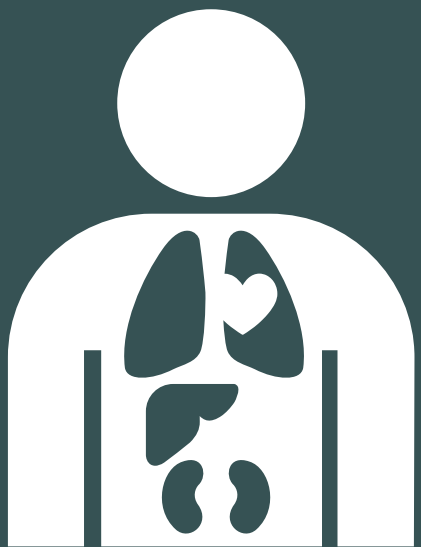

CORR

Canadian Organ Replacement Register
Instruction Manual, 2021

Transplant Recipient and Organ Donor Information

Canadian Institute for Health Information
Institut canadien d'information sur la santé

Production of this document is made possible by financial contributions from Health Canada and provincial and territorial governments. The views expressed herein do not necessarily represent the views of Health Canada or any provincial or territorial government.

Unless otherwise indicated, this product uses data provided by Canada's provinces and territories.

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ISBN 978-1-77479-004-5 (PDF)

How to cite this document:
Canadian Institute for Health Information. *Canadian Organ Replacement Register Instruction Manual, 2021: Transplant Recipient and Organ Donor Information*. Ottawa, ON: CIHI; 2021.

Cette publication est aussi disponible en français sous le titre *Registre canadien des insuffisances et des transplantations d'organes, manuel d'instructions 2021 : information sur les receveurs de greffes et les donneurs d'organes*.
ISBN 978-1-77479-005-2 (PDF)

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Acknowledgements

The process for revising the Canadian Organ Replacement Register (CORR) reporting forms for transplant and organ donation was initiated in the spring of 2000. Working groups were formed to review the donor profile form and each specific organ: kidney, heart, liver and lung/heart–lung. The work of these various groups was refined by a series of consultations with an extended group of people as well as testing of the forms, which was undertaken by transplant centres and organ procurement organizations in the late summer and early fall of 2000. The objective of the revision process was to ensure that the new data standards reflected the information needs of the transplant and organ donation communities.

The Canadian Institute for Health Information (CIHI) wishes to acknowledge the contribution of the following individuals, listed alphabetically, to the revision process:

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CIHI also acknowledges transplant centres and organ procurement organizations from across Canada for their ongoing support of CORR. It is the dedication of these centres to quality health information and outcome data that enables CORR to be a useful epidemiological and clinical resource.

1 Introduction

Purpose of this manual

This manual has 2 distinct purposes:

- To provide step-by-step instructions that will assist staff at hospitals providing vital organ transplants and organ procurement organizations to submit data to CORR on organ donors and transplant recipients; and
- To provide the definitions and specifications of the data elements used in CORR in order to facilitate an understanding of the database.

Similar information pertaining to chronic renal failure patients on renal replacement therapy is presented in a separate manual.

The definitions and descriptions of data elements in this manual are intended to assist in maintaining and enhancing data consistency and quality, whether data is submitted on paper forms, electronically or by computer printouts.

What is CORR?

The Canadian Organ Replacement Register (CORR) is a national information system that records and analyzes the level of activity and outcomes of vital organ transplantation and renal dialysis activities.

The objectives of CORR are to

- Provide a national view on end-stage organ failure statistics, for comparative analyses and research studies;
- Increase the availability of comparative material to facilitate better treatment decisions;
- Provide statistics on long-term trends that can be used for planning and optimizing programs;
- Provide a feedback mechanism to centres, a quality assurance function for treatment and a national standard for comparison; and
- Provide statistics to the health care industry to enhance business decisions.

CORR achieves its goals by

- Publishing reports annually on dialysis, organ donation and transplantation;
- Providing centre-specific reports to participating hospitals;
- Responding to ad hoc requests for data and information; and
- Continually updating technology and responding to changing user needs.

As the national database for dialysis and transplantation, CORR reports to its membership, the Canadian Society of Nephrology and the Canadian Society of Transplantation the results of dialysis and transplantation in Canada. CORR also provides valuable information to a large constituency of health care workers, including dialysis and transplant nurses, transplant coordinators, other members of the Canadian Association of Transplantation, organ procurement organizations, hospital administrators, government officials, The Kidney Foundation of Canada and the Canadian Cystic Fibrosis Foundation.

A brief history of CORR

CORR incorporates and maintains the Canadian Renal Failure Register, which was operated by Statistics Canada from 1981 to 1987. In 1987, the Hospital Medical Records Institute won a contract to operate an expanded register that would include information on all solid organ transplants. The register became known as the Canadian Organ Replacement Register and was incorporated in 1990 and overseen by a board of directors. In 1994, responsibility for the functions, assets and liabilities of the Hospital Medical Records Institute and the MIS Group were assumed by a new organization, the Canadian Institute for Health Information (CIHI). CIHI assumed responsibility for CORR in 1995. CIHI also assumed some functions and resources of Health Canada's Health Information Division, and selected activities of Statistics Canada were taken over according to an agreed-upon schedule.

Data sources for CORR

Dialysis	Transplant
Hospital dialysis centres (n = 104)	Hospitals (n = 28)
Satellite centres (n = 216)	Provincial organ procurement organizations (n = 9)
Independent health facilities (n = 8)	Regional organ procurement organizations (n = 2: Calgary, Edmonton)

Data on organ donors and transplant recipients

Patient-specific questionnaires are used to gather information on multi-organ transplantation and donors. These are Heart Recipient, Lung/Heart–Lung Recipient, Liver Recipient, Kidney Recipient and Pancreas Recipient registration forms and the Donor Profile form.

CORR data is patient oriented. That is, a patient's treatment is followed from the time of the patient's first transplant until the patient dies or is lost to follow-up. Information has been captured on all non-renal transplants in Canada and on renal transplants occurring since 1981. The capture of more detailed information on donors and recipients began in the early 1990s.

Patient information is collected from individual transplant centres or from provincial organ procurement organizations (OPOs) with centralized records. Data may be submitted annually or at more frequent intervals throughout the year. It is hoped that eventually all transplant and donor data will be transmitted to CORR using electronic data files from locally maintained databases or through web-based interfaces.

When a patient is first entered into the CORR computer, a patient identification number is assigned that will remain with the patient throughout his or her course of treatment. This means that a renal transplant record, for example, will be added to existing patient records if the patient received prior dialysis treatments.

Follow-up information is limited to date and cause of graft failure and date and cause of death for all transplants except liver. Follow-up information is processed annually or at more frequent intervals. It is captured in 1 of the following ways:

- Recipient Outcome forms
- Computer listings distributed by CORR for the purposes of verification
- Updated computer files obtained from the programs

Follow-up records are added and linked to existing records using the patient's identification number, which is located using patient name and date of birth. All follow-up treatments must adhere to strict edit checks. For example, a patient cannot have a second heart transplant while the first heart is still listed as functioning.

CORR staff works closely with hospitals and OPOs to ensure completeness and accuracy of data.

Key definitions

Before completing the forms, it is important that the following key definitions are understood:

Referral: *Consultation with/communication to a donor program about a deceased or dying patient who **may** be a potential organ donor. This patient will be assigned a unique identification number.*

Potential donor: *A referral who fulfills the general acceptance criteria for organ donation and for whom neurological death or cardiorespiratory death has been determined.*

Recoverable donor: *A potential donor for whom informed consent for organ procurement has been obtained. Organ recovery may occur, but no recovered organs are transplanted.*

Deceased donor: *A recoverable donor where at least 1 organ has been transplanted.*

Non–heart beating donor/donation after cardiac death: *A patient whose death is determined by cessation of cardiorespiratory function rather than irreversible loss of neurological function.*

New patient: *Any patient who initiated dialysis or had organ transplantation for the first time in the calendar year.*

Pediatric patient: *A patient who is younger than 18 during the year of study or at the time of initial treatment/transplant.*

Registered patient: *A patient who commenced treatment (dialysis or transplantation) for the first time in 1981 or thereafter. This patient has been registered in CORR and his or her progress is monitored each year.*

For more information

If you would like to receive more information or if you have comments regarding the format, content and usefulness of this instruction manual, please contact the staff of CORR at the CIHI office in Toronto. Your feedback is appreciated.

You may contact CORR at the following address:

Canadian Institute for Health Information
Canadian Organ Replacement Register
4110 Yonge Street, Suite 300
Toronto, Ontario M2P 2B7
Phone: 416-481-2002
Fax: 416-481-2950
Email: corr@cihi.ca

2 Deceased organ donor profile

Explanation of organ donor definition codes

For purposes of maintaining consistency and accuracy in data collection, it has been proposed that all Canadian donor programs use a common set of standard definitions for organ donation. There are 3 basic terms to be used — **referral**, **potential donor** and **deceased donor**. Their respective definitions are based on the chronology of events and a number of basic criteria (see the following text box). Although there may be inter-program differences in the interpretation of 1 or more of these terms, it is suggested that for the purpose of national consistency the definitions described here be adopted.

Referral: *Consultation with/communication to a donor program about a deceased or dying patient who may be a potential organ donor. This patient will be assigned a unique identification number.*

Potential donor: *A referral who fulfills the general acceptance criteria for organ donation, for whom neurological death has been determined and consent for organ procurement has been obtained. Organ recovery may occur, but no recovered organs are transplanted.*

Deceased donor: *A donor where at least 1 organ or tissue has been transplanted.*

Organs may also be recovered from consenting donors where cardiorespiratory-determined death has occurred.

Completing the Deceased Donor Profile form

1 Deceased Donor Profile form is to be completed for every referral. This includes all potential, recoverable and deceased donors.

Section A — Referral/Donor Information

Program Organizing Organ Recovery

- Enter the name of the organ procurement organization responsible for organizing the recovery of organs from this donor (i.e., where the donor originated).
- For out-of-country donors, the name of the country is sufficient (e.g., U.S.).
- The program name is converted to a numeric code by CORR staff.
- Acceptable values:

Codes — Program Organizing Organ Recovery

Code	City — Canada
10	St. John's, N.L.
09	Saint John, N.B.
01	Halifax, N.S.
07	Montréal, Que.
13	Québec, Que.
15	Kingston, Ont.
11	Ottawa, Ont.
16	Toronto, Ont.
02	Hamilton, Ont.
05	London, Ont.
06	Winnipeg, Man.
14	Saskatoon, Sask.
17	Regina, Sask.
03	Calgary, Alta.
04	Edmonton, Alta.
12	Vancouver, B.C.
99	Other — specify country

Recovery Program Donor Number

- Enter the local identification number used for this donor by the identifying organ recovery program. This number is used when linking recipient information to donor profile information and when requesting clarification of information from the local centre. (For example, if the organ used was from another province/territory, the original recovery program donor number **must** be used.)

Surname Stem

- Enter the first 3 letters of the donor's surname. In this way, confidentiality issues that may be encountered by using the full name are avoided.
- The surname stem allows the recipient record to be accurately linked with the correct donor profile record, especially in the case of out-of-province/-territory donors.

Province/Territory or State of Residence

- Enter the province/territory or state that was the usual province/territory or state of residence for the donor at the time of death.
- Acceptable values: see the Province/Territory or State of Death codes below.

Codes — Province/Territory or State of Death

Code	Province/territory — Canada
AB	Alberta
BC	British Columbia
MB	Manitoba
NB	New Brunswick
NL	Newfoundland and Labrador
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
ON	Ontario
PE	Prince Edward Island
QC	Quebec
SK	Saskatchewan
YT	Yukon

Code	State — United States
AL	Alabama
AK	Alaska
AS	American Samoa
AZ	Arizona
AR	Arkansas
CA	California
CO	Colorado
CT	Connecticut
DE	Delaware
DC	District of Columbia
FL	Florida
GA	Georgia
GU	Guam
HI	Hawaii
NE	Nebraska
NV	Nevada
NH	New Hampshire
NJ	New Jersey
NM	New Mexico
NY	New York
NC	North Carolina
ND	North Dakota
OH	Ohio
OK	Oklahoma
PA	Pennsylvania
PR	Puerto Rico
RI	Rhode Island
SC	South Carolina
ID	Idaho
IL	Illinois
IN	Indiana
IA	Iowa
KS	Kansas
KY	Kentucky
LA	Louisiana
ME	Maine
MD	Maryland
MA	Massachusetts

Code	State — United States
MI	Michigan
MN	Minnesota
MS	Mississippi
MO	Missouri
MT	Montana
SD	South Dakota
TN	Tennessee
TX	Texas
UT	Utah
VT	Vermont
VI	Virgin Islands
VA	Virginia
WA	Washington
WV	West Virginia
WI	Wisconsin
WY	Wyoming
US	State not known
ZZ	Unknown

Country of Residence

- Enter the country that was the usual country of residence for the donor at the time of death.
- Acceptable values: see the Country of Death codes below.

Codes — Country of Death

Code	Country
AUS	Australia
AUT	Austria
BEL	Belgium
CAN	Canada
CZE	Czechoslovakia
DNK	Denmark
DEU	Germany
GBR	United Kingdom
FRA	France
ISR	Israel
ITA	Italy
JPN	Japan
MEX	Mexico
ESP	Spain
SWE	Sweden
USA	United States

Referral Accepted

- Indicate whether the referral was accepted.
- Acceptable values:

  N = No

  Y = Yes

Reason Donor Organs Not Recovered

- Indicate the reason the patient did not become a donor.
- Acceptable values:

Codes — Reasons Donor Organs Not Used

Code	Description
03	Team/hospital logistics (team, hospital, transplantation resource issues)
04	Medical reasons (instability, infection, etc.)
07	Consent not requested
08	Neurological death not determined
09	Refusal by medical examiner
10	Consent requested and denied
98	Unknown/not available
99	Other reason — specify

Family Consent Obtained

- Indicate whether consent was obtained.
- Acceptable values:

  N = No

  Y = Yes

Neurologically Determined Death

- Indicate whether neurological death was determined. Neurologically determined death is defined as “the irreversible loss of the capacity for consciousness combined with the irreversible loss of all brainstem functions, including the capacity to breathe” (Canadian Council for Donation and Transplantation, 2003).
- Acceptable values:

  N = No

  Y = Yes

Non–Heart Beating Donor/Donor After Cardiocirculatory Death

- Indicate whether the donor is a non–heart beating donor according to the existing protocol.
- Non–heart beating donor refers to the donation of organs for transplantation from an individual who is declared dead after cardiac arrest; also known as “donation after cardiocirculatory death” (DCD).
- There are 2 types of DCD:
  - Controlled DCD refers to circumstances where donation may be considered when death is anticipated but has not yet occurred and may take place in an intensive care unit (ICU) following a consensual decision to withdraw life-sustaining therapy.
  - Uncontrolled DCD may occur when donation is considered after death has occurred but was not anticipated and may occur in the emergency department, hospital ward, ICU, special care unit or pre-hospital location. The deceased will have had a witnessed cardiocirculatory arrest of known duration and there should already be an established decision to terminate or not initiate cardiopulmonary resuscitation.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Age of Donor

- Enter the donor’s age.
- Acceptable range:

  Age in **years** for patients 2 years or older (002 to 130)

  Age in **months** for patients younger than 24 months (001 to 023)

  Age in **days** for patients younger than 31 days (001 to 030)

  Newborns = 000

Province/Territory or State of Death

- Enter the province/territory or state in which the donor died.
- If the donor died outside of Canada or the United States, enter the country (e.g., Mexico). See the data element Country of Death below.
- Acceptable values: see the Province/Territory or State of Death codes above.

Country of Death

- Enter the country of death.
- Acceptable values: see the Country of Death codes above.

Donor Sex

- Enter the donor's biological sex. Only 1 response can be checked.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Donor Blood Type

- Enter the donor's blood type.
- Acceptable values:

  A

  B

  AB

  O

  U (unknown/missing response)

Donor's Ethnic Origin/Race

- Enter the code for the donor's ethnic origin/race.
- Only 1 response can be checked.
- If *other/multiracial*, record the race(s).
- Acceptable values:

Codes — Ethnic Origin/Race

Code	Description	Examples
01	Caucasian (white)	E.g., French Canadians and other people of European, Australian or Russian ancestry
02	Asian	E.g., Chinese, Japanese, Vietnamese, Korean, Taiwanese
03	Black	E.g., African, Jamaican, Haitian, Somali
05	Indian subcontinent	E.g., Indian, Pakistani, Bangladeshi
08	Pacific Islander	E.g., Filipino

Code	Description	Examples
09	Aboriginal	E.g., North American Indian, Métis, Inuit
10	Middle Eastern/Arabian	E.g., Saudi Arabian, Iranian, Iraqi, Jordanian, Syrian, Armenian, Algerian
11	Latin American	E.g., Caribbean, South American, Cuban
98	Unknown	n/a
99	Other/multiracial	n/a

Note
n/a: Not applicable.

Donor Height

- Enter the donor's height in centimetres at the time of death.
- Acceptable values: cm (conversion factor: 1 inch = 2.54 cm or 0.39 inches = 1 cm)

Donor Weight

- Enter the donor's weight in kilograms at the time of death.
- Acceptable values: kg (conversion factor: 1 lb = 0.45 kg or 2.21 lbs = 1 kg)

Cause of Donor Death

- Enter the code that represents the donor's cause of death.
- If the cause of death is code 03 (Trauma), 05 (Overdose), 10 (Intracranial event) or 99 (Other), provide further details if available (i.e., what kind of trauma, which drug, what type of intracranial event [CVA, etc.]).
- Acceptable values:

Codes — Cause of Death

Code	Description
01	Anoxia/hypoxia
02	CVA (stroke)
03	Trauma (not MVC) — describe
04	Motor vehicle collision
05	Overdose — describe
06	Primary CNS tumour
07	Ruptured cerebral aneurysm
08	Spontaneous intracranial hemorrhage
09	Gunshot
10	Intracranial event — describe

Code	Description
11	CNS infection
12	Carbon monoxide poisoning
13	Cerebral edema
14	Asthma, unspecified
15	Sudden infant death syndrome (SIDS)
98	Unknown
99	Other — describe

Section B — Hospital Information

Identifying Hospital

- Enter the full name and location of the hospital where the donor was identified/determined to be dead from neurological or cardiorespiratory causes.
- This information is converted to a 5-digit code by CORR staff.

Date of Admission

- Enter the date the patient was admitted to the original admitting hospital for acute treatment prior to being identified as a donor.
- Format: DD-MON-YYYY (e.g., 16-Jan-2020)

Date of Determination of Neurological Death/Cardiorespiratory Death

- Enter the date neurological/cardiorespiratory death was determined.
- Format: DD-MON-YYYY (e.g., 23-Jan-2020)

Time of Determination of Neurological Death/Cardiorespiratory Death

- Enter the time neurological/cardiorespiratory death was determined.
- Format: HH:MM (e.g., 08:14)

Recovery Hospital

- Enter the name and location of the hospital where the organs were recovered.
- This information is converted to a 5-digit code by CORR staff.

