

EXHIBIT 167

From: [Karen Robinson](#)
To: [Donna Kelly](#)
Subject: RE: Any update?
Date: Thursday, December 21, 2017 9:25:00 AM

Donna --

I have asked for a contact at research office to review and provide advice on wording. We then may need to discuss on phone.

In general, my understanding is that the university will not sign off on a contract that allows a sponsor to stop an academic publication.

Also, just to be clear, the "data" we are talking about is our review of existing publications.

I will be back in touch when I have heard from lawyer on this end.

Thanks for your persistence in this, Donna!

Happy holidays and best wishes for a happy and healthy new year,
Karen

-----Original Message-----

From: Donna Kelly [<mailto:donna@veritasmeetingsolutions.com>]
Sent: Wednesday, December 20, 2017 5:29 PM
To: Karen Robinson <^{REDACTED}>
Subject: RE: Any update?

Thanks Karen.

Please define "other than for education, academic or research purposes" in 9.2.

Our board has very specific thoughts around having approval for all uses, they are not likely to want to grant use of the data for academic research purposes without approval of the context.

Happy to discuss this more by phone if that is easier.

Donna

-----Original Message-----

From: Karen Robinson [<mailto:> ^{REDACTED}]
Sent: Wednesday, December 20, 2017 1:43 PM
To: Donna Kelly <donna@wpath.org>
Subject: RE: Any update?

Thanks, Donna. The prior version of section 8 covered some of that but how about this for new sections to replace original 7,8 and 9 (to be renumbered). Again, I used a prior contract with an organization as a basis. Please let me know of any suggested revisions. If you and Board are ok or mostly ok, I will revise contract and start process of getting our side (lawyers) to review.

Thanks!

Karen

<sent previously>

1.1 Rights in Data

1.1.1 The term "Project Data" as used herein includes, among others, raw data, research data, records, reports, notes, tables, writing, sound recordings, pictorial reproduction, drawings or other graphical representations, and works of any similar nature (whether or not copyrighted) which are generated or specified to be delivered in connection with the Project under this Agreement.

1.1.2 The INSTITUTION ensures that the ownership of the Project Data and all intellectual property rights in the Project Data developed by the INSTITUTION or the INVESTIGATOR in connection with the Project shall automatically be vested in WPATH as soon as they are created or, to the extent required, assigned to WPATH.

1.1.3 To the extent not prohibited by mandatory law, the INSTITUTION hereby completely waives and agrees not to enforce (and procures that its agents, designees, employees and subcontractors waive and agree not to enforce) any intellectual property rights and other proprietary rights, if any, related to the Project Data.

1.1.4 WPATH shall grant the INSTITUTION a royalty-free, nonexclusive license or permissions and licenses as

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may be required for the INSTITUTION and the INVESTIGATOR to use the Project Data in so far as required by the INSTITUTION and/or the INVESTIGATOR for education or research purposes.

<suggested new section>

9. Use and Publication

9.1 Notwithstanding anything to the contrary contained in this Agreement, WPATH shall retain the unrestricted right to use the Project Data, or any part thereof at any time, in any manner and for any purpose, including the publication of the Project Data and the communication of Project Data to third parties.

9.2 Any publication or use of the Project Data by the INSTITUTION, other than for education, academic or research purposes, must be reviewed by WPATH and approved by it prior to such publication of use.

9.3 Prior to the publication of the Project Data or any part thereof by the INSTITUTION, WPATH shall have thirty (30) days in which to review and comment on the proposed publication. The INSTITUTION will give due regard to WPATH's comments. WPATH has the right to request the deletion of any Confidential Information. WPATH further has the right to request a delay in publication to allow for any patentable invention to be legally protected.

9.4 Publication of the Project Data or any part thereof by either of the Parties shall give proper credit to the other Party. The INSTITUTION shall not mention any commercial brands or trade names in the publication of the Project Data except as such brand or trade names are essential in the description of the research, nor shall the name of WPATH be used in any way for advertising purposes without WPATH's prior written consent.

