4006: Cellular Therapy Infusion

This form must be completed for all infusions for recipients of non-HCT cellular therapy (including post-HCT "DCI/DLI" infusions). For recipients of hematopoietic cellular transplants (HCT), complete the appropriate HCT infusion form (Form 2006).

The Form 4006 is designed to capture product- and infusion-specific information for all products/infusions given to a recipient as part of a course of cellular therapy. In addition to use in research, this information is used for quality assurance measures, both by the NMDP and the Cord Blood Banks.

A series of collections from the same donor that uses the same collection method and mobilization cycle, even if the collections are performed on different days, should be considered a single cellular therapy product if only one set of manufacturing steps are applied to the collected material.

If more than one infusion occurs, as defined by event date, each infusion must be analyzed and reported on a separate form 4006. This is true even if it's the same product being infused on a later date.

If more than one type of cellular therapy product is infused, each product type must be analyzed and reported on a separate form 4006. Products from the same donor but obtained using different manufacturing steps are considered different products and require multiple 4006 forms, one for each product.

Additionally, if the cells were manipulated or modified by different methods and at the end of the manufacturing process are combined for a single infusion or administration, it will be considered a single product and it will require a single Form 4006.

For more information see" Appendix D–How to Distinguish Infusion Types":#appendix-d and "Appendix E–Definition of a Product":#appendix-d.

Links to Sections of Form

Manual Updates:

Sections of the Forms Instruction Manual are frequently updated. The most recent updates to the manual can be found below. For additional information, select the manual section and review the updated text. If you need to reference the historical Manual Change History for this form, please click here or reference the retired manual section on the Retired Forms Manuals.

Date	Manual Section	Add/ Remove/ Modify	Description
7/ 25/ 17	4006: Cellular Therapy Infusion	Modify	Version 2 of the 4006: Cell Therapy Infusion section of the Forms Instructions Manual released. Version 2 corresponds to revision 2 of the Form 4006.

Q1-27: Cellular Therapy Product Identification

> ✻ If more than one type of cell therapy product is infused, each product type must be reported on a separate 4006 form.

Question 1: Specify donor:

Indicate the donor type for this product. If the product is “off the shelf” or a “third party” donor product obtained from pharmaceutical companies or other corporate entities, donor type should still be identified.

An autologous product has cells collected from the recipient for his/her own use.
Continue with question 3.

A related donor (allogeneic, related) is a blood-related relative. This includes syngeneic, monozygotic (identical) twins, non-monozygotic (dizygotic, fraternal, non-identical) twins, siblings, parents, aunts, uncles, children, cousins, half-siblings, etc. Do not include adoptive parents/children or stepparents/children.
Continue with question 3.

An unrelated donor (allogeneic, unrelated) is a donor who shares no known ancestry with the recipient. Include adoptive parents/children or stepparents/children. Distinguish if the product in an NMDP product or a non-NMDP product. Examples of non-NMDP donor registries include, but are not limited to: St. Louis Cord Blood Bank, Anthony Nolan, and StemCyte International Cord Blood Center.
Continue with question 2.

Question 2: Did NMDP/Be the Match facilitate the procurement, collection, or transportation of the product?

The intent of this question is to identify NMDP products. This information is included on the product label, the paperwork accompanying the product, and within the NMDP search/product documentation.

Question 3: Was the product a cord blood unit?

If the product was an autologous cord blood unit, continue with question 7 to report the non-NMDP CBU ID. If the autologous product was not a CBU, continue with question 18.

If the product was a related cord blood unit, continue with question 7 to report the non-NMDP CBU ID. If the product was not a related CBU, continue with question 13 to report donor DOB.

If the product was an NMDP unrelated cord blood unit, continue with question 4 to report the NMDP CBU ID. If the unrelated donor was NMDP but not a CBU, report the NMDP donor ID in question 5.

If the product was a non-NMDP unrelated cord blood unit, continue with question 7 to report the non-NMDP CBU ID. If the unrelated donor was non-NMDP but not a CBU, report the non-NMDP unrelated donor ID in question 6.