Date of Cross Clamp

- Enter the date the organs were recovered and flushed with a specially prepared, ice-cold solution. The cross-clamp date is the same as the date of organ recovery within CORR.
- Format: DD-MON-YYYY (e.g., 26-Jan-2020)

Cross-Clamp Time

- Enter the time at which the organ was recovered and flushed with a specially prepared, ice-cold solution.
- Format: HH:MM (e.g., 10:44)

Section C — Donor Serology and Risk Factors (for All Deceased Donors)

Donor Serology Status

Hepatitis BsAg

- Indicate whether the donor had the hepatitis B antigen (hepatitis BsAg) at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis BcAb

- Indicate whether the donor tested positive for the hepatitis B antibody at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis C

- Indicate whether the donor had the hepatitis C antibody present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Epstein–Barr

- Indicate whether the patient had the Epstein–Barr virus antibody present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

HIV

- Indicate whether the donor had the HIV antigen present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

CMV

- Indicate whether the patient had the cytomegalovirus antibody present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Human T-Cell Lymphotropic Virus (HTLV) Type I, II

- Indicate whether the patient had the HTLV antibody present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Donor HLA

HLA: human lymphocyte antigen, used in determining compatibility between donors and recipients for some transplants. Please record information for the following markers:

Donor HLA A

- Enter the donor's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA A

Code	Description
0001	A1
0002	A2
0203	A203
0210	A210
0003	A3
0009	A9
0010	A10
0011	A11
0019	A19
0023	A23(9)
0024	A24(9)
2403	A2403
0025	A25(10)
0026	A26(10)
0028	A28
0029	A29(19)

Code	Description
0030	A30(19)
0031	A31(19)
0032	A32(19)
0033	A33(19)
0034	A34(10)
0036	A36
0043	A43
0066	A66(10)
0068	A68(28)
0069	A69(28)
0074	A74(19)
0080	A80
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Donor HLA B

- Enter the donor's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA B

Code	Description
0005	B5
0007	B7
0703	B703
0008	B8
0012	B12
0013	B13
0014	B14
0015	B15
0016	B16
0017	B17
0018	B18

Code	Description
0021	B21
0022	B22
0027	B27
2708	B2708
0035	B35
0037	B37
0038	B38(16)
0039	B39(16)
3901	B3901
3902	B3902
0040	B40
4005	B4005
0041	B41
0042	B42
0044	B44(12)
0045	B45(12)
0046	B46
0047	B47
0048	B48
0049	B49(21)
0050	B50(21)
0051	B51(5)
5102	B5102
5103	B5103
0052	B52(5)
0053	B53
0054	B54(22)
0077	B77(15)
0078	B78
0081	B81
0004	BW4
0006	BW6
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Donor HLA C

- Enter the donor's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA C

Code	Description
0001	CW1
0002	CW2
0003	CW3
0004	CW4
0005	CW5
0006	CW6
0007	CW7
0008	CW8
0303/0009	CW9(3)
0302/0010	CW10(3)
0304/0010	CW10(3)
0012	CW12
0014	CW14
0015	CW15
0016	CW16
0017	CW17
0018	CW18

Donor HLA DR

- Enter the donor's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)

- Acceptable values:

Codes — HLA DR

Code	Description
0001	DR1
0103	DR103
0002	DR2
0003	DR3
0004	DR4
0005	DR5
0006	DR6
0007	DR7
0008	DR8
0009	DR9
0010	DR10
0011	DR11(5)
0012	DR12(5)
0013	DR13(6)
0014	DR14(6)
1403	DR1403
1404	DR1404
0015	DR15(2)
0016	DR16(2)
0017	DR17(3)
0018	DR18(3)
0051	DR51
0052	DR52
0053	DR53
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Donor HLA DQ

- Enter the donor's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DQ

Code	Description
0001	DQ1
0002	DQ2
0003	DQ3
0004	DQ4
0005	DQ5
0006	DQ6
0007	DQ7
0008	DQ8
0009	DQ9
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Donor Risk Factors

Smoker

- Indicate whether the donor was a smoker at the time of donation (i.e., smoked cigarettes, cigars or a pipe in the last 3 months).
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Hypertension

- Indicate whether the donor was receiving medication such as calcium-blocking agents, vasodilators, beta blockers, diuretics or ACE inhibitors (e.g., captopril or enalapril) in order to control hypertension at the time of donation.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Coronary Artery Disease

- Indicate whether the donor was diagnosed with coronary artery disease at the time of donation. Coronary artery disease, also known as atherosclerosis, is the process by which the coronary arteries become narrowed or completely occluded. Ultimately, this is the underlying cause of heart attack.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Diabetes

- Indicate whether the donor was diagnosed with type 1 or type 2 diabetes at the time of donation.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Hyperlipidemia

- Indicate whether the donor had elevated concentrations of any or all lipids in plasma, such as cholesterol, triglycerides and lipoproteins.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Creatinine at Death Greater Than 1.5

- Indicate whether the donor had a creatinine value at death greater than 1.5 mg/dL.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Section D — Additional Organ Information (to Be Collected for All Donors)

Please complete the following:

Inotropes at Time of Recovery

- Enter which of the following inotropes was being administered to the donor at the time of recovery: digoxin, dobutamine, dopamine, amrinone, milrinone, epinephrine, norepinephrine, isoproterenol, phenylephrine or vasopressin.
- If other, please specify.
- Indicate whether the donor was receiving a high dose for each inotrope administered. Please refer to the following chart for definitions of high dose:

High dose — Definitions

Generic name	Trade name	High dose
Vasopressin	Pitressin	>5 units
Amrinone	Inocor	>10 mcg/kg/min
Milrinone	Primacor	>0.5 mcg/kg/min
Digoxin	Lanoxin	>10 mcg/kg
Dobutamine	Dobutrex	>10 mcg/kg/min
Dopamine	Intropin	>10 mcg/kg/min
Epinephrine	Adrenaline	>10 mcg/min
Norepinephrine	Levophed	>10 mcg/min
Isoproterenol	Isuprel	>10 mcg/min
Phenylephrine	Neo-Synephrine	>100 mcg/min

Echo Assessment Results

- Indicate whether an echocardiography was done on the donor and, if done, whether function was normal or abnormal.
- Acceptable values:

  0 = Not done

  1 = Done, normal function

  2 = Done, abnormal function

  9 = Unknown

ECG Result

- Indicate whether an electrocardiogram (ECG) was done on the donor and, if done, whether function was normal or abnormal.
- Acceptable values:

  0 = Not done

  1 = Done, normal function

  2 = Done, abnormal function

  9 = Unknown

Coronary Angiogram Results

- Indicate whether a coronary angiogram was done on the donor and, if done, whether function was normal or abnormal.
- Acceptable values:

  0 = Not done

  1 = Done, normal function

  2 = Done, abnormal function

  9 = Unknown

Section E — Organ-Specific Information

This section captures information on the reasons organs were not recovered and/or transplanted and information that will help link organ recipients to the correct donor profile record. Information must be coded for each of the organs listed below:

- Double kidney/en bloc, right kidney, left kidney
- Heart
- Liver (whole organ), liver right lobe, liver left lobe, liver lateral segment
- Pancreas — whole, pancreas — segment, pancreas — islet cells
- Heart–lung
- Bilateral lungs/en bloc, right lung, left lung
- Intestine
- Cluster (liver, small intestine, pancreas, stomach)
- Other multivisceral/bowel combination — specify organs: _____

Organ(s) Recovered

- Indicate whether an organ(s) was recovered. If no, indicate the reason an organ was not recovered. If an organ(s) was not recovered, sections A and B should be completed.
- Acceptable values:

  N = No

  Y = Yes

Organ Specific — Recovered

- For each organ listed, indicate whether or not the organ was recovered from the donor.
- Acceptable values:

  N = No

  Y = Yes

Organ Specific — Transplanted

- For each organ listed, indicate whether or not the organ was transplanted.
- Acceptable values:

  N = No

  Y = Yes

Reason Not Recovered/Transplanted

- Enter the code representing the reason each organ was not recovered and/or transplanted.
- Acceptable values:

Codes — Reason Not Recovered/Transplanted

Code	Reason
01	No consent for a particular organ
02	No recipient (no suitably matched recipient)
03	Team/hospital logistics (team, hospital, transplantation resource issues)
04	Medical reasons (stability, infection, etc.)
05	Recovered injury
06	No program
07	Used for research
08	Used for heart valves
09	Stored/preserved
10	Recipient not looked for
11	Organs exported to the U.S.
98	Unknown/not available
99	Other reason — specify

Organ Sent To

- Enter the name and location of the hospital to which the organ was sent.
- This information is used to accurately link organ recipients to the donor.

Recipient Name

- Enter the name of the organ recipient, if known.
- This information is used to accurately link organ recipients to the donor.

3 Heart Transplant Recipient Registration Form

Section A — Recipient Information

Transplant Hospital Name

- Enter the hospital name where the transplant occurred.
- This information is converted to a 5-digit code by CIHI. If you know the CIHI code for your hospital, you may enter this on the form instead of the hospital name.

Patient ID

- Enter facility patient code (patient ID).

Patient Last Name

- Enter the surname or family/last name used by the patient. Do not record titles. A single hyphen (e.g., Smith-Watson), apostrophe (e.g., O'Hara) or blank (e.g., Van Dusen) is acceptable.

Patient First and Middle Names

- Enter the first name or given name as well as the middle name, if applicable, used by the patient.
- If the patient is often referred to by a nickname, please indicate this in brackets (e.g , William (Bill) Smith).

Patient Former Name

- Enter the maiden (unmarried) name or former surname for any patient who has undergone a name change. (For example, Elizabeth Smith was formerly Elizabeth Jones, so "Jones" would be recorded.)

Sex

- Enter the patient's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Blood Type

- Enter the patient's blood type.
- Acceptable values:

  A

  B

  O

  AB

  U (unknown/missing response)

Patient Ethnic Origin/Race

- Enter the code representing the patient's ethnic origin/race.
- Only 1 response can be checked.
- If *other/multiracial*, record the race(s).
- Acceptable values:

Codes — Ethnic Origin/Race

Code	Description	Examples
01	Caucasian (white)	E.g., French Canadians and other people of European, Australian or Russian ancestry
02	Asian	E.g., Chinese, Japanese, Vietnamese, Korean, Taiwanese
03	Black	E.g., African, Jamaican, Haitian, Somali
05	Indian subcontinent	E.g., Indian, Pakistani, Bangladeshi
08	Pacific Islander	E.g., Filipino
09	Aboriginal	E.g., North American Indian, Métis, Inuit
10	Middle Eastern/Arabian	E.g., Saudi Arabian, Iranian, Iraqi, Jordanian, Syrian, Armenian, Algerian
11	Latin American	E.g., Caribbean, South American, Cuban
98	Unknown	n/a
99	Other/multiracial — specify	n/a

Note
n/a: Not applicable.

Date of Birth

- Enter the patient's date of birth.
- Format: DD-MON-YYYY (e.g., 08-Apr-1958)
- This field is mandatory for proper patient identification.
- The majority of analyses are carried out according to patient age.

Health Card Number

- Enter the health insurance plan number as indicated on the patient's health card. Please omit hyphens, blanks and version numbers, if applicable (e.g., 123123123).
- The health card number aids in identifying the patient and in avoiding duplicate patient records.
- For Manitoba residents, please use the personal health information number (PHIN).

Province/Territory of Health Card

- Enter the province/territory that is associated with the health card number provided.
- Acceptable values:

Codes — Province/Territory of Health Card

Code	Province/territory — Canada
AB	Alberta
BC	British Columbia
MB	Manitoba
NB	New Brunswick
NL	Newfoundland and Labrador
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
ON	Ontario
PE	Prince Edward Island
QC	Quebec
SK	Saskatchewan
YT	Yukon

Patient Address (City)

- Enter the town or city that is the usual place of residence for the patient at the time of transplant.
- This city is used for incidence mapping.

Patient Address (Province/Territory)

- Enter the province/territory that is the usual province/territory of residence at the time of transplant.
- This information is used for incidence mapping.
- Acceptable values: see Province/Territory of Health Card codes above.

Patient Postal Code

- Enter the postal code for the patient's address at the time of transplant.
- Format: M3C2T9
- This information is used for incidence mapping.

Recipient Height

- Enter the patient's height in centimetres at the time of transplant.
- Acceptable values: cm (conversion factor: 1 inch = 2.54 cm or 0.39 inches = 1 cm)

Recipient Weight

- Enter the patient's weight in kilograms at the time of transplant.
- Acceptable values: kg (conversion factor: 1 lb = 0.45 kg or 2.21 lbs = 1 kg)

Section B — Transplant Information

Waiting List Information

Date Patient First Placed on Waiting List

- Enter the date the patient was first placed on a waiting list for this transplant.
- Format: DD-MON-YYYY (e.g., 12-Jan-2020)

Medical Status at Waiting List

- Enter the code for the patient's medical status at the time he or she was first placed on the waiting list.
- Acceptable values:

Codes — Medical Status criteria: Adult cardiac transplantation

Code	Description
06	Status 4 • Mechanically ventilated patient on high-dose single or multiple inotropes with or without mechanical support (e.g., intra-aortic balloon pump, extra-corporeal membrane oxygenation [ECMO], Abiomed Biventricular Support System (BVS) 5000, Bio-Medicus), excluding long-term ventricular assist devices (VADs) • Patient with VAD malfunction or complication, such as thromboembolism, systemic device-related infection, mechanical failure or life-threatening arrhythmia • Patient should be recertified every 7 days as Status 4 by a qualified physician, if still medically appropriate
22	Status 4S • High panel-reactive antibody (greater than 80%)
21	Status 3.5 • High-dose or multiple inotropes in hospital and patient not candidate for VAD or no VAD available • Acute refractory ventricular arrhythmia
20	Status 3 • VAD not meeting Status 4 criteria • Patient on inotropes in hospital, not meeting above criteria • Heart–lung recipient candidate • Cyanotic congenital heart disease with resting saturation less than 65% • Congenital heart disease — arterial shunt–dependent • Adult-sized complex congenital heart disease with increasing dysrhythmic or systemic ventricular decline
04	Status 2 • In-hospital patient or patient on outpatient inotropic therapy not meeting the above criteria • Adult with cyanotic congenital heart disease: resting oxygen saturation 65% to 75% or prolonged desaturation to less than 60% with modest activity (i.e., walking) • Adult with Fontan palliation with protein-losing enteropathy • Patient listed for multiple organ transplantation (other than heart–lung)
08	Status 1 • All other out-of-hospital patients
98	Unknown

Codes — Medical Status criteria: Pediatric cardiac transplantation

Code	Description
06	Status 4 • VAD in a patient weighing less than 8 kg • Mechanically ventilated on high-dose single or multiple inotropes with mechanical support (e.g., intra-aortic balloon pump, ECMO, Abiomed BVS 5000, Bio-Medicus), excluding VADs • VAD malfunction or complication such as thromboembolism, systemic device-related infection, mechanical failure or life-threatening arrhythmia • Patient should be recertified every 7 days as Status 4 by a qualified physician, if still medically appropriate
22	Status 4S • High panel-reactive antibody (greater than 80%)
21	Status 3.5 • Hospitalized patient with a VAD • Patient younger than 6 months with congenital heart disease — prostaglandin-dependent • High-dose or multiple inotropes in hospital and patient not candidate for VAD therapy or no VAD available • Acute refractory ventricular arrhythmia
20	Status 3 • VAD not meeting Status 4 criteria, including outpatient VAD • Patient younger than 6 months with congenital heart disease • Cyanotic congenital heart disease with resting saturation less than 65% • Congenital heart disease — arterial shunt–dependent (i.e., Norwood) • Patient on inotropes in hospital, not meeting above criteria • Inpatient with continuous positive airway pressure (CPAP) or bi-level positive airway pressure (BiPAP) support for heart failure management • Heart–lung recipient candidate
04	Status 2 • At home with intermittent CPAP/BIPAP support for heart failure management • In hospital for management of heart disease/heart failure not meeting the above criteria • Growth failure: Less than 5th percentile for weight and/or height **or** loss of 1.5 standard deviations of expected growth (weight or height) • Cyanotic congenital heart disease with resting saturation 65% to 75% **or** prolonged desaturation to less than 60% with modest activity (i.e., walking, feeding) • Fontan palliation with protein-losing enteropathy or plastic bronchitis • Multiple organ transplant recipient candidate
08	Status 1 • All other out-of-hospital patients
15	In utero (heart)
98	Unknown

Note
The medical status information comes from the Canadian Cardiac Transplant Network's *Cardiac Transplantation: Eligibility and Listing Criteria in Canada 2012*.

Moved to Final List Status

- If the final list status is not the same as the initial listing status, indicate the date that the patient was moved to the final list status.
- Format: DD-MON-YYYY (e.g., 12-Jan-2019)

Medical Status at Time of Transplant

- Enter the code for the patient's medical status at the time of transplant.
- Acceptable values:

Codes — Medical Status criteria: Adult cardiac transplantation

Code	Description
06	Status 4 • Mechanically ventilated patient on high-dose single or multiple inotropes ± mechanical support (e.g., intra-aortic balloon pump, extra-corporeal membrane oxygenation [ECMO], abiomed BVS5000, or biomedicus), excluding long-term ventricular assist devices (VAD) • Patient with VAD malfunction or complication, such as thromboembolism, systemic device-related infection, mechanical failure, or life-threatening arrhythmia • Patient should be recertified every 7 days as a Status 4 by a qualified physician, if still medically appropriate
22	Status 4S • High panel-reactive antibody (greater than 80%)
21	Status 3.5 • High-dose or multiple inotropes in hospital and patients not candidates for VAD therapy or no VAD available • Acute refractory ventricular arrhythmias
20	Status 3 • VAD not meeting Status 4 criteria • Patients on inotropes in hospital, not meeting above criteria • Heart–lung recipient candidates • Cyanotic congenital heart disease with resting saturation <65% • Congenital heart disease – arterial shunt–dependent • Adult-sized complex congenital heart disease with increasing dysrhythmic or systemic ventricular decline

Code	Description
04	Status 2 • In-hospital patient or patient on outpatient inotropic therapy not meeting the above criteria • Adult with cyanotic CHD: resting 02 saturation 65–75% or prolonged desaturation to less than 60% with modest activity (i.e., walking) • Adult with Fontan palliation with protein-losing enteropathy • Patients listed for multiple organ transplantation (other than heart–lung)
08	Status 1 • All other out-of-hospital patients
98	Unknown

Codes — Medical Status Criteria: Pediatric Cardiac Transplantation

Code	Description
06	Status 4 • VAD in a patient <8 kg • Mechanically ventilated on high-dose single or multiple inotropes + mechanical support (e.g., IABP, ECMO, abiomed BVS5000, or biomedicus), excluding VADs • VAD malfunction or complication such as thromboembolism, systemic device-related infection, mechanical failure, or life-threatening arrhythmia • Patients should be recertified every 7 days as a Status 4 by a qualified physician if still medically appropriate
22	Status 4S • High panel-reactive antibody (greater than 80%)
21	Status 3.5 • Hospitalized patient with a VAD • Less than 6 months of age with congenital heart disease — prostaglandin-dependent • High-dose or multiple inotropes in hospital and patients not candidates for VAD therapy or no VAD available • Acute refractory ventricular arrhythmias
20	Status 3 • VAD not meeting Status 4 criteria including outpatient VAD • Less than 6 months of age with congenital heart disease • Cyanotic congenital heart disease with resting saturation less than 65% • Congenital heart disease — arterial shunt–dependent (i.e., Norwood) • Patients on inotropes in hospital, not meeting above criteria • Inpatient with CPAP/BIPAP support for HF management • Heart–lung recipient candidates

Code	Description
04	Status 2 • At Home with intermittent CPAP/BIPAP support for HF management • In Hospital for management of heart disease/HF not meeting the above criteria • Growth failure: <5th percentile for weight and/or height OR loss of 1.5 SD of expected growth (weight or height) • Cyanotic congenital heart disease with resting saturation 65% to 75% OR prolonged desaturation to less than 60% with modest activity (i.e., walking, feeding) • Fontan palliation with protein-losing enteropathy or plastic bronchitis • Multiple organ transplant recipient candidates
08	Status 1 • All other out-of-hospital patients
98	Unknown

Note
The medical status information comes from the Canadian Cardiac Transplant Network's *Cardiac Transplantation: Eligibility and Listing Criteria in Canada 2012*.

Date of Transplant

- Enter the date the transplant occurred.
- Format: DD-MON-YYYY (e.g., 12-Jun-2020)

Graft Number

- Indicate the sequential transplant number for the patient (e.g., the patient has had 1, 2, 3, etc. heart transplant operations).
- Most actuarial survival analyses are based on the transplant number, e.g., graft survival of the first heart graft.

Heart Transplant Only Flag

- Check this box if the recipient is receiving only a heart and no other organ at this time. If the transplant is a combination transplant, please check the combination transplant box.

Combination Transplant Flag

- Indicate, by checking the combination transplant box, whether more than 1 organ was transplanted during this operation.

Specify Other Organ(s)

- Enter the other organ(s) transplanted during this combination transplant operation. Please note that Section B on the recipient registration forms for the other organs should also be completed as part of the patient's registration.

Primary Diagnosis

- Enter the code that represents the primary cause of organ failure.
- Multiple diagnoses can be recorded, but only 1 primary diagnosis must be identified.
- If there is no diagnosis code that represents the primary cause of organ failure, enter the code 99 and describe the condition.
- If this is a second or subsequent heart transplant, please record the diagnosis associated with this transplant.
- Acceptable values:

Codes — Heart — Primary Diagnosis

Code	Description
32	Cardiomyopathy
29	Dilated cardiomyopathy
01	Idiopathic cardiomyopathy
30	Other dilated cardiomyopathy
33	Metabolic/genetic cardiomyopathy
34	Cardiomyopathy related to muscular dystrophy
35	Drug-induced cardiomyopathy (chemotherapy)
12	Restrictive cardiomyopathy
31	Hypertrophic cardiomyopathy
24	Myocarditis
07	Coronary artery disease (ischemic cardiomyopathy)
04	Valvular heart disease
23	Acute myocardial infarction
15	Congenital heart disease
16	Congenital heart disease — acyanotic lesions
17	Congenital heart disease — cyanotic lesions
36	Metabolic disorder
37	Cardiac tumour
38	Refractive arrhythmia
39	Muscular dystrophy
98	Unknown
99	Other — specify

Re-Transplant Flag

- Check this box if this is a re-transplant.

