SickKids®
THE HOSPITAL FOR
SICK CHILDREN

PhenomeCentral Consent Form for Adults and Capable Minors

Title of Research Project:
PhenomeCentral: A portal for phenotypic and genotypic matchmaking for patients with rare genetic disorders

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Sponsorship:

This research is funded by the Canadian Institutes of Health Research (CIHR), the Natural Sciences and Engineering Research Council of Canada (NSERC), Genome Canada and the Canadian Care for Rare Fund.

Conflict of Interest:
Dr. Brudno and the other research team members have no conflict of interest to declare.

Purpose of the research:
You are being asked to consider participating in this study because you have an undiagnosed genetic condition. PhenomeCentral is a secure database, developed, stored and managed at the Hospital for Sick Children by the Centre for Computational Medicine. PhenomeCentral is a database for scientists and health care providers, at the Hospital for Sick Children and internationally, to securely store clinical and

genetic information on individuals with rare genetic disorders. PhenomeCentral searches in the database for individuals with similar clinical symptoms and/or genetic variants (also referred to as a "match") and connects the scientists/health care providers caring for these individuals. PhenomeCentral aims to:

1) Help health care providers arrive at a faster diagnosis of individuals with undiagnosed rare genetic disorders
2) Facilitate any ongoing or new research on the study of genes that affect human development and health in order to improve diagnosis, management and treatment of rare diseases

Finding a match may enable scientists and/or clinicians to carry out research to attempt to determine if there is a shared genetic diagnosis for the two "matched" individuals. This may lead to improved management, therapy, and understanding of the disorder.

As PhenomeCentral begins to find matches and diagnoses for individuals, the database will begin to store information about individuals with diagnosed (known) disorders. As an individual with an undiagnosed genetic disorder, you may match with an individual with a known disorder. Through consultation with your clinician, this may help establish a diagnosis or a previously described genetic disorder in yourself, which may lead to a better understanding of the cause of the disorder, natural history (typical course of disease), prognosis, and the appropriate management, treatments or therapies.

Description of the research:

If you consent to be part of this study, your treating clinician/researcher will gather clinical information about your medical condition that has been obtained during standard clinical appointments (today and in the past) with your treating clinician. This may include medical history information, family history information, physical examinations, and reviewing your medical records relevant to your undiagnosed genetic condition. This may also include results of genetic tests that have been ordered as part of your standard clinical care. PhenomeCentral only stores information, it does not store physical samples such as blood, DNA or tissue. You will choose the types of information that are included in the database (Please see the Participation section). You will not be asked to have any additional tests or examinations, or provide any additional information for PhenomeCentral outside of what has already been obtained through your standard clinical appointments.

If there are new clinical findings or genetic information that are learned during a clinical visit after the date on which you provide consent, and your condition remains undiagnosed, your treating clinician/researcher may add it to PhenomeCentral if it is relevant to your undiagnosed condition.

With your consent, your treating clinician/researcher will send (upload your information) to the PhenomeCentral database. PhenomeCentral is password protected. Your information will be stored individually and identified only by a unique ID assigned to you. This means that all your information available on the database will be de-identified and cannot be linked back to you, except by your treating clinician/researcher. Study team members at SickKids will not be able to link any information back to you.

PhenomeCentral is part of the Matchmaker Exchange, which is a connected group of restricted access databases containing de-identified genetic and medical information on patients with rare conditions. The Matchmaker Exchange aims to find matches and diagnoses for individuals and aid in the discovery of rare disorders. With more databases participating in matching, the chances for a match are increased. You can decide if you would like your information to be shared within PhenomeCentral only or more broadly with the Matchmaker Exchange. **Use of Medical Photographs:** Pictures may sometimes be a useful tool for diagnosing conditions. As part of this study, you are being asked to provide consent for the study team to

access any medical photographs taken of you by your treating doctor and stored in your SickKids medical records and upload them on to PhenomeCentral. If your treating clinician has taken photographs of you that show features of your undiagnosed condition, you may choose to allow these to be included in the database. The pictures may include unique features which may identify you. It may also include pictures of your face. This part of the study is voluntary.