Question 4: NMDP Cord Blood Unit:

Report the NMDP Cord Blood Unit ID. This information is included on the product label, the product insert accompanying the product, and within the NMDP search/product documentation. The ID is always numeric and begins with "9" (e.g., 9000-0000-0). If the product ID does not begin with a "9," the product may not be an NMDP cord blood unit and the source of the product should be double-checked. Continue with question 18.

Question 5: NMDP Donor ID:

Report the NMDP Donor ID (e.g., 0000-0000-0). This ID is unique for each donor and is assigned by the NMDP. This information is included on the product label, the product insert accompanying the product, and within the NMDP search/product documentation. Continue with question 18.

Question 6: Non-NMDP unrelated donor ID: (not applicable for related donors)

Do not complete this field if the recipient has an NMDP donor, a related donor, or a cord blood donor. This ID is often located on the product label, the product insert accompanying the product, and the registry-specific search/product documentation. Continue with question 8.

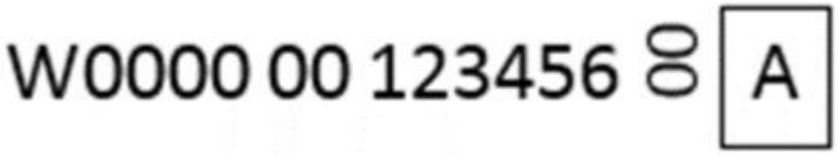
Question 7: Non-NMDP cord blood unit ID: (include related and autologous CBUs)

Examples of non-NMDP donor registries include, but are not limited to: St. Louis Cord Blood Bank and StemCyte International Cord Blood Center. This ID is often located on the product label, the paperwork accompanying the product, and registry specific search/product documentation. Enter the non-NMDP cord blood ID. Note that some cord blood banks can ship their units either through the NMDP or directly to the center. Carefully review the accompanying documentation to determine which is appropriate for your unit. You may wish to consult with your center's Transplant Coordinator, as they will have insight as to how the product was acquired. Continue with question 8.

Question 8: Is there an ISBT DIN number associated with the product?

Report “yes” if there is an International Society of Blood Transfusion (ISBT) Donation Identification Number (DIN) associated with the product. If the product is a cord blood unit, continue with question 9, all other products continue with question 10.

If the product has an ISBT label on it, the ISBT DIN number is in the upper left-hand corner and consists of a letter followed by 12 numbers, two numbers on the end, and a letter in a box. Example below:



Please find additional information regarding the ISBT DIN numbers and traceability at ISBT 128 Basics . For example, you may see a barcode with an alphanumeric string below it.

Report “no” if there isn’t an ISBT DIN associated with the product. If the donor is auto, continue with question 18. If the donor is related continue with question 13. If the donor is unrelated, non-NMDP continue with question 11.

Question 9: Is the CBU ID also the ISBT DIN number?

Answered only for cord blood units. Report “yes” if the non-NMDP CBU ID is the same as the International Society of Blood Transfusion (ISBT) Donation Identification Number (DIN) and continue with question 11.

If the CBU ID is not the same as the ISBT DIN number, select “no” and continue with question 10.

Question 10: Specify the ISBT DIN number:

Report the ISBT DIN number using the letter, 12 digits, 2 numbers on end, and the letter in the box.

Question 11 & 12: Registry or UCB Bank ID:

Specify the registry used to obtain the adult donor or umbilical cord blood unit. The Bone Marrow Donors Worldwide codes have been adopted to avoid submitting the entire name and address of the donor registry.

For example, the registry code for Belgium donors is (B) but Belgium cord blood units the registry code is (BCB).

Some common banks that do not list with BMDW have been added to the Form2006revision4 list, including St Louis Cord Blood Bank (SLCBB) and Viacord (VIAC).

If the donor was found through DKMS, report the registry that facilitated the cellular therapy product. Some registries may be listed more than once with BMDW (once for marrow/PBSC products and differently for cord blood products). Ensure that the appropriate code for the product was selected, because distribution of data is dependent on the code.