Recipient Serology Status at Time of Transplant

Hepatitis BsAg

- Indicate whether the patient had the hepatitis B antigen present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis BcAb

- Indicate whether the patient tested positive for the hepatitis B antibody at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis C

- Indicate whether the patient had the hepatitis C antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Epstein–Barr

- Indicate whether the patient had the Epstein–Barr virus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

HIV

- Indicate whether the patient had the HIV antigen present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

CMV

- Indicate whether the patient had the cytomegalovirus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Current Class I Panel Reactive Antibody (PRA) Level

- Enter the current percentage PRA at the time of transplant.
- Acceptable range: 0% to 100%

Peak Class I PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Current Class II PRA Level

- Enter the current percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Peak Class II PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Methods Used to Identify PRA Level

- The most sensitive method should be entered if more than 1 method is used by the laboratory.
- Acceptable values:

  CDC

  ELISA

  Flow

  Luminex

  Other

Pulmonary Vascular Resistance (PVR) Reactivity

- Indicate whether the patient had reactive pulmonary vasculature.
- Acceptable values:

  0 = Non-reactive

  1 = Reactive

PVR

- Indicate the patient's pulmonary resistance at the time of transplant.
- Measured in Wood units.
- Acceptable values:

  1 = Fewer than 4 Wood units

  2 = 4 to 6 Wood units

  3 = More than 6 Wood units

  8 = Not done

  9 = Unknown/missing response

Standard Crossmatch Test Result

- Indicate whether the standard crossmatch test on T-lymphocytes or peripheral blood lymphocytes (PBL) was positive or negative at 22°C or 37°C.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Recipient HLA

HLA: human lymphocyte antigen (antigenic markers used in determining compatibility between donors and recipients for some transplants). Please record information for the following markers:

Recipient HLA A

- Enter the patient's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA A

Code	Description
0001	A1
0002	A2
0203	A203
0210	A210
0003	A3
0009	A9
0010	A10
0011	A11
0019	A19
0023	A23(9)
0024	A24(9)
2403	A2403
0025	A25(10)
0026	A26(10)
0028	A28
0029	A29(19)
0030	A30(19)
0031	A31(19)
0032	A32(19)
0033	A33(19)
0034	A34(10)
0036	A36
0043	A43

Code	Description
0066	A66(10)
0068	A68(28)
0069	A69(28)
0074	A74(19)
0080	A80
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA B

- Enter the patient's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA B

Code	Description
0005	B5
0007	B7
0703	B703
0008	B8
0012	B12
0013	B13
0014	B14
0015	B15
0016	B16
0017	B17
0018	B18
0021	B21
0022	B22
0027	B27
2708	B2708
0035	B35
0037	B37
0038	B38(16)

Code	Description
0039	B39(16)
3901	B3901
3902	B3902
0040	B40
4005	B4005
0041	B41
0042	B42
0044	B44(12)
0045	B45(12)
0046	B46
0047	B47
0048	B48
0049	B49(21)
0050	B50(21)
0051	B51(5)
5102	B5102
5103	B5103
0052	B52(5)
0053	B53
0054	B54(22)
0055	B55(22)
0056	B56(22)
0057	B57(17)
0058	B58(17)
0059	B59
0060	B60(40)
0061	B61(40)
0062	B62(15)
0063	B63(15)
0064	B64(14)
0065	B65(14)
0067	B67
0070	B70
0071	B71(70)
0072	B72(70)
0073	B73
0075	B75(15)
0076	B76(15)

Code	Description
0077	B77(15)
0078	B78
0081	B81
0004	BW4
0006	BW6
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA C

- Enter the patient's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA C

Code	Description
0001	CW1
0002	CW2
0003	CW3
0004	CW4
0005	CW5
0006	CW6
0007	CW7
0008	CW8
0303/0009	CW9(3)
0302/0010	CW10(3)
0304/0010	CW10(3)
0012	CW12
0014	CW14
0015	CW15
0016	CW16
0017	CW17
0018	CW18

Recipient HLA DR

- Enter the patient's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DR

Code	Description
0001	DR1
0103	DR103
0002	DR2
0003	DR3
0004	DR4
0005	DR5
0006	DR6
0007	DR7
0008	DR8
0009	DR9
0010	DR10
0011	DR11(5)
0012	DR12(5)
0013	DR13(6)
0014	DR14(6)
1403	DR1403
1404	DR1404
0015	DR15(2)
0016	DR16(2)
0017	DR17(3)
0018	DR18(3)
0051	DR51
0052	DR52
0053	DR53
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA DQ

- Enter the patient's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DQ

Code	Description
0001	DQ1
0002	DQ2
0003	DQ3
0004	DQ4
0005	DQ5
0006	DQ6
0007	DQ7
0008	DQ8
0009	DQ9
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Heterotopic Transplant Flag

- Indicate, by checking the box, whether this is a heterotopic heart transplant (i.e., the native heart is left in place and the transplanted heart is added to the circuit).

Risk Factors

Renal Dysfunction

- Indicate whether the patient had renal dysfunction at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Liver Dysfunction

- Indicate whether the patient had liver dysfunction at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Diabetes Type 1

- Indicate whether the patient was diagnosed with type 1 diabetes at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Type 1 diabetes: *Occurs when the pancreas no longer produces, or produces very little, insulin. Usually develops in childhood or adolescence and affects about 10% of people with diabetes (Canadian Diabetes Association).*

Diabetes Type 2

- Indicate whether the patient was diagnosed with type 2 diabetes at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Type 2 diabetes: *Occurs when the pancreas does not produce enough insulin to meet the body's needs or the insulin is not metabolized effectively. Usually occurs later in life and affects 90% of people with diabetes (Canadian Diabetes Association).*

Hypertension

- Indicate whether the patient was receiving medication such as calcium-blocking agents, vasodilators, beta blockers, diuretics or ACE inhibitors (e.g., captopril or enalapril) in order to control hypertension at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Smoker

- Indicate whether the recipient was a smoker at the time of transplant (i.e., smoked cigarettes, cigars or a pipe in the last 3 months).
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Hypercholesterolemia

- Indicate whether the recipient had hypercholesterolemia (abnormally high concentrations of cholesterol) present in the bloodstream at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Inotropic Support

- Indicate whether the patient was receiving inotropes at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Previous Cardiac Surgery

- Indicate whether the patient had cardiac surgery prior to this transplant. This does not include a previous heart transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Prior Defibrillator

- Indicate whether the patient had an implanted defibrillator or pacemaker prior to this transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

On Anticoagulants

- Indicate whether the patient was receiving anticoagulant therapy at the time of transplant (e.g., Coumadin or heparin).
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Mechanical Ventilation

- Indicate whether the patient was mechanically ventilated (on a respirator) at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Type of Mechanical Circulatory Support Devices

If the patient was on a mechanical circulatory support device, indicate the device(s) used.

Intra-Aortic Balloon Flag

- Indicate whether the patient was on an intra-aortic balloon prior to transplant. This is a mechanical device placed to reduce the heart’s workload and to improve flow of blood to coronary arteries.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Extracorporeal Membrane Oxygenation (ECMO) Flag

- Indicate whether the patient was on ECMO prior to transplant. This is a form of artificial organ support for children suffering from temporary, reversible lung failure or heart failure. During the ECMO procedure, catheters are placed in large blood vessels and used to simultaneously drain blood from the body, oxygenate and warm it and then return it to the heart through another cannula.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Ventricular Assist Device (VAD) Flag

- Indicate whether the patient was on a VAD prior to transplant. This is a support method used for patients with single ventricle dysfunction without pulmonary dysfunction.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Total Artificial Heart Flag

- Indicate whether the patient was on full circulatory support (artificial heart) prior to transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Total Ischemic Time

- Record in minutes the duration of time the ascending aorta was totally cross-clamped. Do not include the duration of partial aortic cross-clamp used for sewing the proximal anastomoses. 0 is an acceptable answer for those performed off bypass.

Section C — Donor Information

Information on surname stem, donor type, age and sex is used to accurately link the recipient information to the donor profile information as provided by the organ procurement organization. Only these fields need to be completed on the transplant forms for locally transplanted donors, as the complete information is provided on the Deceased Donor Profile form. The Living Donor Profile form should also be completed for domino donors.

Donor Type

- Enter the code representing the type of donor for this transplant.
- Acceptable values:

Codes — Donor Type

Code	Description
01	Deceased donor
12	Domino donor

Program Organizing Organ Recovery

- Enter the name of the organ procurement organization responsible for organizing the recovery of organs from this donor (i.e., where the donor originated).
- For out-of-country donors, the name of the country is sufficient (e.g., U.S.).
- The program name is converted to a numeric code by CORR staff.

Recovery Program Donor Number

- Enter the local identification number used for this donor by the identifying organ recovery program. This number is used when linking recipient information to donor profile information and when requesting clarification of information from the local centre. (For example, if the organ used was from another province/territory, the original recovery program donor number **must** be used.)

Surname Stem

- Enter the first 3 letters of the donor’s surname. In this way, confidentiality issues that may be encountered by using the full name are avoided.
- The surname stem allows the recipient record to be accurately linked with the correct donor profile record, especially in the case of out-of-province/-territory donors.

Age of Donor

- Enter the donor's age.
- Acceptable range:

  Age in **years** for patients 2 years or older (002 to 130)

  Age in **months** for patients younger than 24 months (001 to 023)

  Age in **days** for patients younger than 31 days (001 to 030)

  Newborns = 000

Donor Sex

- Enter the donor's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Donor HLA

HLA: human lymphocyte antigen, used in determining compatibility between donors and recipients for some transplants. Please record information for the following markers:

Donor HLA A

- Enter the donor's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number.
  (This aids in computer edit checking.)
- Acceptable values: see HLA A codes as specified in the recipient section of this chapter.

Donor HLA B

- Enter the donor's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number.
  (This aids in computer edit checking.)
- Acceptable values: see HLA B codes as specified in the recipient section of this chapter.

Donor HLA C

- Enter the donor's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA C codes as specified in the recipient section of this chapter.

Donor HLA DR

- Enter the donor's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DR codes as specified in the recipient section of this chapter.

Donor HLA DQ

- Enter the donor's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DQ codes as specified in the recipient section of this chapter.

Date of Cross Clamp

- Enter the date the organs were recovered and flushed with a specially prepared, ice-cold solution. Please note that the cross-clamp date is the same as the date of organ recovery.
- Format: DD-MON-YYYY (e.g., 12-Jun-2020)

Cross-Clamp Time

- Enter the time at which the organ was recovered and flushed with a specially prepared, ice-cold solution.
- Format: HH:MM (e.g., 22:30)

Recipient Outcome

(Recipient Information: Same as Section A of the Heart Transplant Recipient Registration Form)

This section collects recipient follow-up information, which may be available when the transplant is registered.

Updates on patient status with respect to transplant failures and deaths, loss to follow-up and patient transfers will be collected annually or at intervals throughout the year.

Alternatively, the centre may provide computer printouts of all failures and deaths and the associated causes, as well as information on patient transfers and loss to follow-up, to the CORR office throughout the year. CORR data specifications must be used in this case.

Hospital Followed At

- Enter the name of the hospital where the patient is receiving transplant follow-up.
- This alerts CORR staff to send all future requests for information on the patient to the follow-up hospital and allows accurate tracking of the patient throughout the course of his or her treatment.

Patient Status

- Indicate whether the patient is alive, dead, transferred or lost to follow-up.
- Provide the date associated with the event indicated (alive as of what date, etc.).
- Format: DD-MON-YYYY (e.g., 14-Jun- 2020)

If Recipient Is Deceased

Died With a Functioning Graft

- Indicate whether the patient died with a functioning graft.

Died Due to Graft Failure

- Indicate whether the patient died due to graft failure.

Cause of Death

- Indicate whether the patient died and enter the code for the cause of death (e.g., code 31 for bacterial pneumonia).
- For heart transplant recipients, please enter 1 cause of death.
- Acceptable values:

Codes — Cause of Death

Code	Description
Generic	
00	Cause of death uncertain, not determined
Cardiac	
11	Myocardial ischemia and infarction
12	Hyperkalemia
13	Hemorrhagic pericarditis
14	Other causes of cardiac failure
15	Cardiac arrest, cause unknown
16	Hypertensive cardiac failure
17	Hypokalemia
18	Fluid overload
Vascular	
21	Pulmonary embolus
22	Cerebrovascular accident
24	Hemorrhage from graft site
25	Hemorrhage from vascular access or dialysis circuit
26	Ruptured vascular aneurysm (not codes 22 and 23)
27	Hemorrhage from surgery (not codes 23 to 26)
28	Other hemorrhage (not codes 23 to 27)
55	Vascular thrombosis
56	Pulmonary vein stenosis
57	Stent/balloon complication
Infection	
03	Infection (bacterial)
04	Infection (viral)
05	Infection (fungal)
06	Cytomegalovirus
07	Epstein–Barr virus
08	Pneumocystic carinii pneumonia (PCP)
09	Protozoal/parasitic infection (includes toxoplasmosis)

Code	Description
Infection (continued)	
10	Wound infection
34	Infections elsewhere (except viral hepatitis codes 41 and 42)
35	Septicemia/sepsis
36	Tuberculosis (lung)
37	Tuberculosis (elsewhere)
38	Generalized viral infection
39	Peritonitis (not code 70)
Liver disease	
41	Liver, due to hepatitis B virus
42	Liver, other viral hepatitis
43	Liver, drug toxicity
44	Cirrhosis, not viral
45	Cystic liver disease
46	Liver failure, cause unknown
74	Liver, due to hepatitis C virus
Gastrointestinal	
02	Gastrointestinal tumour with or without perforation
20	Acute gastroenteritis with dehydration
23	Gastrointestinal hemorrhage
29	Mesenteric infarction
62	Pancreatitis
68	Perforation of peptic ulcer
70	Sclerosing (or adhesive) peritoneal disease
72	Perforation of colon/small bowel
Social	
50	Drug abuse (excludes alcohol abuse)
51	Patient refused further treatment
52	Suicide
53	Therapy ceased for any other reason
54	Alcohol abuse
Accident	
81	Accident related to treatment
82	Accident unrelated to treatment
Miscellaneous	
30	Hypertension
40	Diabetic keto acidosis (DKA)
64	Cachexia

Code	Description
Miscellaneous (continued)	
66	Malignant disease possibly induced by immunosuppressive
67	Malignant disease except those of code 66
69	Dementia
90	Multi-system failure
99	Other identified causes of death — specify
Respiratory	
19	Acute respiratory distress syndrome (ARDS)
31	Pulmonary infection (bacterial)
32	Pulmonary infection (viral)
33	Pulmonary infection (fungal)
49	Bronchiolitis obliterans
Renal disease	
47	Acute renal failure
48	Chronic renal failure
61	Uremia caused by kidney transplant failure
Metabolic	
59	Drug-related toxicity
Hematologic	
63	Bone marrow depression
71	Thrombocytopenia
73	Thrombosis
Neurologic	
75	Drug neurotoxicity
76	Status epilepticus
77	Neurologic infection

Died Due to Graft Failure

- If the patient's death can be attributed to transplant failure (e.g., rejection), complete the Date and Cause of Graft Failure fields and enter the code for the cause of death.

Date of Graft Failure

- Enter the date the transplanted organ ceased to function adequately.
- Format: DD-MON-YYYY (e.g., 26-Jan-2020)
- The failure date must be equal to or greater than the transplant date and equal to or less than the re-transplant date.

Cause of Graft Failure

- Check the code representing the cause of graft failure (e.g., code 64 for chronic rejection).
- Acceptable values:

Codes — Cause of Graft Failure

Code	Description
00	Uncertain/unknown
01	Hyperacute rejection
63	Acute rejection
64	Chronic rejection
66	Rejection secondary to non-compliance
30	Rejection after stopping immunosuppressive drugs
67	Recurrent primary disease
68	Infection and rejection
69	Infection of graft
11	Primary non-function
23	Vascular thrombosis (graft)
28	Surgical complication
25	Pulmonary hypertension/cor pulmonale
19	Graft coronary artery disease
71	Electrolyte disturbance
72	Pericarditis
73	Pericardial effusion
70	Systemic hypertension
99	Other cause of graft failure — describe

4 Kidney Transplant Recipient Registration Form

Section A — Recipient Information

Transplant Hospital Name

- Enter the hospital name where the transplant occurred.
- This information is converted to a 5-digit code by CIHI. If you know the CIHI code for your hospital, you may enter this on the form instead of the hospital name.

Patient Last Name

- Enter the surname or family/last name used by the patient. Do not record titles. A single hyphen (e.g., Smith-Watson), apostrophe (e.g., O'Hara) or blank (e.g., Van Dusen) is acceptable.

Patient First and Middle Names

- Enter the first name or given name as well as the middle name, if applicable, used by the patient.
- If the patient is often referred to by a nickname, please indicate this in brackets (e.g., William (Bill) Smith).

Patient Former Name

- Enter the maiden (unmarried) name or former surname for any patient who has undergone a name change. (For example, Elizabeth Smith was formerly Elizabeth Jones, so "Jones" would be recorded.)

Sex

- Enter the patient's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Blood Type

- Enter the patient's blood type.
- Acceptable values:

  A

  B

  O

  AB

  U (unknown/missing response)

Patient Ethnic Origin/Race

- Enter the code representing the patient's ethnic origin/race.
- Only 1 response can be checked.
- If *other/multiracial*, record the race(s).
- Acceptable values:

Codes — Ethnic Origin/Race

Code	Description	Example
01	Caucasian (white)	E.g., French Canadians and other people of European, Australian or Russian ancestry
02	Asian	E.g., Chinese, Japanese, Vietnamese, Korean, Taiwanese
03	Black	E.g., African, Jamaican, Haitian, Somali
05	Indian subcontinent	E.g., Indian, Pakistani, Bangladeshi
08	Pacific Islander	E.g., Filipino
09	Aboriginal	E.g., North American Indian, Métis, Inuit
10	Middle Eastern/ Arabian	E.g., Saudi Arabian, Iranian, Iraqi, Jordanian, Syrian, Armenian, Algerian
11	Latin American	E.g., Caribbean, South American, Cuban
98	Unknown	n/a
99	Other/multiracial	n/a

Note
n/a: Not applicable.

Date of Birth

- Enter the patient's date of birth.
- Format: DD-MON-YYYY (e.g., 08-Apr-1958)
- This field is mandatory for proper patient identification.
- The majority of analyses are carried out according to patient age.

Health Card Number

- Enter the health insurance plan number as indicated on the health card for the patient. Please omit hyphens, blanks and version numbers, if applicable (e.g., 123123123).
- The health card number aids in identifying the patient and in avoiding duplicate patient records.
- For Manitoba residents, please use the personal health information number (PHIN).

Province/Territory of Health Card

- Enter the province/territory that is associated with the health card number provided.
- Acceptable values:

Codes — Province/Territory of Health Card

Code	Province/territory
AB	Alberta
BC	British Columbia
MB	Manitoba
NB	New Brunswick
NL	Newfoundland and Labrador
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
ON	Ontario
PE	Prince Edward Island
QC	Quebec
SK	Saskatchewan
YT	Yukon

Patient Address (City)

- Enter the town or city that is the usual place of residence for the patient at the time of transplant.
- This city is used for incidence mapping.

Patient Address (Province/Territory)

- Enter the province/territory that is the usual province/territory of residence at the time of transplant.
- This information is used for incidence mapping.
- Acceptable values: see Province/Territory of Health Card codes.

Patient Postal Code

- Enter the postal code for the patient's address at the time of transplant.
- Format: M3C2T9
- This information is used for incidence mapping.

Section B — Transplant Information

Waiting List Information

Date Patient First Placed on Waiting List

- Enter the date the patient was first placed on a waiting list for this transplant.
- Format: DD-MON-YYYY (e.g., 12-Jan-2015)

Date of Transplant

- Enter the date the transplant occurred.
- Format: DD-MON-YYYY (e.g., 12-Jun-2020)

Graft Number

- Indicate the sequential transplant number for the patient (e.g., the patient has had 1, 2, 3, etc. kidney transplant operations).
- Most actuarial survival analyses are based on the transplant number, e.g., graft survival of the first deceased-donor renal grafts.

Kidney Transplant Only Flag

- Check this box if the recipient is receiving only a kidney and no other organ at this time. If this is a combination transplant, please check the combination transplant box.

Double Kidney/En Bloc Flag

- Indicate, by checking the double kidney/en bloc box, if 2 kidneys from the same donor were transplanted during this operation.

Combination Transplant Flag

- Indicate, by checking the combination transplant box, if more than 1 organ was transplanted during this operation.

Specify Other Organ(s)

- Enter the other organ(s) transplanted during this combination transplant operation. Please note that Section B on the recipient registration forms for the other organs should be completed as part of the patient's registration.

Recipient Serology Status at Time of Transplant

Hepatitis BsAg

- Indicate whether the patient had the hepatitis B antigen present at time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis BcAb

- Indicate whether the patient tested positive for the hepatitis B antibody at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis C

- Indicate whether the patient had the hepatitis C antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Epstein–Barr

- Indicate whether the patient had the Epstein–Barr virus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

HIV

- Indicate whether the patient had the HIV antigen present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

CMV

- Indicate whether the patient had the cytomegalovirus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Donor-Specific Antibodies

- Acceptable values:

  N = No

  Y = Yes

Current Class I Panel Reactive Antibody (PRA) Level

- Enter the current percentage PRA at the time of transplant.
- Acceptable range: 0% to 100%

Peak Class I PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Current Class II PRA Level

- Enter the current percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Peak Class II PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Methods Used to Identify PRA Level

- The most sensitive method should be entered if more than 1 method is used by the laboratory.
- Acceptable values:

  CDC

  ELISA

  Flow

  Luminex

  Other

Recipient HLA

HLA: human lymphocyte antigen (antigenic markers used in determining compatibility between donors and recipients for some transplants). Please record information for the following markers:

Recipient HLA A

- Enter the patient's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.

- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA A

Code	Description
0001	A1
0002	A2
0203	A203
0210	A210
0003	A3
0009	A9
0010	A10
0011	A11
0019	A19
0023	A23(9)
0024	A24(9)
2403	A2403
0025	A25(10)
0026	A26(10)
0028	A28
0029	A29(19)
0030	A30(19)
0031	A31(19)
0032	A32(19)
0033	A33(19)
0034	A34(10)
0036	A36
0043	A43
0066	A66(10)
0068	A68(28)
0069	A69(28)
0074	A74(19)
0080	A80
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA B

- Enter the patient's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA B

Code	Description
0005	B5
0007	B7
0703	B703
0008	B8
0012	B12
0013	B13
0014	B14
0015	B15
0016	B16
0017	B17
0018	B18
0021	B21
0022	B22
0027	B27
2708	B2708
0035	B35
0037	B37
0038	B38(16)
0039	B39(16)
3901	B3901
3902	B3902
0040	B40
4005	B4005
0041	B41
0042	B42
0044	B44(12)
0045	B45(12)
0046	B46
0047	B47

Code	Description
0048	B48
0049	B49(21)
0050	B50(21)
0051	B51(5)
5102	B5102
5103	B5103
0052	B52(5)
0053	B53
0054	B54(22)
0055	B55(22)
0056	B56(22)
0057	B57(17)
0058	B58(17)
0059	B59
0060	B60(40)
0061	B61(40)
0062	B62(15)
0063	B63(15)
0064	B64(14)
0065	B65(14)
0067	B67
0070	B70
0071	B71(70)
0072	B72(70)
0073	B73
0075	B75(15)
0076	B76(15)
0077	B77(15)
0078	B78
0081	B81
0004	BW4
0006	BW6
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA C

- Enter the patient's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA C

Code	Description
0001	CW1
0002	CW2
0003	CW3
0004	CW4
0005	CW5
0006	CW6
0007	CW7
0008	CW8
0303/0009	CW9(3)
0302/0010	CW10(3)
0304/0010	CW10(3)
0012	CW12
0014	CW14
0015	CW15
0016	CW16
0017	CW17
0018	CW18

Recipient HLA DR

- Enter the patient's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)

- Acceptable values:

Codes — HLA DR

Code	Description
0001	DR1
0103	DR103
0002	DR2
0003	DR3
0004	DR4
0005	DR5
0006	DR6
0007	DR7
0008	DR8
0009	DR9
0010	DR10
0011	DR11(5)
0012	DR12(5)
0013	DR13(6)
0014	DR14(6)
1403	DR1403
1404	DR1404
0015	DR15(2)
0016	DR16(2)
0017	DR17(3)
0018	DR18(3)
0051	DR51
0052	DR52
0053	DR53
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA DQ

- Enter the patient's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number.
  (This aids in computer edit checking.)

- Acceptable values:

Codes — HLA DQ

Code	Description
0001	DQ1
0002	DQ2
0003	DQ3
0004	DQ4
0005	DQ5
0006	DQ6
0007	DQ7
0008	DQ8
0009	DQ9
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Primary Diagnosis

- Enter the code from the diagnosis code table that represents the primary cause of organ failure. Multiple diagnoses can be recorded, but only 1 primary diagnosis must be identified.
- If there is no diagnosis code that represents the primary cause of organ failure, enter the code 99 and describe the condition.
- Acceptable values:

Codes — Primary Diagnosis — Renal

Code	Description
Generic	
00	Chronic renal failure — etiology uncertain
Glomerulonephritis/autoimmune diseases	
05	Mesangial proliferative glomerulonephritis
06	Minimal lesion glomerulonephritis
07	Post-strep glomerulonephritis
08	Rapidly progressive glomerulonephritis
09	Focal glomerulosclerosis — adults
10	Glomerulonephritis, histologically NOT examined
11	Severe nephrotic syndrome with focal sclerosis (pediatric patients)
12	IgA nephropathy — proven by immunofluorescence (not code 85)
13	Dense deposit disease — proven by immunofluorescence and/or electron microscopy (MPGN type II)

Code	Description
Glomerulonephritis/autoimmune diseases (continued)	
14	Membranous nephropathy
15	Membranoproliferative mesangiocapillary glomerulonephritis (MPGN type I)
16	Idiopathic crescentic glomerulonephritis (diffuse proliferative)
17	Congenital nephrosis or congenital nephrotic syndrome (pediatric only)
19	Glomerulonephritis, histologically examined
73	Polyarteritis
74	Wegener's granulomatosis
84	Lupus erythematosus
85	Henoch–Schönlein purpura
86	Goodpasture syndrome
87	Scleroderma
88	Hemolytic uremic syndrome (Moschcowitz syndrome)
Nephropathy, drug induced	
30	Nephropathy caused by drugs or nephrotoxic agents, cause not specified
31	Nephropathy due to analgesic drugs
32	Nephropathy due to cisplatin
33	Nephropathy due to Cyclosporin A
39	Nephropathy caused by other specific drug
Polycystic kidney	
41	Polycystic kidneys, adult type (dominant)
42	Polycystic kidneys, infantile and juvenile types (recessive)
Congenital/hereditary renal diseases	
21	Pyelonephritis/interstitial nephritis associated with neurogenic bladder
22	Pyelonephritis/interstitial nephritis due to congenital obstructive uropathy with or without vesicoureteric reflux
24	Pyelonephritis/interstitial nephritis due to vesicoureteric reflux without obstruction
40	Cystic kidney disease, type unspecified
41	Polycystic kidneys, adult type (dominant)
42	Polycystic kidneys, infantile and juvenile types (recessive)
43	Medullary cystic disease, including nephronophthisis
49	Cystic kidney disease
50	Hereditary familial nephropathy, type unspecified
51	Hereditary nephritis with nerve deafness (Alport syndrome)
52	Cystinosis
53	Oxalosis
54	Fabry disease
55	DRASH syndrome

Code	Description
Congenital/hereditary renal diseases (continued)	
58	Posterior urethral valves
59	Hereditary nephropathy
60	Congenital renal hypoplasia
61	Oligomeganephronic hypoplasia
62	Segmental renal hypoplasia (Ask–Upmark kidney)
63	Congenital renal dysplasia with or without urinary tract malformation
66	Syndrome of agenesis of abdominal muscles (prune-belly syndrome)
Diabetes	
80	Diabetic nephropathy associated with type 1
81	Diabetic nephropathy associated with type 2
Renal vascular disease	
70	Renal vascular disease, type unspecified
71	Malignant hypertension (no primary renal disease)
72	Renal vascular disease due to hypertension (no primary renal disease)
73	Polyarteritis nodosa
78	Atheroembolic renal disease
79	Renal vascular disease, classified (nephrosclerosis, renal vascular thrombosis)
Other	
20	Pyelonephritis/interstitial nephritis, cause not specified
23	Pyelonephritis/interstitial nephritis due to acquired obstructive uropathy
25	Pyelonephritis/interstitial nephritis due to urolithiasis
29	Pyelonephritis, other causes
56	Sickle cell nephropathy
57	Wilms' tumour
82	Multiple myeloma
83	Amyloid
89	Multi-system disease
90	Cortical or acute tubular necrosis
91	Tuberculosis
92	Gout
93	Nephrocalcinosis and hypercalcemic nephropathy
94	Balkan nephropathy
95	Kidney tumour
96	Traumatic or surgical loss of kidney
97	HIV nephropathy
99	Other identified renal disorders — specify

Re-Transplant Flag

- Check this box if this is a re-transplant.

Diagnosis at Time of First Transplant

- Enter the code from the diagnosis code table that represents the diagnosis at the time of the first kidney transplant. Only 1 code is allowed.
- If there is no diagnosis code that represents the primary cause of organ failure, enter the code 99 and describe the condition.
- Acceptable values: see Primary Renal Diagnosis codes above.

Donor Organ Kidney

- Indicate whether the right, left or both kidneys were used.

Laparoscopic Nephrectomy

- Indicate whether laparoscopic nephrectomy was used. Laparoscopic nephrectomy is a minimally invasive surgical procedure used to recover a donor kidney for transplantation.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Recipient Height

- Enter the patient's height in centimetres at the time of transplant.
- Acceptable values: cm (conversion factor: 1 inch = 2.54 cm or 0.39 inches = 1 cm)

Recipient Weight

- Enter the patient's weight in kilograms at the time of transplant.
- Acceptable values: kg (conversion factor: 1 lb = 0.45 kg or 2.21 lbs = 1 kg)

Dialysis Pre-Transplant Flag

- Indicate whether the patient was receiving dialysis for end-stage renal disease (ESRD) prior to this kidney transplant operation. This alerts CORR staff to the fact that the transplant is NOT the patient's first treatment.
- The answer will be *no* if this is a pre-emptive transplant and the patient was not on long-term dialysis for ESRD.

- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Delayed Graft Function

- Indicate whether the patient had delayed graft function (no spontaneous decrease in creatinine in 48 hours).
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Dialysis Treatment Within the First Week of Transplant

- Indicate whether the patient received dialysis treatment within the first week of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Risk Factors — Kidney

Angina

- Indicate whether the patient suffered from angina at the time of transplant.
- Angina is defined as ischemic cardiac pain, either at rest or on exercise, requiring medical treatment with anti-anginal medication such as nitrates or calcium blockers (nifedipine or diltiazem).
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Peripheral Vascular Disease

- Indicate whether the patient has been described as having intermittent claudication at rest or on exercise or had aortal–femoral bypass surgery or amputation of toes, lower legs, etc., prior to this transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Malignancy

- Indicate whether the patient had a malignancy that existed prior to receiving the transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Previous Myocardial Infarction

- Indicate whether the patient had a confirmed myocardial infarction on the basis of EKG, cardiac enzymes, echocardiogram or thallium scans prior to receiving this kidney transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Pulmonary Edema

- Indicate whether the patient had a recent history of pulmonary edema prior to the transplant.
- Pulmonary edema is defined as an episode of severe shortness of breath requiring treatment with diuretics such as furosemide (Lasix) or emergency dialysis. Also, the patient may have been described as having congestive heart failure or severe fluid overload.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Chronic Obstructive Lung Disease

- Indicate whether the patient had clinically significant chronic chest disease requiring medical management prior to receiving the transplant.
- This will usually be described as chronic obstructive lung disease, chronic bronchitis or emphysema. Patient may be on oral bronchodilators (e.g., Choledyl) or inhalation drugs (e.g., Ventolin).
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Diabetes Type 1

- Indicate whether the patient was diagnosed with type 1 diabetes prior to the transplant. Type 1 diabetes usually develops in childhood or adolescence.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Type 1 diabetes: *Occurs when the pancreas no longer produces any, or produces very little, insulin. Usually develops in childhood or adolescence and affects about 10% of people with diabetes (Canadian Diabetes Association).*

Diabetes Type 2

- Indicate whether the patient was diagnosed with type 2 diabetes at the time of transplant. Type 2 usually occurs later in life.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Type 2 diabetes: *Occurs when the pancreas does not produce enough insulin to meet the body's needs or the insulin is not metabolized effectively. Usually occurs later in life and affects 90% of people with diabetes (Canadian Diabetes Association).*

Hypertension

- Indicate whether the patient was receiving medication such as calcium-blocking agents, vasodilators, beta blockers, diuretics or ACE inhibitors (e.g., captopril or enalapril) in order to control hypertension at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Previous Cerebrovascular Accident

- Indicate whether the patient had a cerebrovascular event such as a transient ischemic attack, cerebral infarct, cerebral hemorrhage, stroke or CVA prior to the transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Cold Ischemic Time

- Enter the time in minutes from initiation of cooling (including in situ cooling) to removal of the organ from cold storage.
- Acceptable range: kidney: 0 hours to 18 hours/0 minutes to 1,080 minutes

Section C — Donor Information

Information on surname stem, donor type, age and sex is used to accurately link the recipient information to the donor profile information as provided by the organ procurement organization. Only these fields need to be completed on the transplant forms for locally transplanted donors, as the complete information is provided on the Deceased Donor Profile.

In the case of living donor transplants, please check the living donor flag and complete a Living Donor Profile. This profile should be attached to the transplant recipient’s registration form for submission to CORR. The Living Donor Profile should also be completed for domino donors.

Donor Type

- Enter the code representing the type of donor for this transplant.
- Acceptable values:

Codes — Donor Type

Code	Description
01	Deceased donor
12	Domino donor
98	Unknown — out-of-country transplant
—	Living donor (see Living Donor Profile)

Program Organizing Organ Recovery

- Enter the name of the organ procurement organization responsible for organizing the recovery of organs from the donor (i.e., where the donor originated).
- For out-of-country donors, the name of the country is sufficient (e.g., U.S.).
- The program name is converted to a numeric code by CORR staff.

Recovery Program Donor Number

- Enter the local identification number used for the donor by the identifying organ recovery program. This number is used when linking recipient information to donor profile information and when requesting clarification of information from the local centre. (For example, if the organ used was from another province/territory, the original recovery program donor number **must** be used.)

Surname Stem

- Enter the first 3 letters of the donor's surname. In this way, confidentiality issues that may be encountered by using the full name are avoided.
- The surname stem allows the recipient record to be accurately linked with the correct donor profile record, especially in the case of out-of-province/-territory donors.

Age of Donor

- Enter the donor's age.
- Acceptable range:

  Age in **years** for patients 2 years or older (002 to 130)

  Age in **months** for patients younger than 24 months (001 to 023)

  Age in **days** for patients younger than 31 days (001 to 030)

  Newborns = 000

Donor Sex

- Enter the donor's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Donor HLA

HLA: human lymphocyte antigen, used in determining compatibility between donors and recipients for some transplants. Please record information for the following markers:

Donor HLA A

- Enter the donor's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA A codes as specified in the recipient section of this chapter.

Donor HLA B

- Enter the donor's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA B codes as specified in the recipient section of this chapter.

Donor HLA C

- Enter the donor's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA C codes as specified in the recipient section of this chapter.

Donor HLA DR

- Enter the donor's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DR codes as specified in the recipient section of this chapter.

Donor HLA DQ

- Enter the donor's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DQ codes as specified in the recipient section of this chapter.

Date of Cross Clamp

- Enter the date the organs were recovered and flushed with a specially prepared, ice-cold solution. Please note that the cross-clamp date is the same as the date of organ recovery.
- Format: DD-MON-YYYY (e.g., 14-Feb-2001)

Cross-Clamp Time

- Enter the time at which the organ was recovered and flushed with a specially prepared, ice-cold solution.
- Format: HH:MM (e.g., 18:20)

Recipient Outcome

(Recipient Information: Same as Section A of Kidney Transplant Recipient Registration Form)

This section collects recipient follow-up information that may be available when the transplant is registered.

Updates on patient status with respect to transplant failures and deaths, loss to follow-up and patient transfers will be collected annually or at intervals throughout the year.

Alternatively, the centre may provide computer printouts of all failures and deaths and the associated causes, as well as information on patient transfers and loss to follow-up, to the CORR office throughout the year at specified intervals. CORR data specifications must be used in this case.

Hospital Followed At

- Enter the name of the hospital where the patient is receiving transplant follow-up.
- This alerts CORR staff to send all future requests for information on the patient to the follow-up hospital and allows accurate tracking of the patient throughout the course of his or her treatment.

Patient Status

- Indicate whether the patient is alive, dead, transferred or lost to follow-up.
- Provide the date associated with the event indicated (alive as of what date, etc.).
- Format: DD-MON-YYYY (e.g., 18-Jan-2020)

If Recipient Is Deceased

Died With a Functioning Graft

- Indicate whether the patient died with a functioning graft.

Died Due to Graft Failure

- Indicate whether the patient died due to graft failure.

Cause of Death

- Please enter the date and cause of death for the recipient.
- Acceptable values:

Codes — Cause of Death

Code	Description
Generic	
00	Cause of death uncertain, not determined
Cardiac	
11	Myocardial ischemia and infarction
12	Hyperkalemia
13	Hemorrhagic pericarditis
14	Other causes of cardiac failure
15	Cardiac arrest, cause unknown
16	Hypertensive cardiac failure
17	Hypokalemia
18	Fluid overload
Vascular	
21	Pulmonary embolus
22	Cerebrovascular accident
24	Hemorrhage from graft site
25	Hemorrhage from vascular access or dialysis circuit
26	Hemorrhage from ruptured vascular aneurysm (not codes 22 and 23)
27	Hemorrhage from surgery (not codes 23 to 26)
28	Other hemorrhage (not codes 23 to 27)
55	Vascular thrombosis
56	Pulmonary vein stenosis
57	Stent/balloon complication
Infection	
03	Infection (bacterial)
04	Infection (viral)
05	Infection (fungal)
06	Cytomegalovirus
07	Epstein–Barr virus
08	Pneumocystic carinii pneumonia (PCP)
09	Protozoal/parasitic infection (includes toxoplasmosis)
10	Wound infection
34	Infection elsewhere (except viral hepatitis codes 41 and 42)

Code	Description
Infection (continued)	
35	Septicemia/sepsis
36	Tuberculosis (lung)
37	Tuberculosis (elsewhere)
38	Generalized viral infection
39	Peritonitis (not code 70)
Liver disease	
41	Liver, due to hepatitis B virus
42	Liver, other viral hepatitis
43	Liver, drug toxicity
44	Cirrhosis, not viral
45	Cystic liver disease
46	Liver failure, cause unknown
74	Liver, due to hepatitis C virus
Gastrointestinal	
20	Acute gastroenteritis with dehydration
02	Gastrointestinal tumour with or without perforation
23	Gastrointestinal hemorrhage
29	Mesenteric infarction
62	Pancreatitis
68	Perforation of peptic ulcer
70	Sclerosing (or adhesive) peritoneal disease
72	Perforation of colon/small bowel
Social	
50	Drug abuse (excludes alcohol abuse)
51	Patient refused further treatment
52	Suicide
53	Therapy ceased for any reason
54	Alcohol abuse
Accident	
81	Accident related to treatment
82	Accident unrelated to treatment
Miscellaneous	
30	Hypertension
40	Diabetic keto acidosis (DKA)
64	Cachexia
66	Malignant disease possibly induced by immunosuppressive therapy
67	Malignant disease except those of code 66

Code	Description
Miscellaneous (continued)	
69	Dementia
90	Multi-system failure
99	Other identified causes of death, specify
Respiratory	
19	Acute respiratory distress syndrome (ARDS)
31	Pulmonary infection (bacterial)
32	Pulmonary infection (viral)
33	Pulmonary infection (fungal)
49	Bronchiolitis obliterans
Metabolic	
59	Drug-related toxicity
Hematologic	
63	Bone marrow depression
71	Thrombocytopenia
73	Thrombosis
Renal disease	
61	Uremia caused by kidney transplant
Neurologic	
75	Drug neurotoxicity
76	Status epilepticus
77	Neurologic infection

Died Due to Graft Failure

- If the patient's death can be attributed to transplant failure (e.g., rejection), complete the Date and Cause of Graft Failure fields.
- Enter the date and the cause of death for the patient. See Cause of Death codes above.

Date of Graft Failure

- Enter the date the transplanted organ ceased to function adequately.
- Format: DD-MON-YYYY (e.g., 26-Jan-2020)
- The failure date must be equal to or greater than the transplant date and equal to or less than the re-transplant date or return-to-dialysis date.
- For kidney patients, the date of failure is considered to be the date that the patient returns to dialysis or the date that the kidney is removed as it no longer provides adequate function.

Cause of Graft Failure

- Enter the code representing the cause of graft failure (e.g., code 64 for chronic rejection).
- Acceptable values:

Codes — Cause of Graft Failure

Code	Description
00	Uncertain/unknown
01	Hyperacute rejection
63	Acute rejection
64	Chronic rejection
30	Rejection after stopping immunosuppressive drugs
67	Recurrent disease
68	Infection and rejection
36	Cyclosporin toxicity
69	Infection of graft
11	Primary non-function
18	De novo malignancy (graft)
23	Vascular thrombosis (graft)
26	Vascular operative problems
27	Ureteric operative problems
28	Surgical complication
99	Other cause of graft failure (describe)

5 Liver Transplant Recipient Registration Form

Section A — Recipient Information

Transplant Hospital Name

- Enter the hospital name where the transplant occurred.
- This information is converted to a 5-digit code by CIHI. If you know the CIHI code for your hospital, you may enter this on the form instead of the hospital name and city.

Patient Last Name

- Enter the surname or family/last name used by the patient. Do not record titles. A single hyphen (e.g., Smith-Watson), apostrophe (e.g., O'Hara) or blank (e.g., Van Dusen) is acceptable.

Patient First and Middle Names

- Enter the first name or given name as well as the middle name, if applicable, used by the patient.
- If the patient is often referred to by a nickname, please indicate this in brackets (e.g., William (Bill) Smith).

Patient Former Name

- Enter the maiden (unmarried) name or former surname for any patient who has undergone a name change. (For example, Elizabeth Smith was formerly Elizabeth Jones, so "Jones" would be recorded.)

Sex

- Enter the patient's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Blood Type

- Enter the patient's blood type.
- Acceptable values:

  A

  B

  AB

  O

  U (unknown/missing response)

Patient Ethnic Origin/Race

- Indicate the patient's ethnic origin/race.
- Only 1 response can be entered
- If *other/multiracial*, record the race(s).
- Acceptable values:

Codes — Ethnic Origin/Race

Code	Description	Examples
01	Caucasian (white)	E.g., French Canadians and other people of European, Australian or Russian ancestry
02	Asian	E.g., Chinese, Japanese, Vietnamese, Korean, Taiwanese
03	Black	E.g., African, Jamaican, Haitian, Somali
05	Indian subcontinent	E.g., Indian, Pakistani, Bangladeshi
08	Pacific Islander	E.g., Filipino
09	Aboriginal	E.g., North American Indian, Métis, Inuit
10	Middle Eastern/Arabian	E.g., Saudi Arabian, Iranian, Iraqi, Jordanian, Syrian, Armenian, Algerian
11	Latin American	E.g., Caribbean, South American, Cuban
98	Unknown	n/a
99	Other/multiracial	n/a

Note
n/a: Not applicable.

Date of Birth

- Enter the patient's date of birth.
- Format: DD-MON-YYYY (e.g., 08-Apr-1958)
- As most analyses are carried out according to patient age, this is a very important data element.

Health Card Number

- Enter the health insurance plan number as indicated on the health card for the patient. Please omit hyphens, blanks and version numbers, if applicable (e.g., 123123123).
- The health card number aids in identifying the patient and in avoiding duplicate patient records.
- For Manitoba residents, please use the personal health information number (PHIN).