You may also be asked by the study team to consent to have new pictures taken of features of your condition. This is also voluntary. You will be asked to indicate your choice about allowing the use of your pictures on PhenomeCentral

If you provide consent now, you have the option to withdraw your consent later. Note that you can only withdraw stored pictures from the database. Any pictures which have been shared cannot be withdrawn.

Your treating clinician/researcher will have access to PhenomeCentral by reading and agreeing to the Terms and Conditions of PhenomeCentral. You may request a copy of the Terms and Conditions if you wish to review them before completing the consent process.

PhenomeCentral compares your clinical and genetic information with other individuals entered in the database. Potential matches are presented to the clinician/researcher with the similarities and differences highlighted and a form to contact the other clinician/researcher. It is the responsibility of the clinician/researcher enrolling you in this study to communicate with the clinician/research they have matched with to determine if the match is real. It is the responsibility of the clinician/researcher enrolling you in this study to notify you if a real match is found.

If, at a later date, a new individual is entered into the database that matches with you PhenomeCentral will make available the contact information of your clinician/researcher to facilitate communication and evaluation of the match. Your clinical and genetic information will be revealed so that your clinician/research can determine if the match is real. It is the responsibility of the clinician/researcher enrolling you in this study to notify you if a real match is found. PhenomeCentral is not responsible for contacting clinicians/researchers or patients. As a patient you are not able to search PhenomeCentral to look for matches.

If a potential match is found, the clinician/scientist enrolling you in this study may wish to re-contact you to notify you of the match, obtain more information about your condition, and/or notify you about possible research opportunities.

If you receive a diagnosis for your previously undiagnosed medical condition, either through a match made on PhenomeCentral, or other methods, this information will be added to PhenomeCentral.

Members of the SickKids study team may monitor the data in PhenomeCentral to track usage and for quality improvement. When discussing PhenomeCentral with other researchers, colleagues, at conferences or in publications, the SickKids study team will group together data such that no one individual is identifiable.

Potential harms, discomforts or inconveniences:

Given the nature of rare disorders, there is a possibility that other users will be able to link your PhenomeCentral record to your true identity based on the rare and unique pieces of information listed about you in the database.

Despite the mechanisms in place to keep all information secure and to protect your privacy, there remains a risk of privacy breach. If a privacy breach occurs, PhenomeCentral will contact your treating clinician/researcher to inform them of the breach and explain what data may have been compromised. It is the responsibility of your treating clinician/researcher to pass this information on to you.

We know of no other harm, discomfort or inconvenience that taking part in this study could cause you.

Potential benefits:

To you:
Placing your clinical and genetic information in PhenomeCentral may lead to the identification of a match between you and another individual in the database with very similar symptoms or genetic findings. Through consultation with your clinician/researcher, this may help establish a diagnosis for you. This may lead to improved management, therapy, and understanding of your condition.

To society:
PhenomeCentral's main aim is to benefit the individuals participating in the study to find a diagnosis for their rare genetic disorder. However, the information collected in PhenomeCentral also facilitates research into the study of genes that affect human development and health, may improve diagnosis, management and therapy of rare diseases, and provide insights on rare disease and rare disease research on an international scale.

Confidentiality:

How will your privacy be protected?
We will respect your privacy. The CIHR, NSERC, GenomeCanada and the Canada Care for Rare Fund is also committed to respecting your privacy. No information about who you are will be given to anyone or be published without your permission, unless the law requires us to do this.