If there is no match code for the adult donor registry or cord blood bank, provide the registry's official name in the "Specify other registry" field.

Please ensure that the registry you are entering under "other" is not already listed in the pull-down list for question 11. Entries such as NMDP adult donors, NMDP cords, and New York Cord Bank each have their own entries above.

Question 13 & 14: Date of birth (donor / infant):

For related donors only, report if the donor's/infant's date of birth is "known" or "unknown" for question 13. If the donor's/infant's date of birth is known, report the date of birth (YYYY-MM-DD) in question 14. If the donor's/infant's date of birth is unknown, continue with question 15.

Question 15 & 16: Age (donor / infant):

For related donors only, if the DOB is unknown, report if the donor's/infant's age is "known" or "unknown" for question 15. If the donor's/infant's age is known, report the donor's/infant's age at the time of product collection in question 16. Report the age in months if the recipient is less than 1 year old, otherwise report the age in years. If the donor's/infant's age at collection is unknown, continue with question 17.

Question 17: Sex (donor / infant):

For related donors only, indicate the donor's biological sex as "male" or "female." For cord blood units, report the infant donor's sex.

Question 18 & 19: Cell product ID:

Report if the product has a Cell product ID in question 18 and specify the ID in question 19. Product IDs can be numeric or alphanumeric.

Question 20 & 21: Batch number:

Report if the product has a Batch number in question 20 and specify the Batch number in question 21. Batch numbers can be numeric or alphanumeric

Question 22 & 23: Lot number:

Report if the product has a Lot number in question 22 and specify the Lot number in question 23. Lot numbers can be numeric or alphanumeric

Question 24-27: Where was the cellular therapy product manufactured / processed?

If the product was manufactured by a **pharmaceutical or biotech company**, continue with question 26 and select the company from the list. If the company is not in the dropdown list, select 'other pharmaceutical company' and report the name and location of the company in question 27.

If the product was manufactured by a **cell processing laboratory off site**, that is not a pharmaceutical/ biotech company, continue with question 27 and report the name and location of the laboratory.

If the product was manufactured by a **cell processing laboratory at the same center as the product is being infused**, continue with question 28. *If the product is from an NMDP donor used for a prior HCT, please select this option.*

If the product was manufactured by another site not listed above, continue with question 25 to specify the other site and report the name and location in question 27.

Q28-33: Cell Product Source

This section allows for the selection of multiple tissue sources and cell types for a product. For example, if the product consists of two different types of lymphocytes, the source of cells will be peripheral blood and the cell types will be CD4+ and CD8+ lymphocytes. Also, in the case of a tumor vaccine, the sources will be tumor and peripheral blood and the cell type will be dendritic cells/tumor cell hybridomas.

Question 28 & 29: Date of cell product collection

Report if the date of cell product collection is “known” or “unknown” for question 28. If the date of cell product collection is known, report the date (YYYY-MM-DD) in question 29. If the date of cell product collection is unknown, continue with question 30.

If the exact date is not known, General Instructions, General Guidelines for Completing Forms for more information regarding reporting partial or unknown dates.

Question 30 & 31: What is the tissue source of the cellular product? (check all that apply)

Select from the list the tissue source(s) of the cellular product. If the source is selected as ‘Other tissue source’, specify the other source in question 31 and continue with question 32.

Question 32 & 33: What is the cell type? (check all that apply)

Select from the list the cell type(s) of the cellular product. This should be the type of cell(s) in the product infused. If the cell type is selected as ‘Other cell type’, specify the other cell type in question 33 and continue with question 34.

Q34-39: Collection Procedure

This section applies to Autologous collections only

Question 34: Did the recipient have more than one mobilization event to acquire cells?

Stem cells do not typically circulate in the bloodstream. Therefore, in order to increase the quantity of cells for collection, an agent is frequently given to the autologous recipient. The purpose of the agent is to move the stem cells from the bone marrow into the peripheral blood. This practice is often referred to as mobilization or priming. Occasionally, a bone marrow product may be primed using a growth factor.