9.5 The INSTITUTION shall not originate any publicity, news release, advertising promotion or commercial material, or other public announcement, written or verbal, whether to the public press or otherwise, relating to this Agreement, the Project conducted hereunder, or to any amendment(s) without WPATH's prior express written consent, except as required by law.

-----Original Message-----

From: Donna Kelly [<mailto:donna@wpath.org>]
Sent: Wednesday, December 20, 2017 2:18 PM
To: Karen Robinson <REDACTED>
Subject: RE: Any update?

Hi Karen,

Thank you for doing this it was very helpful. We discussed the revised language and most was fine as is. There are still questions around your 1.1.4 below. Can you provide some additional clarification? The board wants it to be clear that the data cannot be used without WPATH approval in each instance so they have some control over the context it is being used in.

Thank you, Donna

1.1.4 WPATH shall grant the INSTITUTION a royalty-free, nonexclusive license or permissions and licenses as may be required for the INSTITUTION and the INVESTIGATOR to use the Project Data in so far as required by the INSTITUTION and/or the INVESTIGATOR for education or research purposes.

-----Original Message-----

From: Karen Robinson [<mailto:REDACTED>]
Sent: Tuesday, December 19, 2017 7:34 AM
To: Donna Kelly <donna@wpath.org>
Subject: Any update?

Good morning, Donna.. I am checking in to see if the revised contract text I sent addressed the concerns. Anything I can do on my end to move forward?

Thanks,
Karen

JHU_00000012

Sent from my iPhone

JHU_00000013

From: [Karen Robinson](#)
To: ["Donna Kelly"](#)
Subject: RE: Any update?
Date: Wednesday, December 20, 2017 2:43:26 PM

Thanks, Donna. The prior version of section 8 covered some of that but how about this for new sections to replace original 7,8 and 9 (to be renumbered). Again, I used a prior contract with an organization as a basis. Please let me know of any suggested revisions. If you and Board are ok or mostly ok, I will revise contract and start process of getting our side (lawyers) to review.

Thanks!

Karen

<sent previously>

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<suggested new section>

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-----Original Message-----

From: Donna Kelly [<mailto:donna@wpath.org>]
Sent: Wednesday, December 20, 2017 2:18 PM
To: Karen Robinson <REDACTED>
Subject: RE: Any update?

Hi Karen,

Thank you for doing this it was very helpful. We discussed the revised language and most was fine as is. There are still questions around your 1.1.4 below. Can you provide some additional clarification? The board wants it to be clear that the data cannot be used without WPATH approval in each instance so they have some control over the context it is being used in.

Thank you, Donna

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-----Original Message-----

From: Karen Robinson [<mailto:> REDACTED]
Sent: Tuesday, December 19, 2017 7:34 AM
To: Donna Kelly <donna@wpath.org>
Subject: Any update?

Good morning, Donna.. I am checking in to see if the revised contract text I sent addressed the concerns. Anything I can do on my end to move forward?

Thanks,
Karen

Sent from my iPhone

From: [Karen Robinson](#)
To: "Donna Kelly"
Subject: RE: contact for the contract?
Date: Wednesday, September 27, 2017 12:03:19 PM

I don't envy you the task of finding a common meeting time!
I am willing to be flexible to other options, such as individual calls, as needed.

Thanks,
Karen

From: Donna Kelly [mailto:donna@wpath.org]
Sent: Wednesday, September 27, 2017 11:46 AM
To: Karen Robinson <REDACTED>
Subject: RE: contact for the contract?

Excellent Karen.

I am still working on a common time they can all meet. If need be are you will to speak with the three chairs individually? I think that may be a better approach. I can speak with you first to give you some direction from the Board and a heads up on some of the points that need to be ironed out with the Chair.

Thanks
Donna

From: Karen Robinson [mailto:REDACTED]
Sent: Wednesday, September 27, 2017 10:42 AM
To: Donna Kelly <donna@wpath.org>
Subject: RE: contact for the contract?

Donna –

I just wanted to touch base. The contract is with our research office and I hope to get it soon and then forward to you.

Any word on scheduling of calls?

