma-derived products believes that an alternative approach to the recommendations contained in this guidance document would provide equivalent protection, the manufacturer is invited to discuss the approach with FDA.

## VIII. REFERENCES

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