For the purposes of this manual, the CIBMTR defines a mobilization event as the planned administration of growth factors or systemic therapy designed to enhance stem cell collection. If the donor requires an additional mobilization at a later date to collect an additional product, this should be considered an additional mobilization event. If the mobilization methods change (e.g., plerixafor is required starting on Day 3 of collection) this would be considered an additional mobilization event.

Example 1: An autologous recipient was mobilized with G-CSF and underwent a two-day PBSC collection. Since the collection and mobilization methods remained the same over the duration of the collection, this is considered one mobilization event.

Example 2: An autologous recipient was mobilized with G-CSF and underwent a two-day PBSC collection, but the cell count was poor. GM-CSF was administered and the autologous recipient was re-collected. This is considered two mobilization events due to the change in mobilization drugs administered.

Example 3: An autologous recipient was mobilized with G-CSF and underwent a one-day PBSC collection, but the cell count was poor. The recipient then received plerixafor to enhance the mobilization. This is considered two mobilization events due to the change in mobilization drugs administered.

Question 35: Specify the total number of mobilization events performed for this cellular therapy: (regardless of the number of collections or which collections were used)

Report the total number of mobilization events performed for this cellular therapy. Include all mobilization events, even if a product from the mobilization event for this cellular therapy was not used during the infusion.

Question 36: Number of collection:

Report the number of collections that occurred after the mobilization event(s) reported in question 35. It is possible to have more than one collection per mobilization or a failed mobilization with no collection.

Example 1: (from above) An autologous recipient was mobilized with G-CSF and underwent a two-day PBSC collection. The mobilization methods remained the same but the number of collections reported will be two.

Example 2: (from above) An autologous recipient was mobilized with G-CSF and underwent a two-day PBSC collection, but the cell count was poor. GM-CSF was administered and the autologous recipient underwent another collection. This is considered two mobilization events, but three collections.

Question 37 & 38: Specify the method of product collection:

Specify how the product was collected:

Bone marrow aspirate: a small sample of liquid bone marrow is removed, usually from the hip bone, breastbone, or thigh bone.

Leukapheresis: removal of blood to collect specific blood cells

Byoptic sample: sample taken from a biopsy, typically a tumor biopsy.

Other method: not fitting in a category listed above.

If the method of product collection is selected as 'Other method', specify the other product collection method in question 38 and continue with question 39.

Question 39: Specify agent(s) used in the mobilization events: (check all that apply)

Report any of the following products that were used in the mobilization event(s) reported in questions 34-35.

G-CSF: granulocyte colony-stimulating factor, filgrastim, Neupogen®
GM-CSF: granulocyte macrophage colony-stimulating factor, sargramostim, Leukine®
Peglygated G-CSF: pegfilgrastim, Neulasta®
Plerixafor: Mozobil®
Other CXCR4 inhibitor: examples include POL6326 and AMD3465. Report experimental and other CXCR4 inhibitors used to mobilize the donor here.

Q40-72: Cell Product Manipulation

This section specifies any manipulation that was done to manufacture the final cellular therapy product.

Question 40: Were the cells in the infused product selected / modified / engineered prior to infusion?

Indicate “yes” if the cells contained in the product were selected (i.e. selective retention of a population of desired cells through recognition of specified characteristics), modified or genetically engineered and continue with question 41. Indicate “no” if the cells contained in the product were not selected, modified or genetically engineered in any way prior to infusion and continue with question 66.

Question 41: Specify the portion manipulated:

If the product being infused as a cellular therapy (e.g. DLI/DCI) is a portion from a prior HCT, the portion becomes the “entire” product for the purposes of this form. The product can then be further divided.

Indicate the portion of the product that was manipulated. If the entire product was manipulated, select “entire product” and continue with question 43.

If a portion of the product was removed and manipulated, select “portion of product” and continue with question 42.

Question 42: Was the unmanipulated portion of the product also infused?

Indicate “yes” if the unmanipulated portion of the product was also infused. Indicate “no” if the unmanipulated portion of the product was not infused.

Question 43: Was the same manipulation method used on the entire product / all portions of the product?