Province/Territory of Health Card

- Enter the province/territory that is associated with the health care insurance plan number provided on the patient's health card.
- Acceptable values:

Codes — Province/Territory of Health Card

Code	Province/territory
AB	Alberta
BC	British Columbia
MB	Manitoba
NB	New Brunswick
NL	Newfoundland and Labrador
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
ON	Ontario
PE	Prince Edward Island
QC	Quebec
SK	Saskatchewan
YT	Yukon

Patient Address (City)

- Enter the town or city that is the usual place of residence for the patient at the time of transplant.
- This city is used for incidence mapping.

Patient Address (Province/Territory)

- Enter the province/territory that is the usual province/territory of residence at the time renal replacement therapy was initiated or at first transplant.
- This information is used for incidence mapping.
- Acceptable values: see the Province/Territory of Health Card codes above.

Patient Postal Code

- Enter the postal code for the patient's usual address at the time of transplant.
- Format: M3C2T9
- This information is used for incidence mapping.

Recipient Height

- Enter the patient's actual height in centimetres at the time of transplant.
- Acceptable values: cm (conversion factor: 1 inch = 2.54 cm or 0.39 inches = 1 cm)

Recipient Weight

- Enter the patient's weight in kilograms at the time of transplant.
- Acceptable values: kg (conversion factor: 1 lb = 0.45 kg or 2.21 lbs = 1 kg)

Section B — Transplant Information

Waiting List Information

Date Patient First Placed on Waiting List

- Enter the date the patient was first placed on a waiting list for this transplant.
- Format: DD-MON-YYYY (e.g., 12-Jan-2018)

Medical Status at Waiting List

- Enter the code for the patient's medical status at the time he or she was first placed on the waiting list. (Medical status at the time of transplant is also recorded. See Section B.)
- Acceptable values:

Codes — Medical Status

Code	Description
19	Status 1 — at home
16	Status 1T — tumour patient
17	Status 2 — hospitalized
05	Status 3 — hospitalized ICU
11	Status 3F — fulminant
18	Status 4 — ICU intubated and ventilated
12	Status 4F — fulminant

Date Moved to Final List Status

- If the final list status is not the same as the initial list status, indicate the date that the patient was moved to the final list status.
- Format: DD-MON-YYYY (e.g., 12-Jan-2019)

Medical Status at Time of Transplant

- Enter the code for the patient's medical status at the time of transplant.
- Acceptable values:

Codes — Medical Status

Code	Description
19	Status 1 — at home
16	Status 1T — tumour patient
17	Status 2 — hospitalized
05	Status 3 — hospitalized ICU
11	Status 3F — fulminant
18	Status 4 — ICU intubated and ventilated
12	Status 4F — fulminant

Date of Transplant

- Enter the date the transplant occurred.
- Format: DD-MON-YYYY (e.g., 12-Jun-2020)

Liver Transplant Only Flag

- Check the box if the recipient is receiving only a liver transplant and no other organ at this time. If this is a combination transplant, please check the combination transplant box.

Combination Transplant Flag

- Indicate, by checking the combination transplant box, whether more than 1 organ was transplanted during this operation.

Graft Number

- Indicate the sequential transplant number for the patient (e.g., the patient has had 1, 2, 3, etc. liver transplant operations).
- Most actuarial survival analyses are based on the transplant number, e.g., graft survival of first deceased-donor liver grafts.

Specify Other Organ(s)

- Where applicable, enter the other organ(s) transplanted during this combination transplant operation. Please note that Section B on recipient registration forms for the other organs should also be completed as part of the patient's registration.

Primary Diagnoses

- Enter the codes that represent the primary causes of organ failure. Up to **4 diagnoses** may be coded. Note that this can include retrospective/incidental diagnoses.
- If there is no diagnosis code that represents the primary cause of organ failure, enter the code 99 and describe the condition.

- Acceptable values:

Codes — Primary Diagnoses — Liver

Code	Description
Acute hepatic failure (fulminant)	
01	Hepatitis, type A
02	Hepatitis, type B
61	Hepatitis, type C
58	Hepatitis, type non-A, -B, -C
35	Hepatitis with delta
05	Toxics
04	Drug induced, other
56	Drug induced, acetaminophen
47	Other/fulminant hepatic failure (including Budd–Chiari syndrome and Wilson disease)
Chronic hepatic failure	
12	Budd–Chiari syndrome
36	Byler disease (intra-hepatic cholestasis)
09	Cirrhosis, alcoholic
10	Cirrhosis, other
08	Cryptogenic cirrhosis
49	Post-necrotic cirrhosis
07	Primary biliary cirrhosis
14	Secondary biliary cirrhosis
45	Drug induced, other
42	Hepatitis, type A
43	Hepatitis, type B
60	Hepatitis, type C
59	Hepatitis, type non-A, -B, -C
51	Neonatal hepatitis
06	Autoimmune chronic active hepatitis
13	Primary biliary atresia
11	Sclerosing cholangitis
46	Toxic
15	Watson–Alagille disease (arterio-hepatic dysplasia)
62	Polycystic liver disease
64	Non-alcoholic steatohepatitis (NASH)

Code	Description
Hepatic tumours	
50	Angiosarcoma
17	Cholangiocarcinoma
18	Fibrolamellar hepatoma
16	Hepatocellular carcinoma
19	Metastatic tumour
53	Hepatic tumour, other
Metabolic disorders	
20	Alpha I anti-trypsin deficiency
28	Crigler–Najjar syndrome
21	Glycogen storage disease
23	Hemochromatosis
27	Hyperlipoproteinemia type 2
24	Niemann–Pick
26	Phenylketonuria
25	Protoporphyria
29	Tyrosinemia
22	Wilson disease
34	Metabolic disorder, other
Other primary diagnosis	
30	Congenital hepatic fibrosis
31	Caroli disease
32	Cystic disorders
52	Thrombosed hepatic artery
98	Unknown/missing
99	Other

Re-Transplant Flag

- Check this box if this is a re-transplant.

Recipient Serology Status at Time of Transplant

Hepatitis BsAg

- Indicate whether the patient had the hepatitis BsAg antigen present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis BcAb

- Indicate whether the patient tested positive for the hepatitis BcAb antibody at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis B DNA

- Indicate whether hepatitis B DNA was present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response
- If positive, provide the measurement in pg/mL.
- Acceptable range: 0 pg/mL to 100 pg/mL

Hepatitis B Treatment at Time of Transplant

- Indicate whether the patient was receiving treatment at the time of transplant.
- Acceptable values:

  0 = No

  1 = Yes, interferon

  2 = Yes, lamivudine

  3 = Other — specify

  9 = Unknown/missing response

Hepatitis C

- Indicate whether the patient had the hepatitis C antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

RNA Detectable

- If hepatitis C–positive, indicate whether RNA is detectable.
- Acceptable values:

  N = No

  Y = Yes — specify method and result (million copies/mL)

  X = Not collected

Genotype

- Indicate the patient's genotype.
- Acceptable values:

  1

  2

  3

  4

  5

  6

  9 = Unknown

Hepatitis C Treatment at Time of Transplant

- Indicate treatment for hepatitis C at the time of transplant.
- Acceptable values:

  1 = Interferon

  2 = Ribavirin

  3 = Both interferon and ribavirin

  9 = Unknown/missing response

Epstein–Barr

- Indicate whether the patient had the Epstein–Barr virus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

CMV

- Indicate whether the patient had the cytomegalovirus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

HIV

- Indicate whether the patient had the HIV antigen present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Current Class I Panel Reactive Antibody (PRA) Level

- Enter the current percentage PRA at the time of transplant.
- Acceptable range: 0% to 100%

Peak Class I PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Current Class II PRA Level

- Enter the current percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Peak Class II PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Methods Used to Identify PRA Level

- The most sensitive method should be entered if the laboratory uses more than 1 method.
- Acceptable values:

  CDC

  ELISA

  Flow

  Luminex

  Other

Standard Crossmatch Test Result

- Indicate whether the standard crossmatch test on T-cell lymphocytes or peripheral blood lymphocytes (PBL) was positive or negative at 22°C or 37°C.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Recipient HLA

HLA: human lymphocyte antigen (antigenic markers used in determining compatibility between donors and recipients for some transplants). Please record information for the following markers:

Recipient HLA A

- Enter the patient's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number.
  (This aids in computer edit checking.)

- Acceptable values:

Codes — HLA A

Code	Description
0001	A1
0002	A2
0203	A203
0210	A210
0003	A3
0009	A9
0010	A10
0011	A11
0019	A19
0023	A23(9)
0024	A24(9)
2403	A2403
0025	A25(10)
0026	A26(10)
0028	A28
0029	A29(19)
0030	A30(19)
0031	A31(19)
0032	A32(19)
0033	A33(19)
0034	A34(10)
0036	A36
0043	A43
0066	A66(10)
0068	A68(28)
0069	A69(28)
0074	A74(19)
0080	A80
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA B

- Enter the patient's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA B

Code	Description
0005	B5
0007	B7
0703	B703
0008	B8
0012	B12
0013	B13
0014	B14
0015	B15
0016	B16
0017	B17
0018	B18
0021	B21
0022	B22
0027	B27
2708	B2708
0035	B35
0037	B37
0038	B38(16)
0039	B39(16)
3901	B3901
3902	B3902
0040	B40
4005	B4005
0041	B41
0042	B42
0044	B44(12)
0045	B45(12)
0046	B46
0047	B47

Code	Description
0048	B48
0049	B49(21)
0050	B50(21)
0051	B51(5)
5102	B5102
5103	B5103
0052	B52(5)
0053	B53
0054	B54(22)
0055	B55(22)
0056	B56(22)
0057	B57(17)
0058	B58(17)
0059	B59
0060	B60(40)
0061	B61(40)
0062	B62(15)
0063	B63(15)
0064	B64(14)
0065	B65(14)
0067	B67
0070	B70
0071	B71(70)
0072	B72(70)
0073	B73
0075	B75(15)
0076	B76(15)
0077	B77(15)
0078	B78
0081	B81
0004	BW4
0006	BW6
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA C

- Enter the patient's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA C

Code	Description
0001	CW1
0002	CW2
0003	CW3
0004	CW4
0005	CW5
0006	CW6
0007	CW7
0008	CW8
0303/0009	CW9(3)
0302/0010	CW10(3)
0304/0010	CW10(3)
0012	CW12
0014	CW14
0015	CW15
0016	CW16
0017	CW17
0018	CW18

Recipient HLA DR

- Enter the patient's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DR

Code	Description
0001	DR1
0103	DR103
0002	DR2
0003	DR3
0004	DR4
0005	DR5
0006	DR6
0007	DR7
0008	DR8
0009	DR9
0010	DR10
0011	DR11(5)
0012	DR12(5)
0013	DR13(6)
0014	DR14(6)
1403	DR1403
1404	DR1404
0015	DR15(2)
0016	DR16(2)
0017	DR17(3)
0018	DR18(3)
0051	DR51
0052	DR52
0053	DR53
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA DQ

- Enter the patient's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DQ

Code	Description
0001	DQ1
0002	DQ2
0003	DQ3
0004	DQ4
0005	DQ5
0006	DQ6
0007	DQ7
0008	DQ8
0009	DQ9
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Child–Pugh Score at Transplant

- Enter the Child–Pugh score at the time of the liver transplant.
- Acceptable range: 3 to 15

Creatinine at Time of Transplant

- Enter the patient's creatinine at the time of the liver transplant.
- Measured in µmol/L.
- Acceptable range: 0 µmol/L to 999 µmol/L

Total Serum Bilirubin at Time of Transplant

- Enter the total serum bilirubin for the patient at the time of the liver transplant.
- Measured in µmol/L.
- Acceptable range: 0 µmol/L to 999 µmol/L

International Normalized Ratio (INR)

- Enter the INR for the patient at the time of the liver transplant.
- INR is defined as the prothrombin time (PT) ratio, which is the patient's PT value divided by the mean of the PT normal range.
- Acceptable range: 0.50 to 9.99

Split or Reduction Technique

Liver Reduction

- Indicate whether the liver was surgically reduced in size once it was removed from the donor.
- There can be 1 recipient only.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Split Liver

- Indicate whether the liver was split into 2 transplantable portions after removal from the donor and whether it is the left or right.
- There will be 2 recipients.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Technique

- Indicate whether the transplantation technique used was in situ, ex situ or a combination of the 2.
- Ex situ splitting of the liver is performed on the bench after the liver has been removed from the cadaver. The liver is usually divided into 2 grafts: segments 2 and 3 for children and segments 4 to 8 for adults.
- In situ liver splitting is accomplished in a manner identical to living donor procurement. Graft splitting is performed in the donor before liver preservation. In situ splitting results in the same graft types as the ex situ technique.

- Acceptable values:

  1 = In situ

  2 = Ex situ

  3 = Combination

Primary and Metastatic Tumours in the Liver

Complete this section on the current liver transplant form or attach a copy of the form submitted to the International Registry of Hepatic Tumors in Liver Transplantation (Baylor University Medical Centre). This entire section was added to the reporting requirements on January 1, 2001.

Primary and Metastatic Tumours in the Liver Flag

- Indicate whether the recipient had primary and metastatic tumours in his or her liver.
- If *no*, do not complete the items relating to tumours on the form.
- Acceptable values:

  N = No

  Y = Yes

Tumour Markers

Alpha Fetoprotein

- Enter the levels of alpha fetoprotein (AFP) at the time of transplant.
- The specificity of AFP for malignancy is greatest at levels higher than 1,000 ng/mL.

Chorioembryonic Antigen

- Enter the levels of the chorioembryonic antigen (CEA) at the time of transplant.
- Acceptable reference interval: 0.0 ng/mL to 10.0 ng/mL

Number of Nodules

- Enter the number of nodules or masses found.

Diameter of Largest Nodule

- Indicate the diameter of the largest nodule in centimetres.

Bilobar

- Indicate whether the cancer is in both the right and left lobes of the liver substance and not in the bile ducts or gallbladder.
- Acceptable values:

  N = No

  Y = Yes

Tumour Characteristics

- Indicate whether the tumour is multifocal (widely distributed nodules of variable size) or single (unifocal, large mass).
- Acceptable values:

  1 = Single

  2 = Multifocal

Histologic Grade

- Provide the grade for the patient's tumours.
- If 2 numbers (e.g., I–II) are used, use the higher number.
- If both grade and grading system are specified (e.g., I/III), code the grade only (e.g., I) and not the 3-point grading system.

Histologic Grade Classification System

- Indicate the classification system used to grade the tumours. (Systems used to grade tumours vary with each type of cancer.)

Vascular Involvement

- Indicate whether or not the patient's tumours have vascular involvement.
- Acceptable values:

  N = No

  Y = Yes

Spread at Surgery

- Indicate where, if any, the patient's tumours have spread at the time of surgery.
- Acceptable values:

  0 = None

  1 = Periaortic

  2 = Lungs, mediastinum

  3 = Diaphragm

  4 = Abdomen, other

  5 = Hilar nodes

Adjunct Tumour Therapy

Embolization Therapy — Pre-Op

- Circle the appropriate response to indicate whether the patient received embolization therapy pre-operatively.
- Acceptable values:

  N = No

  Y = Yes

Irradiation Therapy — Pre-Op

- Circle the appropriate response to indicate whether the patient received irradiation therapy pre-operatively.
- Acceptable values:

  N = No

  Y = Yes

Irradiation Therapy — Intra-Op

- Circle the appropriate response to indicate whether the patient received irradiation therapy intra-operatively.
- Acceptable values:

  N = No

  Y = Yes

Irradiation Therapy — Post-Op

- Circle the appropriate response to indicate whether the patient received irradiation therapy post-operatively.
- Acceptable values:

  N = No

  Y = Yes

Other Tumour Treatment — Pre-Op

- Circle the appropriate response to indicate whether the patient received another form of tumour treatment pre-operatively.
- Specify treatment agent.
- Acceptable values:

  N = No

  Y = Yes

Other Tumour Treatment — Intra-Op

- Circle the appropriate response to indicate whether the patient received another form of tumour treatment intra-operatively.
- Specify treatment agent.
- Acceptable values:

  N = No

  Y = Yes

Other Tumour Treatment — Post-Op

- Circle the appropriate response to indicate whether the patient received another form of tumour treatment post-operatively.
- Specify treatment agent.
- Acceptable values:

  N = No

  Y = Yes

Adriamycin (Chemotherapy) — Pre-Op

- Circle the appropriate response to indicate whether the patient received Adriamycin treatment pre-operatively.
- Acceptable values:

  N = No

  Y = Yes

Adriamycin (Chemotherapy) — Intra-Op

- Circle the appropriate response to indicate whether the patient received Adriamycin treatment intra-operatively.
- Acceptable values:

  N = No

  Y = Yes

Adriamycin (Chemotherapy) — Post-Op

- Circle the appropriate response to indicate whether the patient received Adriamycin treatment post-operatively.
- Acceptable values:

  N = No

  Y = Yes

5-FU (Chemotherapy) — Pre-Op

- Circle the appropriate response to indicate whether the patient received 5-FU treatment pre-operatively.
- Acceptable values:

  N = No

  Y = Yes

5-FU (Chemotherapy) — Intra-Op

- Circle the appropriate response to indicate whether the patient received 5-FU treatment intra-operatively.
- Acceptable values:

  N = No

  Y = Yes

5-FU (Chemotherapy) — Post-Op

- Circle the appropriate response to indicate whether the patient received 5-FU treatment post-operatively.
- Acceptable values:

  N = No

  Y = Yes

5-FU DR (Chemotherapy) — Pre-Op

- Circle the appropriate response to indicate whether the patient received 5-FU DR treatment pre-operatively.
- Acceptable values:

  N = No

  Y = Yes

5-FU DR (Chemotherapy) — Intra-Op

- Circle the appropriate response to indicate whether the patient received 5-FU DR treatment intra-operatively.
- Acceptable values:

  N = No

  Y = Yes

5-FU DR (Chemotherapy) — Post-Op

- Circle the appropriate response to indicate whether the patient received 5-FU DR treatment post-operatively.
- Acceptable values:

  N = No

  Y = Yes

Cisplatin (Chemotherapy) — Pre-Op

- Circle the appropriate response to indicate whether the patient received cisplatin treatment pre-operatively.
- Acceptable values:

  N = No

  Y = Yes

Cisplatin (Chemotherapy) — Intra-Op

- Circle the appropriate response to indicate whether the patient received cisplatin treatment intra-operatively.
- Acceptable values:

  N = No

  Y = Yes

Cisplatin (Chemotherapy) — Post-Op

- Circle the appropriate response to indicate whether the patient received cisplatin treatment post-operatively.
- Acceptable values:

  N = No

  Y = Yes

Other Chemotherapy Treatment — Pre-Op

- Circle the appropriate response to indicate whether the patient received another form of chemotherapy treatment pre-operatively.
- Specify treatment agent.
- Acceptable values:

  N = No

  Y = Yes

Other Chemotherapy Treatment — Intra-Op

- Circle the appropriate response to indicate whether the patient received another form of chemotherapy treatment intra-operatively.
- Specify treatment agent.
- Acceptable values:

  N = No

  Y = Yes

Other Chemotherapy Treatment — Post-Op

- Circle the appropriate response to indicate whether the patient received another form of chemotherapy treatment post-operatively.
- Specify treatment agent.
- Acceptable values:

  N = No

  Y = Yes

Warm Ischemic Time

- Enter the time in minutes between clamping the major vessels (usually the aorta) or the time of cardiac arrest and the initiation of cold flushing.
- Enter 0 for in situ perfusion.
- Acceptable range: 0 minutes to 99 minutes

Cold Ischemic Time

- Enter the time in minutes from initiation of cooling (including in situ cooling) to removal of the organ from cold storage.
- Acceptable range: 15 minutes to 720 minutes (12 hours)

Re-Warm Time

- Enter the time in minutes between removal of the organ from cold storage and the time the clamps are released in the recipient allowing blood flow.
- Also known as re-perfusion time or anastomosis time.
- Acceptable range: 15 minutes to 90 minutes

Section C — Donor Information

Information on surname stem, donor type, age and sex is used to accurately link the recipient information to the donor profile information as provided by the organ procurement organization. Only these fields need to be completed on the transplant forms for locally transplanted donors, as the complete information is provided on the Deceased Donor Profile form.

In the case of live donor transplants, please check the living donor flag and complete a Living Donor Profile. This profile should be attached to the transplant recipient's registration form for submission to CORR. The Living Donor Profile should also be completed for domino donors.

Donor Type

- Enter the code representing the type of donor for the transplant.
- Acceptable values:

Codes — Donor Type

Code	Description
01	Deceased donor
12	Domino donor

Program Organizing Organ Recovery

- Enter the name of the organ procurement organization responsible for organizing the recovery of organs from the donor (i.e., where the donor originated).
- For out-of-country donors, the name of the country is sufficient (e.g., U.S.).
- The program name is converted to a numeric code by CORR staff.

Recovery Program Donor Number

- Enter the local identification number used for this donor by the identifying organ recovery program. This number is used when linking recipient information to donor profile information, and when requesting clarification of information from the local centre. (For example, if the organ used was from another province/territory, the original recovery program donor number **must** be used.)

Surname Stem

- Enter the first 3 letters of the donor's surname. In this way, confidentiality issues that may be encountered by using the full name are avoided.
- The surname stem allows the recipient record to be accurately linked with the correct donor profile record, especially in the case of out-of-province/-territory donors.