Your treating clinician/researcher will collect personal health information about you. This includes things learned from the study procedures described in this consent form and/or information from your medical records. They will only collect the information they need for the study. The study may also collect personal information that could identify you such as:

- Year of birth
- Existing medical records, that includes types, dates and results of medical tests or procedures or genetic testing

You have the right to access, review and request changes to your personal health information

All personal health information or personal information collected about you will be "de-identified" by replacing your identifiable information with a "study number". Your treating clinician/researcher is in control of the study code key, which is needed to connect your personal health information. The link between the study number and your identity will be safeguarded by your treating clinician/researcher will not be available to SickKids study members (Primary Investigators, research coordinators, software developers, data analysts), CIHR, NSERC, GenomeCanada or the Canada Care for Rare fund. SickKids guidelines include the following:

- All information that identifies you, both paper copy and electronic information, will be kept confidential and stored and locked in a secure place that only your treating clinician/researcher will be able to access.

- Electronic files will be stored securely on hospital or institutional networks or securely on any portable electronic devices.
- No information identifying you will be allowed off site in any form. Examples include your hospital or clinic charts, copies of any part of your charts, or notes made from your charts.

Your treating clinician/researcher, the study staff and the other people listed above will keep the information they see or receive about you confidential, to the extent permitted by applicable laws. Even though the risk of identifying you from the study data is very small, it can never be completely eliminated.

The following people may come to the hospital to look at your personal health information to check that the information collected for the study is correct and to make sure the study followed the required laws and guidelines:

- CIHR, NSERC, GenomeCanada and the Canada Care for Rare Fund
- Representatives of the SickKids Research Ethics Board and/or Research Quality and Risk Management team;

Access to your personal health information will take place under the supervision of your treating clinician/researcher.

Your treating clinician/researcher will keep any personal health information about you in a secure and confidential location for a duration in accordance with regulations of the institution for which your treating clinician researcher works

Your de-identified data will remain in PhenomeCentral indefinitely but you have the choice to have your information taken out of the study. You will need to contact the Principal Investigator or study team member to let them know. Any information that has already been shared with researchers outside of SickKids cannot be withdrawn.

When the results of this study are published, your identity will not be disclosed. You have the right to be informed of the results of this study once the entire study is complete.

Your health information from this research project study will be sent to other countries but your identifiers will be removed. They will not be able to identify you.

Your participation in this study may be noted in your hospital or clinic chart. This is recommended to ensure your safety so that any treating physician will know that you are participating in a research study.

It is possible that a commercial product (i.e. device, pharmaceutical) may be developed as a result of this study. You will have no right to any products that may be created as a result of this study or any future research studies. You will not receive royalties from any products that may be created as a result of this study or any future research studies.

Medical photography confidentiality:

If you have had medical photographs taken during one of your standard clinical appointments, your treating clinician/researcher may upload them to PhenomeCentral only with your consent. They will remain on PhenomeCentral indefinitely unless you withdraw your consent for the study or specifically choose to take out your pictures from the database. Only members of the research team (and maybe the SickKids monitor, or employees of the companies sponsoring the study or the regulator eg., CIHR) will have access to them.

Reimbursement:
You will not be paid to be part of this study.

Participation:
It is your choice to take part in this study. You can stop at any time. The care you get at SickKids will not be affected in any way by whether you take part in this study.

Please indicate the types of information that you will allow the clinician/research to enter into PhenomeCentral.

Yes No

☐ ☐ Year and month of birth

☐ ☐ Clinical symptoms and medical history

☐ ☐ Measurements such as height, weight, head circumference, etc.

☐ ☐ Family history

☐ ☐ Data from any available genetic tests done including whole-exome sequencing or whole-genome sequencing

☐ ☐ Medical photographs, which may include unique (and therefore potentially identifying) features of your condition. If you consent to have photographs of you face included in PhenomeCentral, please write your initials and date. After the image is shared on PhenomeCentral, it cannot be withdrawn from the clinician/researcher.

☐ ☐ Diagnosis (if one is discovered in the future), including genetic mutation/variant and name of disorder

_____ Initials _____Date

Permission to share information within the Matchmaker Exchange
Sharing information with the Matchmaker Exchange is voluntary. You can decide if you would like your information to be shared within PhenomeCentral only or more broadly with the network of databases called the Matchmaker Exchange.