If the same manipulation was used on the entire product or all portions of the product, indicate “yes”. If different manipulation methods were used indicate “no”. All of the manipulations for each portion of the product should be reported in questions 44-72.

Question 44 & 45: Specify method(s) used to manipulate the product: (check all that apply)

Indicate the method(s) of manipulation.

Steps in Manipulation
If the manipulation consists of several steps, individual steps do not need to be reported as

separate manipulations. For example, T-cell depletion that is part of expansion does not need to be reported. However, if T-cell depletion and/or washing are done as standalone manipulations, they should be reported.

Cultured (ex-vivo expansion): cells were placed in culture to increase in number (i.e. to expand) allowing for sufficient cells for infusion. Continue with question 66.

Induced cell differentiation: cells were placed in culture to give rise to cellular elements with biological characteristics other than those of the cells being cultured (i.e. mesenchymal stromal cells cultured to make osteoblasts; pluripotent stem cells cultured to make neural cell precursors). Usually, the description of the process would include the term “differentiation of cells X into cells Y”. This scenario can be seen in regenerative medicine indications. Continue with question 66.

Cell selection – positive: to isolate the target cell population by using an antibody that specifically binds that population (e.g. CD3+ selection). Continue with question 66.

Cell selection – negative: the depletion of all cell types except the cell population of interest. Continue with question 66.

Cell selection based on affinity to a specific antigen: the cellular product undergoes selection to isolate the target population based on the ability of the target population to bind or recognize a specific antigen (e.g. a T cell population recognizing viral proteins or a protein associated with a cancer). Continue with question 66.

Genetic manipulation (gene transfer / transduction): cells are manipulated via gene transfer, a process by which copies of a gene are inserted into living cells in order to induce synthesis of the gene’s product; or transduction, a process by which foreign DNA is introduced into a cell by a virus or viral vector. These techniques deliberately alter the genetic material of an organism in order to make them capable of making new substances or performing new or different functions. Continue with question 46 to report the types of genetic manipulation.

Other cell manipulation: not fitting an above category. Specify manipulation in question 45.

Questions 46-65: Specify the type of genetic manipulation.
This section only applies if “genetic manipulation” was selected in question 44.

Question 46-54: Transfection:

Transfection is a process of deliberately introducing naked or purified nucleic acids by viral or non-viral methods into eukaryotic cells. Continue with question 47 if the product underwent transfection or continue with question 55 if it did not.

Viral transfection: Viral transfection occurs when there is gene transfer by infection of a cell with nucleic acid by a virus, followed by viral replication in the affected cell. If "yes", indicate the method of viral transfection in questions 48 and 49. Indicate "no" if the product did not undergo viral transfection and continue with question 50.

Lentivirus: Lentiviruses are members of the genus of retroviruses that have long incubation periods and cause chronic, progressive, usually fatal disease in humans and other animals. Indicate "no" if a Lentivirus was not used for the viral transfection.

Retrovirus: Retroviruses are any group of RNA viruses that insert a DNA copy of their genome into the host cell to replicate. HIV is an example of a Retrovirus. Indicate "no" if a Retrovirus was not used for the viral transfection.

Non-Viral transfection: Non-viral transfection is the process of deliberately introducing naked or purified nucleic acids into eukaryotic cells. If "yes", indicate the method of non-viral transfection in question 51-54. Indicate "no" if the product did not undergo non-viral transfection and continue with question 55.

Transposon: Transposons are discrete mobile sequences in the genome that can transport themselves directly from one part of the genome to another without the use of a vehicle such as phage or plasmid DNA. They are able to move by making DNA copies of their RNA transcripts which are then incorporated into the genome at a new site. Indicate "no" if Transposons were not used for the non-viral transfection.

Electroporation: Electroporation is a process of introducing DNA or chromosomes into cells using a pulse of electricity to briefly open the pores in the cell membranes. Indicate "no" if Electroporation was not used for the non-viral transfection.

Other non-viral transfection: Indicate "yes" if a different non-viral transfection method not previously listed was utilized. Specify the other non-viral transfection method in question 54.