Age of Donor

- Enter the donor's age at the time of donation.
- Acceptable range:

  Age in **years** for patients 2 years or older (002 to 130)

  Age in **months** for patients younger than 24 months (001 to 023)

  Age in **days** for patients younger than 31 days (001 to 030)

  Newborns = 000

Donor Sex

- Enter the donor's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Donor HLA

HLA: human lymphocyte antigen, used in determining compatibility between donors and recipients for some transplants. Please record information for the following markers:

Donor HLA A

- Enter the donor's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number.
  (This aids in computer edit checking.)
- Acceptable values: see HLA A codes as specified in the recipient section of this chapter.

Donor HLA B

- Enter the donor's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number.
  (This aids in computer edit checking.)
- Acceptable values: see HLA B codes as specified in the recipient section of this chapter.

Donor HLA C

- Enter the donor's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA C codes as specified in the recipient section of this chapter.

Donor HLA DR

- Enter the donor's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DR codes as specified in the recipient section of this chapter.

Donor HLA DQ

- Enter the donor's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DQ codes as specified in the recipient section of this chapter.

Date of Cross Clamp

- Enter the date the organs were recovered and flushed with a specially prepared, ice-cold solution. Please note that the cross-clamp date is the same as the date of organ recovery.
- Format: DD-MON-YYYY (e.g., 12-Jun-2020)

Cross-Clamp Time

- Enter the time at which the organ was recovered and flushed with a specially prepared, ice-cold solution.
- Format: HH:MM (e.g., 12:15)

Recipient Outcome

(Recipient Information: Same as Section A of Liver Transplant Recipient Registration Form)

This section collects recipient follow-up information that may be available when the transplant is registered.

Updates on patient status with respect to transplant failures and deaths, loss to follow-up and patient transfers will be collected annually or at intervals throughout the year.

Alternatively, the centre may provide computer printouts of all failures and deaths and the associated causes, as well as information on patient transfers and loss to follow-up, to the CORR office throughout the year. CORR data specifications must be used in this case.

Hospital Followed At

- Enter in full the name of the hospital where the patient is receiving transplant follow-up.
- This alerts CORR staff to send all future requests for information on the patient to the follow-up hospital and allows accurate tracking of the patient throughout the course of treatment.

Patient Status

- Indicate whether the patient is alive, dead, transferred or lost to follow-up.
- Provide the date associated with the event indicated (alive as of what date, etc.).
- Format: DD-MON-YYYY (e.g., 16-Feb-2020)

If Recipient Is Deceased

Died With a Functioning Graft

- Indicate whether the patient died with a functioning graft.

Died Due to Graft Failure

- Indicate whether the patient died due to graft failure.

Cause of Death

- Please enter the date and cause of death.

- Acceptable values:

Codes — Cause of Death

Code	Description
Generic	
00	Cause of death uncertain, not determined
Accident	
81	Accident related to treatment
82	Accident unrelated to treatment
Cardiac	
11	Myocardial ischemia and infarction
12	Hyperkalemia
13	Hemorrhagic pericarditis
14	Other causes of cardiac failure
15	Cardiac arrest, cause unknown
16	Hypertensive cardiac failure
17	Hypokalemia
18	Fluid overload
Gastrointestinal	
02	Gastrointestinal tumour with or without perforation
20	Acute gastroenteritis with dehydration
23	Gastrointestinal hemorrhage
29	Mesenteric infarction
62	Pancreatitis
68	Perforation of peptic ulcer
70	Sclerosing (or adhesive) peritoneal disease
72	Perforation of colon/small bowel
Hematologic	
63	Bone marrow depression
71	Thrombocytopenia
73	Thrombosis
Infection	
03	Infection (bacterial)
04	Infection (viral)
05	Infection (fungal)
06	Cytomegalovirus
07	Epstein–Barr virus
08	Pneumocystic carinii pneumonia (PCP)
09	Protozoal/parasitic infection (includes toxoplasmosis)
10	Wound infection

Code	Description
Infection (continued)	
34	Infection elsewhere (except hepatitis; see codes 41 and 42)
35	Septicemia/sepsis
36	Tuberculosis (lung)
37	Tuberculosis (elsewhere)
38	Generalized viral infection
39	Peritonitis (not code 70)
Metabolic	
59	Drug-related toxicity
Neurologic	
75	Drug neurotoxicity
76	Status epilepticus
77	Neurologic infection
Renal disease	
47	Acute renal failure
48	Chronic renal failure
61	Uremia caused by kidney transplant failure
Respiratory	
19	Acute respiratory distress syndrome (ARDS)
31	Pulmonary infection (bacterial)
32	Pulmonary infection (viral)
33	Pulmonary infection (fungal)
49	Bronchiolitis obliterans
Social	
50	Drug abuse (excludes alcohol abuse)
51	Patient refused further treatment
52	Suicide
53	Therapy ceased for any other reason
54	Alcohol abuse
Vascular	
21	Pulmonary embolus
22	Cerebrovascular accident
24	Hemorrhage from graft site
25	Hemorrhage from vascular access or dialysis circuit
26	Hemorrhage from ruptured vascular aneurysm (not codes 22 and 23)
27	Hemorrhage from surgery (not codes 23 to 26)
28	Other hemorrhage (not codes 23 to 27)
55	Vascular thrombosis
56	Pulmonary vein stenosis
57	Stent/balloon complication

Code	Description
Miscellaneous	
30	Hypertension
40	Diabetic keto acidosis (DKA)
64	Cachexia
66	Malignant disease possibly induced by immunosuppressive therapy
67	Malignant disease except those of code 66
69	Dementia
90	Multi-system failure
99	Other identified causes of death, specify

Died Due to Graft Failure

- If the patient's death can be attributed to transplant failure (e.g., rejection), complete the Date and Cause of Graft Failure fields.
- Enter the date and cause of death for the patient. See the Cause of Death codes above.

Date of Graft Failure

- Enter the date the transplanted organ ceased to function adequately.
- Format: DD-MON-YYYY (e.g., 26-Jan-2020)
- The failure date must be equal to or greater than the transplant date and equal to or less than the re-transplant date.

Cause of Graft Failure

- Check the code representing the cause of graft failure (e.g., code 64 for chronic rejection).
- Acceptable values:

Codes — Cause of Graft Failure

Code	Description
00	Uncertain/unknown
01	Hyperacute rejection
63	Acute rejection
64	Chronic rejection
30	Rejection after stopping immunosuppressive drugs
67	Recurrent disease
68	Infection and rejection
69	Infection of graft
11	Primary non-function

Code	Description
14	Graft/portal vein thrombosis
15	Graft/hepatic vein thrombosis
16	Biliary tract complication
18	De novo malignancy (graft)
22	Arterial thrombosis
28	Surgical complication
33	De novo hepatitis
99	Other cause of graft failure — describe

6 Living Donor Profile

Section A — Donor Information

This form should be completed for all living and domino donors. Please attach the relevant transplant recipient form.

Donor Type

- Enter the code representing the type of donor for this transplant.
- Acceptable values:

Codes — Donor Type

Code	Description
13	Autograft
14	Fetal tissue (islet cells)
Living biologically related	
02	Parent
03	Sibling
04	Offspring
05	Other relative (e.g., mother’s sister)
Living biologically unrelated	
06	Living unrelated (e.g., in-law or donor with emotional attachment to recipient)
07	Spouse
10	Anonymous/altruistic donor (no biological/emotional relationship to the recipient)
12	Domino donor
15	Paired

Transplant Hospital Organizing Organ Recovery

- Enter the name of the transplant hospital organizing this living or domino donor donation.
- The hospital name is converted to a numeric code by CORR staff.

Transplant Hospital Donor Number

- Enter the local identification number used for the donor at the transplant hospital.

Surname Stem

- Enter the first 3 letters of the donor's surname. In this way, confidentiality issues that may be encountered by using the full name are avoided.

Province/Territory or State of Residence

- Enter the donor's province/territory or state of residence.
- Acceptable values: See the Province/Territory or State of Residence codes below.

Codes — Province/Territory or State of Residence

Code	Province/territory — Canada
AB	Alberta
BC	British Columbia
MB	Manitoba
NB	New Brunswick
NL	Newfoundland and Labrador
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
ON	Ontario
PE	Prince Edward Island
QC	Quebec
SK	Saskatchewan
YT	Yukon

Code	State — United States
AL	Alabama
AK	Alaska
AS	American Samoa
AZ	Arizona
AR	Arkansas
CA	California
CO	Colorado
CT	Connecticut
DE	Delaware
DC	District of Columbia
FL	Florida
GA	Georgia
GU	Guam
HI	Hawaii
NE	Nebraska
NV	Nevada
NH	New Hampshire
NJ	New Jersey
NM	New Mexico
NY	New York
NC	North Carolina
ND	North Dakota
OH	Ohio
OK	Oklahoma
PA	Pennsylvania
PR	Puerto Rico
RI	Rhode Island
SC	South Carolina
ID	Idaho
IL	Illinois
IN	Indiana
IA	Iowa
KS	Kansas
KY	Kentucky
LA	Louisiana
ME	Maine
MD	Maryland
MA	Massachusetts

Code	State — United States
MI	Michigan
MN	Minnesota
MS	Mississippi
MO	Missouri
MT	Montana
SD	South Dakota
TN	Tennessee
TX	Texas
UT	Utah
VT	Vermont
VI	Virgin Islands
VA	Virginia
WA	Washington
WV	West Virginia
WI	Wisconsin
WY	Wyoming
XX	Country other than Canada or United States
ZZ	Unknown

Country of Residence

- Enter the donor's country of residence.
- Acceptable values: see the codes for Country of Residence below.

Codes — Country of Residence

Code	Country
AUS	Australia
AUT	Austria
BEL	Belgium
CAN	Canada
CZE	Czechoslovakia
DNK	Denmark
DEU	Germany
GBR	United Kingdom
FRA	France
ISR	Israel
ITA	Italy

Code	Country
JPN	Japan
MEX	Mexico
ESP	Spain
SWE	Sweden
USA	United States

Age of Donor

- Enter the donor's age in years at the time of donation.

Donor Sex

- Enter the donor's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Donor Blood Type

- Enter the donor's blood type.
- Acceptable values:

  A

  B

  AB

  O

  U (unknown/missing response)

Donor's Ethnic Origin/Race

- Enter the code for the donor's ethnic origin/race.
- Only 1 response can be checked.
- If *other/multiracial*, record the race(s).

- Acceptable values:

Codes — Ethnic Origin/Race

Code	Description	Examples
01	Caucasian (white)	E.g., French Canadians and other people of European, Australian or Russian ancestry
02	Asian	E.g., Chinese, Japanese, Vietnamese, Korean, Taiwanese
03	Black	E.g., African, Jamaican, Haitian, Somali
05	Indian subcontinent	E.g., Indian, Pakistani, Bangladeshi
08	Pacific Islander	E.g., Filipino
09	Aboriginal	E.g., North American Indian, Métis, Inuit
10	Middle Eastern/Arabian	E.g., Saudi Arabian, Iranian, Iraqi, Jordanian, Syrian, Armenian, Algerian
11	Latin American	E.g., Caribbean, South American, Cuban
98	Unknown	n/a
99	Other/multiracial	n/a

Note
n/a: Not applicable.

Donor Height

- Enter the donor's height in centimetres at the time of transplant.
- Acceptable values: cm (conversion factor: 1 inch = 2.54 cm or 0.39 inches = 1 cm)

Donor Weight

- Enter the donor's weight in kilograms at the time of transplant.
- Acceptable values: kg (conversion factor: 1 lb = 0.45 kg or 2.21 lbs = 1 kg)

Section B — Hospital Information

Date of Admission

- Enter the date the donor was admitted to the hospital.
- Format: DD-MON-YYYY (e.g., 14-Feb-2020)

Date of Cross Clamp

- Enter the date the organs were recovered and flushed with a specially prepared, ice-cold solution. Please note that the cross-clamp date is the same as the date of organ recovery.
- Format: DD-MON-YYYY (e.g., 14-Feb-2020)

Cross-Clamp Time

- Enter the time at which the organ was recovered and flushed with a specially prepared, ice-cold solution.
- Format: HH:MM (e.g., 13:29)

Section C — Donor Serology and Risk Factors

Donor Serology Status

Hepatitis BsAg

- Indicate whether the donor had the hepatitis B antigen (hepatitis BsAg) present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis BcAb

- Indicate whether the donor tested positive for the hepatitis B antibody at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis C

- Indicate whether the donor had the hepatitis C antibody present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Epstein–Barr

- Indicate whether the donor had the Epstein–Barr virus antibody present at the time of donation.

- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

HIV

- Indicate whether the donor had the HIV antigen present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

CMV

- Indicate whether the donor had the cytomegalovirus antibody present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Human T-Cell Lymphotropic Virus (HTLV) Types I, II

- Indicate whether the donor had the HTLV antibody present at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Donor HLA

HLA: human lymphocyte antigen, used in determining compatibility between donors and recipients for some transplants. Please record information for the following markers:

Donor HLA A

- Enter the donor's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number.
  (This aids in computer edit checking.)

- Acceptable values:

Codes — HLA A

Code	Description
0001	A1
0002	A2
0203	A203
0210	A210
0003	A3
0009	A9
0010	A10
0011	A11
0019	A19
0023	A23(9)
0024	A24(9)
2403	A2403
0025	A25(10)
0026	A26(10)
0028	A28
0029	A29(19)
0030	A30(19)
0031	A31(19)
0032	A32(19)
0033	A33(19)
0034	A34(10)
0036	A36
0043	A43
0066	A66(10)
0068	A68(28)
0069	A69(28)
0074	A74(19)
0080	A80
0074	A74(19)
0080	A80
0097	Typing done but no antigen identified
0098	Unknown/not available/typing not done
0099	Other — specify

Donor HLA B

- Enter the donor's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA B

Code	Description
0005	B5
0007	B7
0703	B703
0008	B8
0012	B12
0013	B13
0014	B14
0015	B15
0016	B16
0017	B17
0018	B18
0021	B21
0022	B22
0027	B27
2708	B2708
0035	B35
0037	B37
0038	B38(16)
0039	B39(16)
3901	B3901
3902	B3902
0040	B40
4005	B4005
0041	B41
0042	B42
0044	B44(12)
0045	B45(12)
0046	B46
0047	B47

Code	Description
0048	B48
0049	B49(21)
0050	B50(21)
0051	B51(5)
5102	B5102
5103	B5103
0052	B52(5)
0053	B53
0054	B54(22)
0055	B55(22)
0056	B56(22)
0057	B57(17)
0058	B58(17)
0059	B59
0060	B60(40)
0061	B61(40)
0062	B62(15)
0063	B63(15)
0064	B64(14)
0065	B65(14)
0067	B67
0070	B70
0071	B71(70)
0072	B72(70)
0073	B73
0075	B75(15)
0076	B76(15)
0077	B77(15)
0078	B78
0081	B81
0004	BW4
0006	BW6
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Donor HLA C

- Enter the patient's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA C

Code	Description
0001	CW1
0002	CW2
0003	CW3
0004	CW4
0005	CW5
0006	CW6
0007	CW7
0008	CW8
0303/0009	CW9(3)
0302/0010	CW10(3)
0304/0010	CW10(3)
0012	CW12
0014	CW14
0015	CW15
0016	CW16
0017	CW17
0018	CW18

Donor HLA DR

- Enter the donor's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DR

Code	Description
0001	DR1
0103	DR103
0002	DR2
0003	DR3
0004	DR4
0005	DR5
0006	DR6
0007	DR7
0008	DR8
0009	DR9
0010	DR10
0011	DR11(5)
0012	DR12(5)
0013	DR13(6)
0014	DR14(6)
1403	DR1403
1404	DR1404
0015	DR15(2)
0016	DR16(2)
0017	DR17(3)
0018	DR18(3)
0051	DR51
0052	DR52
0053	DR53
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Donor HLA DQ

- Enter the donor's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DQ

Code	Description
0001	DQ1
0002	DQ2
0003	DQ3
0004	DQ4
0005	DQ5
0006	DQ6
0007	DQ7
0008	DQ8
0009	DQ9
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Donor Risk Factors

Smoker

- Indicate whether the donor was a smoker at the time of donation (i.e., smoked cigarettes, cigars or a pipe in the last 3 months).
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Diabetes

- Indicate whether the donor was diagnosed with type 1 or type 2 diabetes at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hypertension

- Indicate whether the donor was receiving medication such as calcium-blocking agents, vasodilators, beta blockers, diuretics or ACE inhibitors (e.g., captopril or enalapril) in order to control hypertension at the time of donation.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hyperlipidemia

- Indicate whether the donor had elevated concentrations of any or all lipids in plasma, such as cholesterol, triglycerides and lipoproteins.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Coronary Artery Disease

- Indicate whether the donor was diagnosed with coronary artery disease at the time of donation. Coronary artery disease, also known as atherosclerosis, is the process by which the coronary arteries become narrowed or completely occluded. Ultimately, this is the underlying cause of a heart attack.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Section D — Organ-Specific Information

This section captures information on organ(s) recovered. Information must be coded for each of the organs listed below.

Organ Recovered

- Enter the code representing the organ recovered for this transplant.
- Acceptable values:

Codes — Organ Recovered

Code	Description
11	Kidney left
12	Kidney right
21	Liver left lobe
22	Liver right lobe
23	Liver lateral segment
41	Lung left lobe
42	Lung right lobe

Recipient Information

Recipient Last Name

- Enter the surname or family/last name used by the transplant recipient. Do not record titles. A single hyphen (e.g., Smith-Watson), apostrophe (e.g., O'Hara) or blank (e.g., Van Dusen) is acceptable.

Recipient Date of Birth

- Enter the transplant recipient's date of birth.
- Format: DD-MON-YYYY (e.g., 08-Apr-1958)

7 Lung/Heart–Lung Transplant Recipient Registration Form

Section A — Recipient Information

Transplant Hospital Name

- Enter the hospital name and city where the transplant occurred.
- This information is converted to a 5-digit code by CIHI. If you know the CIHI code for your hospital, you may enter this on the form instead of the hospital name and city.

Patient Last Name

- Enter the surname or family/last name used by the patient. Do not record titles. A single hyphen (e.g., Smith-Watson), apostrophe (e.g., O'Hara) or blank (e.g., Van Dusen) is acceptable.

Patient First and Middle Names

- Enter the first name or given name as well as the middle name, if applicable, used by the patient.
- If the patient is often referred to by a nickname, please indicate this in brackets (e.g., William (Bill) Smith).

Patient Former Name

- Enter the maiden (unmarried) name or former surname for any patient who has undergone a name change. (For example, Elizabeth Smith was formerly Elizabeth Jones, so "Jones" would be recorded.)

Sex

- Enter the patient's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Blood Type

- Enter the patient's blood type.
- Acceptable values:

  A

  B

  O

  AB

  U (unknown/missing response)

Patient Ethnic Origin/Race

- Enter the code representing the patient's ethnic origin/race.
- Only 1 response can be checked.
- If *other/multiracial*, record the race(s).
- Acceptable values:

Codes — Ethnic Origin/Race

Code	Description	Examples
01	Caucasian (white)	E.g., French Canadians and other people of European, Australian or Russian ancestry
02	Asian	E.g., Chinese, Japanese, Vietnamese, Korean, Taiwanese
03	Black	E.g., African, Jamaican, Haitian, Somali
05	Indian subcontinent	E.g., Indian, Pakistani, Bangladeshi
08	Pacific Islander	E.g., Filipino
09	Aboriginal	E.g., North American Indian, Métis, Inuit
10	Middle Eastern/Arabian	E.g., Saudi Arabian, Iranian, Iraqi, Jordanian, Syrian, Armenian, Algerian
11	Latin American	E.g., Caribbean, South American, Cuban
98	Unknown	n/a
99	Other/multiracial	n/a

Note
n/a: Not applicable.

Date of Birth

- Enter the patient's date of birth.
- Format: DD-MON-YYYY (e.g., 08-Apr-1958)
- This field is mandatory for proper patient identification.
- The majority of analyses are carried out according to patient age.

Health Card Number

- Enter the health insurance plan number as indicated on the health card for the patient. Please omit hyphens, blanks and version numbers, if applicable (e.g., 123123123).
- The health card number aids in identifying the patient and in avoiding duplicate patient records.
- For Manitoba residents, please use the personal health information number (PHIN).

Province/Territory of Health Card

- Enter the province/territory that is associated with the health card number provided.
- Acceptable values:

Codes — Province/Territory of Health Card

Code	Province/territory
AB	Alberta
BC	British Columbia
MB	Manitoba
NB	New Brunswick
NL	Newfoundland and Labrador
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
ON	Ontario
PE	Prince Edward Island
QC	Quebec
SK	Saskatchewan
YT	Yukon

Patient Address (City)

- Enter the town or city that is the usual place of residence for the patient at the time the transplant is performed. (Do not include a new residence for treatment purposes)
- This city is used for incidence mapping.

Patient Address (Province/Territory)

- Enter the province/territory that is the usual province/territory of residence at the time of transplant.
- This information is used for incidence mapping (location of patients at the time their transplant is performed).
- Acceptable values: see the Province/Territory of Health Card codes above.

Patient Postal Code

- Enter the postal code for the patient's address at the time of transplant.
- Format: M3C2T9
- This information is used for incidence mapping.