Thanks,
Karen

From: Donna Kelly [mailto:donna@wpath.org]
Sent: Monday, September 18, 2017 12:04 PM
To: Karen Robinson <REDACTED> Donna Kelly <donna@wpath.org>
Subject: RE: contact for the contract?

Hi Karen,

I am still working on it, one of our chairs was on holiday.

I will get back to you as soon as possible.

Thank you
Donna

From: Karen Robinson [mailto:REDACTED]
Sent: Monday, September 18, 2017 10:51 AM
To: Donna Kelly <donna@wpath.org>
Subject: RE: contact for the contract?

Donna –

I just wanted to check in. Any word on call with program chairs?

JHU_00000016

The contract is working its way through the red tape here at Hopkins and I hope to send it along to you soon.

Thanks,
Karen

From: Donna Kelly [<mailto:donna@wpath.org>]

Sent: Tuesday, September 12, 2017 4:31 PM

To: Karen Robinson <REDACTED>

Subject: RE: contact for the contract?

Hi Karen,

The contract should come to me and I will share it with the rest of the leadership. I agree it is good to get started on it now as they may want to send it for legal for review. I imagine if the scope changes at all based on the call much of the general language would be the same.

Thank you

Donna

From: Karen Robinson [<mailto:REDACTED>]

Sent: Tuesday, September 12, 2017 7:20 AM

To: Donna Kelly <donna@wpath.org>

Subject: contact for the contract?

Donna –

As we work to schedule a call with the chairs, is there someone I should be in touch with regarding the contract? I'd like to set those wheels in motion so we can get started as soon as possible.

Thanks,
Karen

Karen A. Robinson, PhD

Director JHU Evidence-based Practice Center

Associate Professor of Medicine, Epidemiology, and Health Policy and Management

Johns Hopkins University

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JHU_00000017

From: [Karen Robinson](#)
To: "[Donna Kelly](#)"
Subject: RE: contact for the contract?
Date: Wednesday, September 27, 2017 11:42:23 AM

Donna –

I just wanted to touch base. The contract is with our research office and I hope to get it soon and then forward to you.

Any word on scheduling of calls?

Thanks,

Karen

From: Donna Kelly [mailto:donna@wpath.org]
Sent: Monday, September 18, 2017 12:04 PM
To: Karen Robinson <REDACTED> Donna Kelly <donna@wpath.org>
Subject: RE: contact for the contract?

Hi Karen,

I am still working on it, one of our chairs was on holiday.

I will get back to you as soon as possible.

Thank you

Donna

From: Karen Robinson [mailto:REDACTED]
Sent: Monday, September 18, 2017 10:51 AM
To: Donna Kelly <donna@wpath.org>
Subject: RE: contact for the contract?

Donna –

I just wanted to check in. Any word on call with program chairs?

The contract is working its way through the red tape here at Hopkins and I hope to send it along to you soon.

Thanks,

Karen

From: Donna Kelly [mailto:donna@wpath.org]
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To: Karen Robinson <REDACTED>
Subject: RE: contact for the contract?

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Thank you

Donna

From: Karen Robinson [mailto:REDACTED]
Sent: Tuesday, September 12, 2017 7:20 AM
To: Donna Kelly <donna@wpath.org>
Subject: contact for the contract?

Donna –

JHU_00000018

As we work to schedule a call with the chairs, is there someone I should be in touch with regarding the contract? I'd like to set those wheels in motion so we can get started as soon as possible.

Thanks,

Karen

Karen A. Robinson, PhD

Director JHU Evidence-based Practice Center

Associate Professor of Medicine, Epidemiology, and Health Policy and Management

Johns Hopkins University

REDACTED

REDACTED

REDACTED

REDACTED

From: [Karen Robinson](#)
To: [Donna Kelly](#)
Subject: RE: contact for the contract?
Date: Monday, September 18, 2017 11:50:00 AM

Donna –

I just wanted to check in. Any word on call with program chairs?

The contract is working its way through the red tape here at Hopkins and I hope to send it along to you soon.

Thanks,

Karen

From: Donna Kelly [mailto:donna@wpath.org]

Sent: Tuesday, September 12, 2017 4:31 PM

To: Karen Robinson <REDACTED>

Subject: RE: contact for the contract?