Question 55 – 57: Gene editing:

Gene editing is a type of genetic engineering in which DNA is inserted or removed from a genome using artificially engineered nucleases. If "yes", specify which gene was edited in the manipulation in question 56.

If “other gene” is answered for question 56, specify the gene in question 57. Indicate “no” for question 55 if the cells did not undergo gene editing.

Question 58: Were cells engineered to express a non-native antigen receptor?

Indicate “yes” if the cells underwent a type of genetic engineering in which a gene is transferred which codes for an antigen receptor other than one that may already be naturally present in the cell (e.g. T-cells have natural T-cell receptors [TCRs]; a transgenic TCR or a Chimeric Antigen Receptor [CAR] are non-native antigen receptors). Indicate “no” if the cells did not undergo transfer of such a gene and continue with question 62.

Question 59: Specify the construct utilized:

Specify which construct was utilized as part of the genetic manipulation process:

T-cell receptor: Heterodimeric antigen receptors present on the surface of T-cells[1]

Chimeric Antigen Receptor (CAR): A cell-surface receptor that has been engineered to combine novel features and specificities from various sources in order to enhance its antigen specificity. Engineered T-cells or B-cells will produce the specialized receptor that will be capable of binding to an epitope on its target cell[1].

[1] NCIthesarus: https://ncit.nci.nih.gov/ncitbrowser/

Question 60 & 61: Specify details on the CAR construct: (check all that apply)

The CAR construct consist of several genes that can exert different functions, such as augment the immune response by co-stimulation, increase affinity, and increase the time it persists in the circulation without being cleared. The CAR construct information is usually unique and may influence its effect against the disease or the severity of side effects. Specify which construct(s) was used in the making of the Chimeric Antigen Receptor (CAR). If a construct was utilized that is not in the list, check “other construct” and specify in question 61.

For more information related to the different constructs and their functions, see this article: https://www.jci.org/articles/view/80010 .

Question 62 & 63: Suicide gene:

Indicate “yes” if the cells underwent manipulation to have cell suicide inducing transgenes inserted into the product and specify the suicide gene in question 63.

Question 64 & 65: Other genetic manipulation:

Indicate “yes” for other genetic manipulation for any genetic manipulation that does not fit into a category listed above and specify in question 65.

Question 66 & 67: Was the product manipulated to recognize a specific target/antigen?

Indicate “yes” if the cells were cultured or engineered so that the majority of cells in the end product are able to recognize or bind to a chosen target (e.g. proteins from a virus or a protein from a tumor) and specify the target in question 67. This manipulation can be done outside of the context of ‘genetic manipulation’. If “no”, continue with question 73.

If the target is viral, continue with question 68.
If the target is tumor/cancer antigen, continue with question 70
If the target is ‘other’, continue with question 72.

Question 68 & 69: Specify viral target(s): (check all that apply):

Select all viral target(s) that apply to the product. If the target is “other virus”, specify in question 69. Continue with question 73.

Question 70 & 71: Specify the target antigen:

Select all target antigen(s) that apply to the product. If the target is “other target antigen”, specify in question 71. Continue with question 73.

Question 72: Specify other target:

If the product was manipulated to recognize a specific target/antigen that does fit in a category above, specify the other target. Continue with question 73.

Q73-81: Cell Product Analysis

Question 73: Was transfection efficiency done?

Answered for genetically engineered cells only. Transfection efficiency is calculated as a percentage of transfected cells from all cells in the sample. There are a number of methods used to determine transfection efficiency including flow cytometry, fluorometry, microscopy, real-time quantitative PCR, etc.

Question 74: Date:

Specify the date (YYYY-MM-DD) when sample was taken for the transfection efficiency testing.

If the exact date is unknown, please view General Instructions, General Guidelines for Completing Forms for more information on reporting partial and unknown dates.

Question 75: Transfection efficiency:

Report the percent transfection efficiency. Round to the nearest whole number.

Question 76: Was transfection efficiency target achieved?

Transfection efficiency target will be defined by the protocol. Indicate “yes” or “no” if the target defined by the protocol was met.