Recipient Height

- Enter the patient's height in centimetres at the time of transplant.
- Acceptable values: cm (conversion factor: 1 inch = 2.54 cm or 0.39 inches = 1 cm)

Recipient Weight

- Enter the patient's weight in kilograms at the time of transplant.
- Acceptable values: kg (conversion factor: 1 lb = 0.45 kg or 2.21 lbs = 1 kg)

Section B — Transplant Information

Waiting List Information

Date Patient First Placed on Waiting List

- Enter the date the patient was first placed on a waiting list for this transplant.
- Format: DD-MON-YYYY (e.g., 12-Jan-2019)
- Specific cases:

Second lung transplant: *The patient may go on a waiting list for another organ while there is still some function of the first transplant. The date the patient is returned to the waiting list is considered to be the failure date (date of chronic rejection) of the first organ.*

Medical Status at Waiting List

- Enter the code for the patient's medical status at the time he or she was first placed on the waiting list. (Medical status at the time of transplant is also recorded.)
- Acceptable values:

Codes — Medical Status

Code	Description
00	Status 0 — on hold
09	Status 1 — stable and waiting
10	Status 2 — rapid decompensation

Date Moved to Final List Status

- Indicate whether the date for the final list status is not the same as the initial list status.
- Format: DD-MON-YYYY (e.g., 12-Jan-2019)

Medical Status at Time of Transplant

- Enter the code for the patient's medical status at the time of transplant.
- Acceptable values:

Codes — Medical Status

Code	Description
09	Status 1 — stable and waiting
10	Status 2 — rapid decompensation

Date of Transplant

- Enter the date this transplant occurred.
- Format: DD-MON-YYYY (e.g., 12-Jun-2020)

Graft Number

- Indicate the sequential transplant number for the patient (e.g., the patient has had 1, 2, 3, etc. lung transplants).
- Most actuarial survival analyses are based on the transplant number, e.g., graft survival of first single-lung deceased-donor graft.

Single Lung/Bilateral Lung/Heart–Lung Flags

- Indicate whether this is a single lung, bilateral lung or heart–lung transplant.
- A patient receiving 2 lungs, whether inserted separately or en bloc, is considered to be a bilateral lung recipient (even if each lung originates from a separate donor).

Combination Transplant Flag

- Indicate, by checking the combination transplant box, if more than 1 organ was transplanted during this operation.

Specify Other Organ(s)

- Enter the other organ(s) transplanted during this combination transplant operation. Please note that Section B on the recipient registration forms for other organs should be completed as part of the patient's registration.

Primary Diagnosis

- Enter the code from the diagnosis code table that represents the primary cause of organ failure.
- Multiple diagnoses can be recorded, but only 1 primary diagnosis must be identified.
- If there is no diagnosis code that represents the primary cause of organ failure, enter the code 99 and describe the condition.
- Acceptable values:

Codes — Primary Diagnosis

Code	Description
08	Eisenmenger syndrome
11	Idiopathic pulmonary fibrosis
13	Emphysema
15	Lung failure due to congenital disease
17	Primary pulmonary hypertension
18	Chronic obstructive lung disease
19	Alpha I antitrypsin deficiency
20	Cystic fibrosis
22	Bronchiectasis
26	Sarcoidosis
27	Asbestosis
28	Bronchiolitis obliterans

Code	Description
32	Cardiomyopathy — not specified
98	Unknown
99	Other — specify

Re-Transplant Flag

- Check this box if this is a re-transplant.

Recipient Serology Status

Hepatitis BsAg

- Indicate whether the patient had the hepatitis B antigen present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis BcAb

- Indicate whether the patient tested positive for the hepatitis B antibody at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis C

- Indicate whether the patient had the hepatitis C antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Epstein–Barr

- Indicate whether the patient had the Epstein–Barr virus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

HIV

- Indicate whether the patient had the HIV antigen present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

CMV

- Indicate whether the patient had the cytomegalovirus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Current Class I Panel Reactive Antibody (PRA) Level

- Enter the current percentage PRA at the time of transplant.
- Acceptable range: 0% to 100%

Peak Class I PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Current Class II PRA Level

- Enter the current percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Peak Class II PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Methods Used to Identify PRA Level

- The most sensitive method should be entered if more than 1 method is used by the laboratory.
- Acceptable values:

  CDC

  ELISA

  Flow

  Luminex

  Other

Pulmonary Vascular Resistance (PVR) Reactivity

- Indicate whether the patient has reactive pulmonary vasculature.
- Acceptable values:

  0 = Non-reactive

  1 = Reactive

PVR

- Indicate the patient’s pulmonary resistance at the time of transplant.
- Measured in Wood units.
- Acceptable values:

  1 = Fewer than 4 Wood units

  2 = 4 to 6 Wood units

  3 = More than 6 Wood units

  8 = Not done

  9 = Unknown/missing response

Standard Crossmatch Test Result

- Indicate whether the standard crossmatch test on T-cell lymphocytes or peripheral blood lymphocytes (PBL) was positive or negative at 22°C or 37°C.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Recipient HLA

HLA: human lymphocyte antigen (antigenic markers used in determining compatibility between donors and recipients for some transplants). Please record information for the following markers:

Recipient HLA A

- Enter the patient's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA A

Code	Description
0001	A1
0002	A2
0203	A203
0210	A210
0003	A3
0009	A9
0010	A10
0011	A11
0019	A19
0023	A23(9)
0024	A24(9)
2403	A2403
0025	A25(10)
0026	A26(10)

Code	Description
0028	A28
0029	A29(19)
0030	A30(19)
0031	A31(19)
0032	A32(19)
0033	A33(19)
0034	A34(10)
0036	A36
0043	A43
0066	A66(10)
0068	A68(28)
0069	A69(28)
0074	A74(19)
0080	A80
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA B

- Enter the patient's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA B

Code	Description
0005	B5
0007	B7
0703	B703
0008	B8
0012	B12
0013	B13
0014	B14
0015	B15
0016	B16

Code	Description
0017	B17
0018	B18
0021	B21
0022	B22
0027	B27
2708	B2708
0035	B35
0037	B37
0038	B38(16)
0039	B39(16)
3901	B3901
3902	B3902
0040	B40
4005	B4005
0041	B41
0042	B42
0044	B44(12)
0045	B45(12)
0046	B46
0047	B47
0048	B48
0049	B49(21)
0050	B50(21)
0051	B51(5)
5102	B5102
5103	B5103
0052	B52(5)
0053	B53
0054	B54(22)
0055	B55(22)
0056	B56(22)
0057	B57(17)
0058	B58(17)
0059	B59
0060	B60(40)
0061	B61(40)
0062	B62(15)
0063	B63(15)

Code	Description
0064	B64(14)
0065	B65(14)
0067	B67
0070	B70
0071	B71(70)
0072	B72(70)
0073	B73
0075	B75(15)
0076	B76(15)
0077	B77(15)
0078	B78
0081	B81
0004	BW4
0006	BW6
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA C

- Enter the patient's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA C

Code	Description
0001	CW1
0002	CW2
0003	CW3
0004	CW4
0005	CW5
0006	CW6
0007	CW7
0008	CW8
0303/0009	CW9(3)
0302/0010	CW10(3)

Code	Description
0304/0010	CW10(3)
0012	CW12
0014	CW14
0015	CW15
0016	CW16
0017	CW17
0018	CW18

Recipient HLA DR

- Enter the patient's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DR

Code	Description
0001	DR1
0103	DR103
0002	DR2
0003	DR3
0004	DR4
0005	DR5
0006	DR6
0007	DR7
0008	DR8
0009	DR9
0010	DR10
0011	DR11(5)
0012	DR12(5)
0013	DR13(6)
0014	DR14(6)
1403	DR1403
1404	DR1404
0015	DR15(2)
0016	DR16(2)

Code	Description
0017	DR17(3)
0018	DR18(3)
0051	DR51
0052	DR52
0053	DR53
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA DQ

- Enter the patient's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DQ

Code	Description
0001	DQ1
0002	DQ2
0003	DQ3
0004	DQ4
0005	DQ5
0006	DQ6
0007	DQ7
0008	DQ8
0009	DQ9
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Risk Factors — Lung, Heart–Lung

Please check 1 of the acceptable values: N = No, Y = Yes or U = Unknown.

Renal Dysfunction

- Indicate whether the patient had renal dysfunction at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Liver Dysfunction

- Indicate whether the patient had liver dysfunction at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Diabetes Type 1

- Indicate whether the patient was diagnosed with type 1 diabetes at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Type 1 diabetes: *Occurs when the pancreas no longer produces any, or produces very little, insulin. Usually develops in childhood or adolescence and affects about 10% of people with diabetes (Canadian Diabetes Association).*

Diabetes Type 2

- Indicate whether the patient was diagnosed with type 2 diabetes at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Type 2 diabetes: *Occurs when the pancreas does not produce enough insulin to meet the body's needs or the insulin is not metabolized effectively. Usually occurs later in life and affects 90% of people with diabetes (Canadian Diabetes Association).*

Hypertension

- Indicate whether the patient was receiving medication such as calcium-blocking agents, vasodilators, beta blockers, diuretics or ACE inhibitors (e.g., captopril or enalapril) in order to control hypertension at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Mechanical Ventilation

- Indicate whether the patient was mechanically ventilated (on a respirator) at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Non-Ambulatory Status

- Indicate whether the patient was confined to bed at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

On Anticoagulants

- Indicate whether the patient was on therapeutic anticoagulants at the time of the lung transplant (e.g., Coumadin or heparin).
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Other Organ Dysfunction

- Indicate whether the patient was suffering from disease in 1 or more organs, other than the lung, at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Previous Thoracic Surgery

- Indicate whether the patient had previous thoracic surgery prior to this lung transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Multi-Resistant Pathogen

- Indicate whether the patient suffered from 1 or more resistant pathogens at the time of transplant (organisms resistant to antibiotics).
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Section C — Donor Information

Information on surname stem, donor type, age and sex is used to accurately link the recipient information to the donor profile information as provided by the organ procurement organization. Only these fields need to be completed on the transplant forms for locally transplanted donors, as the complete information is provided on the Deceased Donor Profile form.

In the case of a living donor transplant, please check the living donor flag and complete a Living Donor Profile. This profile should be attached to the transplant recipient's registration form for submission to CORR. If the transplant is a living donor lobar lung transplant, please complete Living Donor Profiles for both donors. The Living Donor Profile should also be completed for domino donors.

Donor Type

- Enter the code representing the type of donor for this transplant.
- Acceptable values:

Codes — Donor Type

Code	Description
01	Deceased donor
12	Domino donor

Program Organizing Organ Recovery

- Enter the name of the organ procurement organization responsible for organizing the recovery of organs from the donor (i.e., where the donor originated).
- For out-of-country donors, the name of the country is sufficient (e.g., U.S.).
- The program name is converted to a numeric code by CORR staff.

Recovery Program Donor Number

- Enter the local identification number used for the donor by the identifying organ recovery program. This number is used when linking recipient information to donor profile information, and when requesting clarification of information from the local centre. (For example, if the organ used was from another province/territory, the original recovery program donor number **must** be used.)

Donor Organ

- Check whether the donor donated right lung, left lung, heart–lung or both lungs.

Surname Stem

- Enter the first 3 letters of the donor’s surname. In this way, confidentiality issues that may be encountered by using the full name are avoided.
- The surname stem allows the recipient record to be accurately linked with the correct donor profile record, especially in the case of out-of-province/-territory donors.

Age of Donor

- Enter the donor's age at the time of donation.
- Acceptable range:

  Age in **years** for patients 2 years or older (002 to 130)

  Age in **months** for patients younger than 24 months (001 to 023)

  Age in **days** for patients younger than 31 days (001 to 030)

  Newborns = 000

Donor Sex

- Enter the donor's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Donor HLA

HLA: human lymphocyte antigen, used in determining compatibility between donors and recipients for some transplants. Please record information for the following markers:

Donor HLA A

- Enter the donor's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number.
  (This aids in computer edit checking.)
- Acceptable values: see HLA A codes as specified in the recipient section of this chapter.

Donor HLA B

- Enter the donor's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number.
  (This aids in computer edit checking.)
- Acceptable values: see HLA B codes as specified in the recipient section of this chapter.

Donor HLA C

- Enter the donor's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA C codes as specified in the recipient section of this chapter.

Donor HLA DR

- Enter the donor's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DR codes as specified in the recipient section of this chapter.

Donor HLA DQ

- Enter the donor's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DQ codes as specified in the recipient section of this chapter.

Date of Cross Clamp

- Enter the date the organs were recovered and flushed with a specially prepared, ice-cold solution. Please note that the cross-clamp date is the same as the date of organ recovery.
- Format: DD-MON-YYYY (e.g., 12-Jun-2020)

Cross-Clamp Time

- Enter the time at which the organ was recovered and flushed with a specially prepared, ice-cold solution.
- Format: HH-MM (e.g., 09-32)

Recipient Outcome

(Recipient Information: Same as Section A of Lung/Heart–Lung Transplant Recipient Registration Form)

This section collects follow-up information, which may be available at the time the transplant is registered.

Updates on patient status with respect to transplant failures and deaths, loss to follow-up and patient transfers will be collected annually or at intervals throughout the year.

Alternatively, the centre may provide computer printouts of all failures and deaths and the associated causes, as well as information on patient transfers and loss to follow-up, to the CORR office throughout the year. CORR data specifications must be used in this case.

Hospital Followed At

- Enter the name of the hospital where the patient is receiving transplant follow-up, if different from the transplant hospital.
- Provide the date associated with the transfer (date of event).
- This alerts CORR staff to send all future requests for information on the patient to the follow-up hospital and allows accurate tracking of the patient throughout the course of his or her treatment.

Patient Status

- Indicate whether the patient is alive, dead, transferred or lost to follow-up.
- Provide the date associated with the event indicated (alive as of what date, etc.).

If Recipient Is Deceased

Died With a Functioning Graft

- Indicate whether the patient died with a functioning graft.

Died Due to Graft Failure

- Indicate whether the patient died due to a graft failure.

Cause of Death

- Please enter the date and cause of death.
- Acceptable values:

Codes — Cause of Death

Code	Description
Generic	
00	Cause of death uncertain, not determined
Cardiac	
11	Myocardial ischemia and infarction
12	Hyperkalemia
13	Hemorrhagic pericarditis
14	Other causes of cardiac failure
15	Cardiac arrest, cause unknown
16	Hypertensive cardiac failure
17	Hypokalemia
18	Fluid overload
Vascular	
21	Pulmonary embolus
22	Cerebrovascular accident
24	Hemorrhage from graft site
25	Hemorrhage from vascular access or dialysis circuit
26	Ruptured vascular aneurysm (not codes 22 and 23)
27	Hemorrhage from surgery (not codes 23 to 26)
28	Other hemorrhage (not codes 23 to 27)
55	Vascular thrombosis
56	Pulmonary vein stenosis
57	Stent/balloon complication
Infection	
03	Infection (bacterial)
04	Infection (viral)
05	Infection (fungal)
06	Cytomegalovirus
07	Epstein–Barr virus
08	Pneumocystic carinii pneumonia (PCP)
09	Protozoal/parasitic infection (includes toxoplasmosis)
10	Wound infection
34	Infections elsewhere (except viral hepatitis; see codes 41 and 42)

Code	Description
Infection (continued)	
35	Septicemia/sepsis
36	Tuberculosis (lung)
37	Tuberculosis (elsewhere)
38	Generalized viral infection
39	Peritonitis (not code 70)
Renal disease	
47	Acute renal failure
48	Chronic renal failure
61	Uremia caused by kidney transplant
Liver disease	
41	Liver, due to hepatitis B virus
42	Liver, other viral hepatitis
43	Liver, drug toxicity
44	Cirrhosis, not viral
45	Cystic liver disease
46	Liver failure, cause unknown
74	Liver failure due to hepatitis C virus
Gastrointestinal	
20	Acute gastroenteritis with dehydration
02	Gastrointestinal tumour with or without perforation
23	Gastrointestinal hemorrhage
29	Mesenteric infarction
62	Pancreatitis
68	Perforation of peptic ulcer
70	Sclerosing (or adhesive) peritoneal disease
72	Perforation of colon/small bowel
Social	
50	Drug abuse (excludes alcohol abuse)
51	Patient refused further treatment
52	Suicide
53	Therapy ceased for any other reason
54	Alcohol abuse
Accident	
81	Accident related to treatment
82	Accident unrelated to treatment

Code	Description
Miscellaneous	
30	Hypertension
40	Diabetic keto acidosis (DKA)
64	Cachexia
66	Malignant disease possibly induced by immunosuppressive therapy
67	Malignant disease except those of code 66
69	Dementia
90	Multi-system failure
99	Other identified causes of death, specify
Respiratory	
19	Acute respiratory distress syndrome (ARDS)
31	Pulmonary infection (bacterial)
32	Pulmonary infection (viral)
33	Pulmonary infection (fungal)
49	Bronchiolitis obliterans
Metabolic	
59	Drug-related toxicity
Hematologic	
63	Bone marrow depression
71	Thrombocytopenia
73	Thrombosis
Neurologic	
75	Drug neurotoxicity
76	Status epilepticus
77	Neurologic infection

Died Due to Graft Failure

- If the patient's death can be attributed to transplant failure (e.g., rejection), complete the Date and Cause of Graft Failure fields.
- Enter the date and cause of death for the patient. See the codes above in the Cause of Death table.

Date of Graft Failure

- Enter the date the transplanted organ ceased to function adequately.
- Format: DD-MON-YYYY (e.g., 26-Jan-2020)
- The failure date must be equal to or greater than the transplant date.

Cause of Graft Failure

- Check the code representing the cause of graft failure (e.g., code 64 for chronic rejection).
- Acceptable values:

Codes — Cause of Graft Failure

Code	Description
00	Uncertain/unknown
01	Hyperacute rejection
11	Primary non-function
18	De novo malignancy
19	Graft coronary artery disease
23	Vascular thrombosis (graft)
24	Bronchiolitis obliterans
25	Pulmonary hypertension/cor pulmonale
28	Surgical complication
29	Large airway complications
37	Acute respiratory distress syndrome (ARDS)
63	Acute rejection
64	Chronic rejection
67	Recurrent disease
68	Infection and rejection
69	Infection of graft
99	Other cause of graft failure (describe)

8 Pancreas Transplant Recipient Registration Form

Section A — Recipient Information

Transplant Hospital Name

- Enter the hospital name where this transplant occurred.
- This information is converted to a 5-digit code by CIHI. If you know the CIHI code for your hospital, you may enter this on the form instead of the hospital name and city.

Patient Last Name

- Enter the surname or family/last name used by the patient. Do not record titles. A single hyphen (e.g., Smith-Watson), apostrophe (e.g., O'Hara) or blank (e.g., Van Dusen) is acceptable.

Patient First and Middle Names

- Enter the first name or given name as well as the middle name, if applicable, used by the patient.
- If the patient is often referred to by a nickname, please indicate this in brackets (e.g., William (Bill) Smith).

Patient Former Name

- Enter the maiden (unmarried) name or former surname for any patient who has undergone a name change. (For example, Elizabeth Smith was formerly Elizabeth Jones, so "Jones" would be recorded.)

Sex

- Enter the patient's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Blood Type

- Enter the patient's blood type.
- Acceptable values:

  A

  B

  O

  AB

  U (unknown/missing response)

Patient Ethnic Origin/Race

- Enter the code representing the patient's ethnic origin/race.
- Only 1 response can be checked.
- If *other/multiracial*, record the race(s).
- Acceptable values:

Codes — Ethnic Origin/Race

Code	Description	Examples
01	Caucasian (white)	E.g., French Canadians and other people of European, Australian or Russian ancestry
02	Asian	E.g., Chinese, Japanese, Vietnamese, Korean, Taiwanese
03	Black	E.g., African, Jamaican, Haitian, Somali
05	Indian subcontinent	E.g., Indian, Pakistani, Bangladeshi
08	Pacific Islander	E.g., Filipino
09	Aboriginal	E.g., North American Indian, Métis, Inuit
10	Middle Eastern/Arabian	E.g., Saudi Arabian, Iranian, Iraqi, Jordanian, Syrian, Armenian, Algerian
11	Latin American	E.g., Caribbean, South American, Cuban
98	Unknown	n/a
99	Other/multiracial	n/a

Note
n/a: Not applicable.

Date of Birth

- Enter the patient's date of birth.
- Format: DD-MON-YYYY (e.g., 08-Apr-1958)
- This field is mandatory for proper patient identification.
- The majority of analyses are carried out according to patient age.

Health Card Number

- Enter the health insurance plan number as indicated on the health card for the patient. Please omit hyphens, blanks and version numbers, if applicable (e.g., 123123123).
- The health card number aids in identifying the patient and in avoiding duplicate patient records.
- For Manitoba residents, please use the personal health information number (PHIN).

Province/Territory of Health Card

- Enter the province/territory that is associated with the health card number provided.

Codes — Province/Territory of Health Card

Code	Province/territory
AB	Alberta
BC	British Columbia
MB	Manitoba
NB	New Brunswick
NL	Newfoundland and Labrador
NS	Nova Scotia
NT	Northwest Territories
NU	Nunavut
ON	Ontario
PE	Prince Edward Island
QC	Quebec
SK	Saskatchewan
YT	Yukon

Patient Address (City)

- Enter the town or city that is the usual place of residence for the patient at the time the transplant is performed. (Do not include a new residence for treatment purposes.)
- This city is used for incidence mapping.

Patient Address (Province/Territory)

- Enter the province/territory that is the usual province/territory of residence at the time the transplant is performed.
- This information is used for incidence mapping (the location of the patient at the time his or her pancreas failure began).
- Acceptable values: see Province/Territory of Health Card codes above.