Hi Karen,

The contract should come to me and I will share it with the rest of the leadership. I agree it is good to get started on it now as they may want to send it for legal for review. I imagine if the scope changes at all based on the call much of the general language would be the same.

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To: Donna Kelly <donna@wpath.org>

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Thanks,

Karen

Karen A. Robinson, PhD

Director JHU Evidence-based Practice Center

Associate Professor of Medicine, Epidemiology, and Health Policy and Management

Johns Hopkins University

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JHU_00000020

From: [Karen Robinson](#)
To: "[Donna Kelly](#)"
Subject: RE: contract language?
Date: Thursday, December 7, 2017 1:24:03 PM

I would suggest that the text I sent be used to replace section 7 and 9. Again, I will have to send revised contract through office here. Let me know if this works on your end and I will start that process.

Thanks
Karen

From: Donna Kelly [mailto:donna@veritasmeetingsolutions.com]

Sent: Thursday, December 07, 2017 1:17 PM

To: Karen Robinson <[REDACTED](#)>

Subject: RE: contract language?

Hi Karen.

Sorry I mistyped, it is 7, 8 and 9. Whould you please provide comment on section 9.

Thank you

Donna

From: Karen Robinson [mailto:[REDACTED](#)]

Sent: Thursday, December 7, 2017 9:48 AM

To: Donna Kelly <donna@veritasmeetingsolutions.com>

Subject: RE: contract language?

Donna –

Thanks for the follow-up information.

Section 6 is standard confidentiality section and I think is ok as is.

I have pasted below some possible replacement text for Section 7 based on a prior contract of similar work.

Section 8 is about publishing the results of the reviews (called STUDY in contract, and Project Data in text below), not the SOC.

Let me know if below helps and I will see how to get it through our lawyers.

Thanks,

Karen

1.1 Rights in Data

1.1.1 The term "Project Data" as used herein includes, among others, raw data, research data, records, reports, notes, tables, writing, sound recordings, pictorial reproduction, drawings or other graphical representations, and works of any similar nature (whether or not copyrighted) which are generated or specified to be delivered in connection with the Project under this Agreement.

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1.1.3 To the extent not prohibited by mandatory law, the INSTITUTION hereby completely waives and agrees not to enforce (and procures that its agents, designees, employees and subcontractors waive and agree not to enforce) any intellectual property rights and other

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proprietary rights, if any, related to the Project Data.

1.1.4 WPATH shall grant the INSTITUTION a royalty-free, nonexclusive license or permissions and licenses as may be required for the INSTITUTION and the INVESTIGATOR to use the Project Data in so far as required by the INSTITUTION and/or the INVESTIGATOR for education or research purposes.

From: Donna Kelly [<mailto:donna@veritasmeetingsolutions.com>]

Sent: Monday, December 04, 2017 1:54 PM

To: Karen Robinson <REDACTED>

Subject: RE: contract language?

Hi Karen,

Attached here again should you not have it handy is the agreement. It is sections 6, 7 and 8. Here are my notes from the conversation at our board meeting.

* The SOC belongs to WPATH, JHU is being hired to help us with the evidence review and grading of the evidence. JHU cannot publish their findings independently, the SOC is an internal work product of WPATH.

* If we are paying for the data review through a fee for services, why wouldn't we own the results? Define exactly what data belongs to WPATH and what JH considers they own or have limited rights to. Define the limitations.

Please let me know your thoughts.

Thank you

Donna

From: Karen Robinson [<mailto:REDACTED>]

Sent: Wednesday, November 29, 2017 11:18 AM

To: Donna Kelly <donna@wpath.org>

Subject: contract language?

Donna –

Could you send me the section(s) or statement(s) in the contract that has caused concern?

Thanks,

Karen

JHU_00000022

From: [Karen Robinson](#)
To: "[Donna Kelly](#)"
Subject: RE: contract language?
Date: Thursday, December 7, 2017 10:48:26 AM

Donna –

Thanks for the follow-up information.

Section 6 is standard confidentiality section and I think is ok as is.