Question 77: Was viability of cells done?

If the viability of the cells was quantified, select “done” and report the date the sample was collected to determine viability in question 78 and the percentage of viable cells in question 79. Methods of testing cell viability are listed in question 80.

Question 78: Date:

Specify the date (YYYY-MM-DD) when the sample was collected to determine viability.

If the exact date is unknown, please view General Instructions, General Guidelines for Completing Forms for more information on reporting partial and unknown dates.

Question 79: Viability of cells:

Report the percent viability. Round to the nearest whole number.

Question 80 & 81: Method of testing cell viability:

Indicate the method of testing viability.

7-AAD (7-aminoactinomycinD) and Propidiumiodide are compounds that can stain dead cells but will not cross the membrane of living cells. Cytometric techniques are used to calculate the percentage of viable cells in a sample.

Trypan Blue is a technique where the dead cells become stained when in contact with the compound, but living cells remain impermeable to the dye. Cells are counted under a microscope to determine the percentage of viable cells in a sample.

If both methods of viability testing are performed, report 7-AAD results. If the cell viability was tested using a different method, select “other method” and specify the method in question 81.

Q82-120: Product Infusion

Question 82: Date of this product infusion:

Report the date (YYYY-MM-DD) this product was infused. If the product was infused over multiple days, report the first date of infusion.

If the exact date is unknown, please view General Instructions, General Guidelines for Completing Forms for more information on reporting partial and unknown dates.

Question 83-85: Was the entire volume of product infused?

If the product being infused as a cellular therapy (e.g. DLI/DCI) is a portion from a prior HCT, the portion becomes the “entire” product for the purposes of this form. The intent is to capture if the product being infused was given in its entirety or not.

If the entire volume of the product was not infused, specify what happened to the reserved portion in question 84 and 85.

Question 86 & 87: Specify the route of product infusion:

Report the route by which the product was infused.

Intravenous refers to infusion into the veins – examples include infusion via central line or via catheter.
Intramedullary refers to infusion into the marrow cavity within a bone, such as directly into the proximal tibia or anterior aspect of the femur.
Intraperitoneal refers to infusion within the peritoneal cavity.
Intra-arterial refers to infusion within an artery or arteries.
Intramuscular refers to infusion within a muscle.
Intrathecal refers to infusion within the cerebrospinal fluid at any level of the cerebrospinal axis, including injection into the cerebral ventricles.
Intraorgan refers to an infusion within an organ such as the heart, liver, lungs, etc. Specify the site in question 88.
Locally in the tissue refers to an infusion in a restricted area of the body or in a tumor that cannot be classified as intraorgan.

If the route of infusion is not one of the above options, select “other route of infusion” and specify the infusion route in question 87.

Question 88 & 89: Specify the site of intraorgan administration of cells:

If the route of product infusion was intraorgan, specify the site of intraorgan administration. If the site of infusion is not in the option list, select “other site” and specify the site in question 89.

Question 90: Recipient weight used for this infusion:

Report the recipient’s actual body weight used to calculate the cell dose for this infusion. This weight is usually documented on the infusion orders or admitting orders. Report weight to the nearest whole kilogram or pound (round up if 0.5 or greater). Do not report adjusted body weight, lean body weight, or ideal body weight.

Question 91: Recipient height used for this infusion:

Report the recipient’s height at infusion. This height is usually documented on the admitting orders. Report height to the nearest whole centimeter or inch (round up if 0.5 or greater).

> **!** **Questions 92-120 Reporting total number of cells**
> Report the total number of cells (not cells per kilogram) contained in the product administered, not corrected for viability.

This section collects the total number of cells in a specific product that were infused. All the cells that were listed in question 32 are included here. Only respond to the cells that are applicable to *this* infusion.

Question 92 & 93: Total number of cells administered:

Report the total cell count contained in the product administered, not corrected for viability. If the type of cells are not specified or were unselected lymphocytes report the total number of cells present at time of the infusion.

Question 94 & 95: Lymphocytes (unselected) administered:

If yes, report the total number of lymphocytes administered in the product in question 95.