☐ I give permission for my information to be shared with the Matchmaker Exchange.
_____ Initials _____Date

☐ I **do not** give permission for my information to be shared with the Matchmaker Exchange.
_____ Initials _____Date

Permission to Re-contact:
If a potential match is found, the clinician/scientist enrolling you in this study may wish to re-contact you to notify you of the match, obtain more information about your condition, and/or notify you about possible research opportunities. Please indicate your preferences for re-contact.

☐ I give permission to be re-contacted if a potential match is found. _____Initials _____Date

☐ I **do not** give permission to be re-contacted to discuss a potential match. _____Initials _____Date

New information that we get while we are doing this study may affect your decision to take part in this study. If this happens, we will tell you about this new information. And we will ask you again if you still want to be in the study.

During this study, we may create new tests, new medicines, or other things that may be worth some money. Although we may make money from these findings, we cannot give you any of this money now or in the future because you took part in this study.

Your signing this consent form does not interfere with your legal rights in any way. The staff of the study, any people who gave money for the study, or the hospital are still responsible, legally and professionally, for what they do.

Study Consent:

By signing this form, I agree that:

1) You have explained this study to me. You have answered all my questions.
2) You have explained the possible harms and benefits (if any) of this study.
3) I know what I could do instead of taking part in this study. I understand that I have the right not to take part in the study and the right to stop at any time.
4) My decision about taking part in the study will not affect my health care at Sick Kids.
5) I am free now, and in the future, to ask questions about the study.
6) I have been told that my medical records will be kept private except as described to me.
7) I understand that no information about who I am will be given to anyone or be published without first asking my permission.
8) I agree, or consent, to take part in this study.

Printed Name of Subject	Subject's signature & date
Printed Name of person who explained consent	Signature of Person who explained consent & date
Printed Witness' name (if the subject/legal guardian does not read English)	Witness' signature & date

Photography consent

1. I am aware that the use of medical pictures from my file is voluntary.
2. I am aware that agreeing to be photographed during this study is also optional.
3. If I consent to the use of my new or stored pictures, These will be uploaded to PhenomeCentral https://phenomecentral.org in my password protected record. The pictures will only be made visible to other scientists and clinicians using PhenomeCentral to identify potential matches for my condition.
4. I understand that I have the right to refuse to take part in this study. I also have the right to withdraw from this part of the study at any time. eg., before or even after the photographs are made. My decision will not affect my health care at SickKids.
5. In agreeing to the use of the photograph(s) for other purposes, I will be offered a chance to look at the pictures which will be included in PhenomeCentral.
6. I have the right to withdraw my permission for other uses of my pictures at any time.
7. I am aware that if I decide to withdraw from the study, I can withdraw all my existing pictures from PhenomeCentral, except those pictures which have already been shared with other researchers.
8. I am free now, and in the future, to ask questions about the sharing pictures and picture taking.
9. I have been told that my medical records will be kept private. You will give no one information about me, unless the law requires you to.
10. I understand that no information about me (including these pictures) will be given to anyone or be published without first asking my permission."

Consent to Use Pictures in my Medical File for PhenomeCentral (please check your choice)

- □ I allow the use of any photos which are part of my medical file, **including any photos of my face**
- □ I allow the use of any photos which are part of my medical file, **excluding any photos of my face**
- □ I **do not allow** the use of any photos which are part of my medical file to be uploaded to PhenomeCentral.

_____Initials _____Date

Consent for New Pictures to be taken and uploaded to Phenome Central (please check your choice)

- □ I allow the study team to take pictures of me for the database, **including any photos of my face**
- □ I allow the study team to take pictures of me for the database, **excluding any photos of my face.**
- □ **I do not allow** the study team to take pictures of me for the database.

_____Initials _____Date

_____	_____
Printed Name of Subject	Subject's signature & date
_____	_____
Printed Name of person who explained consent	Signature & date
_____	
Printed Witness' name (subject does not read English)	Witness' signature & date

If you have any questions about this study, please call Brittney Johnstone at 416-813-7654 ext. 414028

If you have questions about your rights as a subject in a study please call the Research Ethics Manager at 416-813-5718.