Patient Postal Code

- Enter the postal code for the patient's address at the time of transplant.
- Format: M3C2T9
- This information is used for incidence mapping.

Height

- Enter the patient's height in centimetres at the time of transplant.
- Acceptable values: cm (conversion factor: 1 inch = 2.54 cm or 0.39 inches = 1 cm)

Weight

- Enter the patient's weight in kilograms at the time of transplant.
- Acceptable values: kg (conversion factor: 1 lb = 0.45 kg or 2.21 lbs = 1 kg)

Section B — Transplant Information

Waiting List Information

Date Patient First Placed on Waiting List

- Enter the date the patient was first placed on a waiting list for this transplant.
- Format: DD-MON-YYYY (e.g., 12-Jan-2019)

Date of Transplant

- Enter the date this transplant occurred.
- Format: DD-MON-YYYY (e.g., 12-Jun-2020)

Pancreas Transplant Only Flag

- Check this box if the patient is receiving only a pancreas and no other organ at this time. If this is a combination transplant, please check the combination transplant box.

Combination Transplant Flag

- Indicate, by checking the combination transplant box, whether more than 1 organ was transplanted during this operation.

Specify Other Organ(s)

- Enter the other organ(s) transplanted during this combination transplant operation.

Type of Pancreas

- Enter the code representing the type of pancreas.
- Acceptable values:

Codes — Type of Pancreas

Code	Description
50	Whole pancreas
51	Segmental — no polymer occlusion
52	Islet cells
53	Exocrine drainage (enteric)
54	Exocrine drainage (urinary)
55	Wirsung obstruction with polymer

Primary Diagnosis

- Enter the code representing the primary diagnosis that represents the primary cause of organ failure. Only 1 code is allowed.
- If there is no diagnosis code that represents the primary cause of organ failure, enter the code 99 and describe the condition.
- Acceptable values:

Codes — Primary Diagnosis

Code	Description
01	Chronic pancreatitis
02	Diabetes type 1
03	Pancreatectomy
04	Cystic fibrosis
05	Trauma
06	Diabetes type 2
07	Pancreatic cancer
08	Bile duct cancer
98	Unknown
99	Other — specify

Re-Transplant

- Check this box if this is a re-transplant.

Recipient Serology Status at Time of Transplant

Hepatitis BsAg

- Indicate whether the patient had the hepatitis B antigen (BsAg) present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis BcAb

- Indicate whether the patient tested positive for the hepatitis B antibody (BcAb) at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Hepatitis C

- Indicate whether the patient had the hepatitis C antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Epstein–Barr

- Indicate whether the patient had the Epstein–Barr virus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

HIV

- Indicate whether the patient had the HIV antigen present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

CMV

- Indicate whether the patient had the cytomegalovirus antibody present at the time of transplant.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Current Class I Panel Reactive Antibody (PRA) Level

- Enter the current percentage PRA at the time of transplant.
- Acceptable range: 0% to 100%

Peak Class I PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Current Class II PRA Level

- Enter the current percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Peak Class II PRA Level

- Enter the highest percentage PRA measured for the patient.
- Acceptable range: 0% to 100%

Methods Used to Identify PRA Level

- The most sensitive method should be entered if more than 1 method is used by the laboratory.
- Acceptable values:

  CDC

  ELISA

  Flow

  Luminex

  Other

Standard Crossmatch Test Result

- Indicate whether the standard crossmatch test on T-lymphocytes or peripheral blood lymphocytes (PBL) was positive or negative at 22°C or 37°C.
- Acceptable values:

  P = Positive

  N = Negative

  U = Unknown/missing response

Recipient HLA

HLA: human lymphocyte antigen (antigenic markers used in determining compatibility between donors and recipients for some transplants). Please record information for the following markers:

HLA A

- Enter the patient's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA A

Code	Description
0001	A1
0002	A2
0203	A203
0210	A210
0003	A3
0009	A9
0010	A10
0011	A11
0019	A19
0023	A23(9)
0024	A24(9)
2403	A2403
0025	A25(10)
0026	A26(10)
0028	A28
0029	A29(19)
0030	A30(19)
0031	A31(19)
0032	A32(19)
0033	A33(19)
0034	A34(10)
0036	A36
0043	A43

Code	Description
0066	A66(10)
0068	A68(28)
0069	A69(28)
0074	A74(19)
0080	A80
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

HLA B

- Enter the patient's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA B

Code	Description
0005	B5
0007	B7
0703	B703
0008	B8
0012	B12
0013	B13
0014	B14
0015	B15
0016	B16
0017	B17
0018	B18
0021	B21
0022	B22
0027	B27
2708	B2708
0035	B35
0037	B37
0038	B38(16)

Code	Description
0039	B39(16)
3901	B3901
3902	B3902
0040	B40
4005	B4005
0041	B41
0042	B42
0044	B44(12)
0045	B45(12)
0046	B46
0047	B47
0048	B48
0049	B49(21)
0050	B50(21)
0051	B51(5)
5102	B5102
5103	B5103
0052	B52(5)
0053	B53
0054	B54(22)
0055	B55(22)
0056	B56(22)
0057	B57(17)
0058	B58(17)
0059	B59
0060	B60(40)
0061	B61(40)
0062	B62(15)
0063	B63(15)
0064	B64(14)
0065	B65(14)
0067	B67
0070	B70
0071	B71(70)
0072	B72(70)
0073	B73
0075	B75(15)
0076	B76(15)

Code	Description
0077	B77(15)
0078	B78
0081	B81
0004	BW4
0006	BW6
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Recipient HLA C

- Enter the patient's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA C

Code	Description
0001	CW1
0002	CW2
0003	CW3
0004	CW4
0005	CW5
0006	CW6
0007	CW7
0008	CW8
0303/0009	CW9(3)
0302/0010	CW10(3)
0304/0010	CW10(3)
0012	CW12
0014	CW14
0015	CW15
0016	CW16
0017	CW17
10018	CW18

HLA DR

- Enter the patient's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DR

Code	Description
0001	DR1
0103	DR103
0002	DR2
0003	DR3
0004	DR4
0005	DR5
0006	DR6
0007	DR7
0008	DR8
0009	DR9
0010	DR10
0011	DR11(5)
0012	DR12(5)
0013	DR13(6)
0014	DR14(6)
1403	DR1403
1404	DR1404
0015	DR15(2)
0016	DR16(2)
0017	DR17(3)
0018	DR18(3)
0051	DR51
0052	DR52
0053	DR53
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

HLA DQ

- Enter the patient's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values:

Codes — HLA DQ

Code	Description
0001	DQ1
0002	DQ2
0003	DQ3
0004	DQ4
0005	DQ5
0006	DQ6
0007	DQ7
0008	DQ8
0009	DQ9
9997	Typing done but no antigen identified
9998	Unknown/not available/typing not done
9999	Other — specify

Graft Number

- Indicate the sequential transplant number for the patient (e.g., the patient has had 1, 2, 3, etc. pancreas transplant operations).
- Most actuarial survival analyses are based on the transplant number, e.g., graft survival of first pancreas deceased-donor graft.

Risk Factors — Pancreas

Cardiovascular Disease

- Indicate whether the patient suffered from cardiovascular disease at the time of transplant.
- Ischemic heart disease is the presence of previous myocardial infarction, history of angina or radiological evidence of significant coronary artery disease (shown by 2D echocardiography, thallium scan or coronary angiography).
- Valvular heart disease or other heart disease is the presence of arrhythmia, cardiomyopathy, etc.

- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Kidney Failure

- Indicate whether the patient suffered from kidney failure at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Cerebrovascular Disease

- Indicate whether the patient had a cerebrovascular event such as a transient ischemic attack, cerebral infarct, cerebral hemorrhage, stroke or CVA prior to this transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Dialysis Required

- Indicate whether the patient was on dialysis at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Peripheral Vascular Disease

- Indicate whether the patient has been described as having intermittent claudication at rest or on exercise or had aortal–femoral bypass surgery or amputation of toes, lower legs, etc., prior to this transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Diabetic Nephropathy

- Indicate whether the patient showed signs of diabetic nephropathy at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Diabetic Retinopathy

- Indicate whether the patient suffered from diabetic retinopathy at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Diabetic Neuropathy

- Indicate whether the patient suffered from diabetic neuropathy at the time of transplant.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Family History of Diabetes

- Indicate whether there is a history of diabetes in the patient’s family.
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

- Indicate whether patient requires insulin
- Acceptable values:

  N = No

  Y = Yes

  U = Unknown/missing response

Number of Years on Insulin

- Enter the number of years the patient has been receiving insulin prior to this transplant.
- Acceptable values: 0 to 99, blank

PANCREAS ONLY

Warm Ischemic Time

- Enter the time in minutes between clamping the major vessels (usually the aorta) or the time of cardiac arrest and the initiation of cold flushing.
- Enter 0 for in situ perfusion.
- Acceptable range: pancreas: 0 minutes to 99 minutes

Re-Warm Time

- Enter the time in minutes between removal of the organ from cold storage and when the clamps are released, allowing blood flow.
- Also known as re-perfusion time or anastomosis time.
- Acceptable range: pancreas: 15 minutes to 60 minutes

Cold Ischemic Time

- Enter the time in minutes from initiation of cooling (including in situ cooling) to removal of the organ from cold storage.
- Acceptable range: pancreas: 15 minutes to 720 minutes (12 hours)

ISLET CELL ONLY

Cold Ischemic Time

- Enter the time in minutes from the cross clamp to the time the islet cells reached the laboratory.
- Enter 0 for in situ perfusion.

Digestive Time

- Enter the time in hours that the pancreas is immersed with enzyme.
- Acceptable range: islet cells: 2 hours to 48 hours

Culture Time

- Enter the time in hours that the islet cells spend in culture.
- Acceptable range: islet cells: 2 hours to 48 hours

Total Ischemic Time

- Enter the time in minutes from the time of cross-clamping until transplantation is completed.

Section C — Donor Information

Information on surname stem, donor type, age and sex is used to accurately link the information to the donor profile information as provided by the organ procurement organization. Only these fields need to be completed on the transplant forms for locally transplanted donors, as the complete information is provided on the Deceased Donor Profile form.

In the case of living donor transplants, please check the living donor flag and complete a Living Donor Profile. This profile should be attached to the transplant registration form for submission to CORR. The Living Donor Profile should also be completed for domino donors.

Donor Type

- Enter the code representing the type of donor for this transplant.
- Acceptable values:

Codes — Donor Type

Code	Description
01	Deceased donor
12	Domino donor
13	Autograft (islet)
14	Fetal tissue (islet cells)

Program Organizing Organ Recovery

- Enter the name of the organ procurement organization responsible for organizing the recovery of organs from the donor (i.e., where the donor originated).
- For out-of-country donors, the name of the country is sufficient (e.g., U.S.).
- The program name is converted to a numeric code by CORR staff.

Recovery Program Donor Number

- Enter the local identification number used for this donor by the identifying organ recovery program. This number is used when linking information to donor profile information and when requesting clarification of information from the local centre. (For example, if the organ used was from another province/territory, the original recovery program donor number **must** be used.)

Surname Stem

- Enter the first 3 letters of the donor's surname. In this way, confidentiality issues that may be encountered by using the full name are avoided.
- The surname stem allows this record to be accurately linked with the correct donor profile record, especially in the case of out-of-province/-territory donors.

Age of Donor

- Enter the donor's age at the time of donation.
- Acceptable range:

  Age in **years** for patients 2 years or older (002 to 130)

  Age in **months** for patients younger than 24 months (001 to 023)

  Age in **days** for patients younger than 31 days (001 to 030)

  Newborns = 000

Donor Sex

- Enter the donor's biological sex.
- Acceptable values:

  M = Male

  F = Female

  O = Other

Donor HLA

HLA: human lymphocyte antigen, used in determining compatibility between donors and patients for some transplants. Please record information for the following markers:

Donor HLA A

- Enter the donor's HLA A1 and A2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA A codes as specified in the recipient section of this chapter.

Donor HLA B

- Enter the donor's HLA B1 and B2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA B codes as specified in the recipient section of this chapter.

Donor HLA C

- Enter the donor's HLA C.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA C codes as specified in the recipient section of this chapter.

Donor HLA DR

- Enter the donor's HLA DR1 and DR2 loci.
- If information is available on antigen splits, please use this information.
- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DR codes as specified in the recipient section of this chapter.

Donor HLA DQ

- Enter the donor's HLA DQ1 and DQ2 loci.
- If information is available on antigen splits, please use this information.

- Record the lower HLA number first, followed by the higher number. (This aids in computer edit checking.)
- Acceptable values: see HLA DQ codes as specified in the recipient section of this chapter.

Date of Cross Clamp

- Enter the date the organs were recovered and flushed with a specially prepared, ice-cold solution. Please note that the cross-clamp date is the same as the date of organ recovery.
- Format: DD-MON-YYYY (e.g., 14-Feb-2020)

Cross-Clamp Time

- Enter the time at which the organ was recovered and flushed with a specially prepared, ice-cold solution.
- Format: HH:MM (e.g., 15:22)

Recipient Outcome

(Recipient Information: Same as Section A of Pancreas Transplant Recipient Registration Form)

This section collects follow-up information, which may be available at the same time that the transplant is registered.

Updates on patient status with respect to transplant failures and deaths, loss to follow-up and patient transfers will be collected annually or at intervals throughout the year, using computer listings on which to record the updates.

Alternatively, the centre may provide computer printouts of all failures and deaths and the associated causes, as well as information on patient transfers and loss to follow-up, to the CORR office throughout the year. CORR data specifications must be used in this case.

Hospital Followed At

- Enter the name of the hospital where the patient is receiving transplant follow-up.
- This alerts CORR staff to send all future requests for information on the patient to the follow-up hospital and allows accurate tracking of the patient throughout the course of his or her treatment.

Patient Status

- Indicate whether the patient is alive, dead, transferred or lost to follow-up.
- Provide the date associated with the event indicated (alive as of what date, etc.).
- Format: DD-MON-YYYY (e.g., 23-Jan-2020)

If Recipient Is Deceased

Died With a Functioning Graft

- Indicate whether the patient died with a functioning graft.

Died Due to Graft Failure

- Indicate whether the patient died due to graft failure.

Cause of Death

- Please enter the date and cause of death.
- Acceptable values:

Codes — Cause of Death

Code	Description
Generic	
00	Cause of death uncertain, not determined
Cardiac	
11	Myocardial ischemia and infarction
12	Hyperkalemia
13	Hemorrhagic pericarditis
14	Other causes of cardiac failure
15	Cardiac arrest, cause unknown
16	Hypertensive cardiac failure
17	Hypokalemia
18	Fluid overload
Vascular	
21	Pulmonary embolus
22	Cerebrovascular accident
24	Hemorrhage from graft site
25	Hemorrhage from vascular access or dialysis circuit
26	Ruptured vascular aneurysm (not codes 22 and 23)
27	Hemorrhage from surgery (not codes 23 to 26)

Code	Description
Vascular (continued)	
28	Other hemorrhage (not codes 23 to 27)
55	Vascular thrombosis
56	Pulmonary vein stenosis
57	Stent/balloon complication
Infection	
03	Infection (bacterial)
04	Infection (viral)
05	Infection (fungal)
06	Cytomegalovirus
07	Epstein–Barr virus
08	Pneumocystic carinii pneumonia (PCP)
09	Protozoal/parasitic infection (includes toxoplasmosis)
10	Wound infection
34	Infections elsewhere (except viral hepatitis; see codes 41 and 42)
35	Septicemia/sepsis
36	Tuberculosis (lung)
37	Tuberculosis (elsewhere)
38	Generalized viral infection
39	Peritonitis (not code 70)
Renal disease	
47	Acute renal failure
48	Chronic renal failure
61	Uremia caused by kidney transplant failure
Liver disease	
41	Liver, due to hepatitis B virus
42	Liver, other viral hepatitis
43	Liver, drug toxicity
44	Cirrhosis, not viral
45	Cystic liver disease
46	Liver failure, cause unknown
74	Liver, due to hepatitis C virus
Gastrointestinal	
02	Gastrointestinal tumour with or without perforation
20	Acute gastroenteritis with dehydration
23	Gastrointestinal hemorrhage
29	Mesenteric infarction
62	Pancreatitis

Code	Description
Gastrointestinal (continued)	
68	Perforation of peptic ulcer
70	Sclerosing (or adhesive) peritoneal disease
72	Perforation of colon/small bowel
Social	
50	Drug abuse (excludes alcohol abuse)
51	Patient refused further treatment
52	Suicide
53	Therapy ceased for any other reason
54	Alcohol abuse
Accident	
81	Accident related to treatment
82	Accident unrelated to treatment
Miscellaneous	
30	Hypertension
40	Diabetic keto acidosis (DKA)
64	Cachexia
66	Malignant disease possibly induced by immunosuppressive therapy
67	Malignant disease except those of code 66
69	Dementia
90	Multi-system failure
99	Other identified causes of death — specify
Respiratory	
19	Acute respiratory distress syndrome (ARDS)
31	Pulmonary infection (bacterial)
32	Pulmonary infection (viral)
33	Pulmonary infection (fungal)
49	Bronchiolitis obliterans
Metabolic	
59	Drug-related toxicity
Hematologic	
63	Bone marrow depression
71	Thrombocytopenia
73	Thrombosis
Neurologic	
75	Drug neurotoxicity
76	Status epilepticus
77	Neurologic infection

Died Due to Graft Failure

- If the patient's death can be attributed to transplant failure (e.g., rejection), complete the Date and Cause of Graft Failure fields.
- Enter the date and cause of death for the patient. See codes above.

Date of Graft Failure

- Enter the date that the transplanted organ ceased to function adequately.
- Format: DD-MON-YYYY (e.g., 26-Jan-2020)

The failure date must be equal to or greater than the transplant date.

Cause of Graft Failure

- Check the code representing the cause of graft failure (e.g., code 64 for chronic rejection).
- Acceptable values:

Codes — Cause of Graft Failure

Code	Description
00	Uncertain/unknown
01	Hyperacute rejection
11	Primary non-function
18	De novo malignancy
20	Pancreatitis
23	Vascular thrombosis (graft)
28	Surgical complications
63	Acute rejection
64	Chronic rejection
67	Recurrent disease
68	Infection and rejection
69	Infection of graft
99	Other cause of graft failure — describe

Appendices

Appendix A — Participating transplant hospitals

A list of participating transplant centres in Canada as of January 1, 2020, is available on the CORR web page.

Symbols

- **Kid:** kidney transplants
- **Liv:** liver transplants
- **Hea:** heart transplants
- **Ht–Lu:** heart–lung transplants
- **Lun:** lung transplants
- **Kid–Pan:** kidney–pancreas transplants
- **Pan:** pancreas transplants
- **Bow:** intestine transplants
- **Clus:** cluster transplants

Hospital code	Institution	Symbol
20085	Queen Elizabeth II Health Sciences Centre	Kid, Hea, Liv, Kid–Pan, Pan
20086	IWK Grace Health Centre	Kid
40003	Royal Victoria Hospital McGill University Health Centre	Kid, Liv, Hea, Ht–Lu, Kid–Pan, Pan
40006	Montreal Children's Hospital McGill University Health Centre	Kid
40070	C.H. universitaire de Sherbrooke — Hôpital Fleurimont	Kid
40115	Institut universitaire de cardiologie et de pneumologie de Québec (IUCPQ)	Hea
40118	Hôpital Maisonneuve-Rosemont	Kid
40120	C.H. de l'université de Montréal — Hôpital Notre-Dame	Kid, Hea, Lun, Ht–Lu, Kid–Pan, Pan
40130	C.H. de l'université de Montréal — St-Luc	Liv
40135	CHU Sainte-Justine	Kid, Liv, Hea
40142	C.H. universitaire de Québec	Kid
40149	Institut de Cardiologie de Montréal	Hea

Hospital code	Institution	Symbol
54831	Kingston General Hospital	Kid
51406	Hospital for Sick Children	Kid, Liv, Hea, Lun
51444	St. Michael's Hospital	Kid
52003	St. Joseph's Health Care System	Kid
53850	London Health Sciences Centre — University Campus	Kid, Liv, Hea, Ht–Lu, Kid–Pan, Pan
53910	Toronto General Hospital — University Health Network	Kid, Liv, Hea, Ht–Lu, Lun, Kid–Pan, Pan, Clus
54051	The Ottawa Hospital — General Campus	Kid
54164	University of Ottawa Heart Institute	Hea
60016	Transplant Manitoba — Gift of Life Program Health Sciences Centre	Kid
62016	Transplant Manitoba — Gift of Life Program Children's Hospital Health Sciences Centre Winnipeg	Kid
70141	Saskatchewan Health Region Renal Services St. Paul's Hospital	Kid
80015	Alberta Health Services Alberta Children's Hospital	Kid
80016	Alberta Health Services Foothills Medical Centre Site	Kid, Kid–Pan
80044	Alberta Health Services University of Alberta Hospital	Kid, Liv, Hea, Ht–Lu, Lun, Kid–Pan, Pan, Islet Cells, Bow, Clus
90101	Vancouver General Hospital	Kid, Liv, Lun, Kid–Pan, Islet Cells
90102	St. Paul's Hospital Providence Health Care	Kid, Hea
90105	Provincial Health Services Authority BC Children's Hospital	Kid, Hea

Appendix B — Organ procurement organizations in Canada

A list of OPOs in Canada as of January 1, 2020, is available on the CORR web page.

Appendix C — Reporting forms

The Canadian Institute for Health Information and the Canadian Organ Replacement Register accept electronic submissions only. Forms can be provided for reference.

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