Question 96 & 97: CD4+ lymphocytes administered:

The lab report may display this value as CD3+CD4+. If yes, report the total number of CD4+ cells administered in the product in question 97.

Question 98 & 99: CD8+ lymphocytes administered:

The lab report may display this value as CD3+CD8+. If yes, report the total number of CD8+ cells administered in the product in question 99.

Question 100 & 101: Natural killer cells (NK cells) administered:

NK cells are a type of cytotoxic lymphocyte critical to the innate immune system. They usually express CD56 / CD16 on their cell surface. If yes, report the total number of natural killer cells (NK cells) administered in the product in question 101.

Question 102 & 103: Dendritic cells / tumor cell hybridomas administered:

Dendritic cells are antigen-presenting cells (also known as accessory cells) of the immune system. Their main function is to process antigen material and present it on the cell surface to the T-cells of the immune system. If yes, report the total number of dendritic cells or tumor cell hybridomas administered in the product in question 103.

Question 104 & 105: Mesenchymal stromal stem cells (MSCs) administered:

MSCs are multipotent stromal cells that can differentiate into a variety of cell types, including: osteoblasts (bone cells), chondrocytes (cartilage cells), myocytes (muscle cells) and adipocytes (fat cells). If yes, report the total number of MSCs administered in the product in question 105.

Question 106 & 107: Unspecified mononuclear cells administered:

A mononuclear cell is defined as any blood cell with a round nucleus (i.e., a lymphocyte, a monocyte, or a macrophage). These blood cells are a critical component in the immune system to fight infection and adapt to intruders. If yes, report the total number of unspecified mononuclear cells administered in the product in question 107.

Question 108 & 109: Endothelial progenitor cells administered:

EPC is a term that is applied to multiple different cell types that play roles in the regeneration of the endothelial lining of blood vessels. If yes, report the total number of endothelial progenitor cells (EPCs) in the product in question 109.

Question 110 & 111: Human umbilical cord perivascular (HUCPV) cells administered:

HUCPV cell is a term that is applied to mesenchymal, non-hematopoietic, non-endothelial cells that are isolated from the umbilical cord. If yes, report the total number of human umbilical cord perivascular (HUCPV) cells in the product in question 111.

Question 112 & 113: Cardiac progenitor cells administered:

Cardiac progenitor cells are tissue-specific stem progenitor cells within the heart. If yes, report the total number of cardiac progenitor cells administered in the product in question 113.

Question 114 & 115: Islet cells administered:

Islet cells are found in the pancreas. The pancreas contains clusters of cells that produce hormones and these clusters are known as islets. If yes, report the total number of islet cells administered in the product in question 115.

Question 116 & 117: Oligodendrocytes administered:

Oligodendrocytes are glial cells similar to an astrocyte but with fewer protuberances. These cells produce myelin in the central nervous system. If yes, report the total number of oligodendrocytes administered in the product in question 117.

Question 118 – 120: Other cell type administered:

If a different cell type not previously mentioned was infused, report the total number administered in the infusion in question 119. Specify the other cell type in question 120.

Q121-124: Concomitant Therapy

Question 121: Did the recipient receive concomitant therapy?

Concomitant therapy is therapy given to enhance the function of the cellular therapy. In cases where a recipient has both HCT and cell therapy, this question applies to the cell therapy infusion, not the HCT. If the recipient had a prior HCT and the therapy was already captured on the HCT form as being HCT prep regimen, it is not re-reported. See question 122 for a list of drugs that can be given as concomitant therapy.

Question 122 & 123: Specify drugs: (check all that apply)

Select the drug(s) given as concomitant therapy. If the drug given is not in the list, check “other” and specify the other drug in question 123.

Question 124: Specify time point:

This question applies to the therapy as a whole, not to each individual drug. Concomitant therapy can be given simultaneously with the cellular therapy infusion or up to 24 hours after infusion (post cell therapy).

Signature Lines:

The FormsNet3^{SM} application will automatically populate the signature data fields, including name and email address of person completing the form and date upon submission of the form.