I have pasted below some possible replacement text for Section 7 based on a prior contract of similar work.

Section 8 is about publishing the results of the reviews (called STUDY in contract, and Project Data in text below), not the SOC.

Let me know if below helps and I will see how to get it through our lawyers.

Thanks,

Karen

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From: Donna Kelly [mailto:donna@veritasmeetingsolutions.com]

Sent: Monday, December 04, 2017 1:54 PM

To: Karen Robinson <[REDACTED](#)>

Subject: RE: contract language?

Hi Karen,

Attached here again should you not have it handy is the agreement. It is sections 6, 7 and 8. Here are my notes from the conversation at our board meeting.

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* If we are paying for the data review through a fee for services, why wouldn't we own the results? Define exactly what data belongs to WPATH and what JH considers they own or have limited rights

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to. Define the limitations.

Please let me know your thoughts.

Thank you

Donna

From: Karen Robinson [mailto: REDACTED]
Sent: Wednesday, November 29, 2017 11:18 AM
To: Donna Kelly <donna@wpath.org>
Subject: contract language?

Donna –

Could you send me the section(s) or statement(s) in the contract that has caused concern?

Thanks,

Karen

JHU_00000024

From: [Karen Robinson](#)
To: [Donna Kelly](#)
Cc: [Chanel Livingston](#)
Subject: contract: JHU and WPATH
Date: Wednesday, May 2, 2018 2:47:00 PM
Attachments: [WPATH JH SOC8 Contract.pdf](#)

Donna –

Attached is signed contract – note that before this is finalized we need the ‘notices section’ completed with details on to whom and where written notices are to be sent (see page 6).

I have had productive and informative calls with chairs and chapter leads – and another next week.

Thanks!

Karen

Karen A. Robinson, PhD

Director JHU Evidence-based Practice Center

Associate Professor of Medicine, Epidemiology, and Health Policy and Management

Johns Hopkins University

REDACTED

JHU_000000094

**Sponsored Research Agreement
Johns Hopkins University**

This agreement (the “Agreement”) is entered into as of this First day of April, 2018 (the “Effective Date”), by and between Johns Hopkins University, on behalf of its School of Medicine, having an Office of Research Administration located at 733 North Broadway, Suite 117 Baltimore, Maryland, 21205 (“JHU”), and the World Professional Association for Transgender Health, a private non-profit organization located at 2575 Northwest Parkway, Elgin, Illinois 60124 (“Sponsor”).

WHEREAS, Sponsor wishes that JHU perform systematic reviews and other activities to support guideline development and such work is of mutual interest and benefit to the JHU and Sponsor;

WHEREAS, Karen A. Robinson, PhD, Director, JHU Evidence-based Practice Center and Associate Professor of Medicine shall be JHU’s principal investigator in conducting the research for Sponsor (“Investigator”); and

WHEREAS, the research will further JHU’s instructional, scholarship, and research objectives in a manner consistent with its status as a non-profit, tax-exempt, educational institution.

NOW, THEREFORE, in consideration of the following mutual promises, covenants, and conditions and any sums to be paid, the parties hereto agree as follows:

1. STATEMENT OF WORK

(a) JHU agrees to use its reasonable efforts to support update and development of the Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People (“Study”), as described in the statement of work for this Study (attached as Exhibit A). JHU shall perform the Study in accordance with academic standards and all applicable laws and regulations.

(b) Sponsor acknowledges that JHU and/or its researchers may be engaged in similar research not financially supported by Sponsor or subject to this Agreement. Nothing in this Agreement shall be construed to limit the freedom of JHU and/or its researchers who are participants in this Agreement, whether paid under this Agreement or not, from engaging in similar research inquiries made independently under other grants, contracts, or agreements with parties other than the Sponsor, and Sponsor shall have no rights via this Agreement to the results of such similar research.

2. INVESTIGATOR

This Study will be conducted under the direction of the Investigator identified above. In the event the Investigator should become unavailable to serve in that role, or shall no longer be employed by JHU, JHU shall have the right to designate a replacement principal investigator, subject to Sponsor’s reasonable approval. If the parties are unable to identify a mutually

acceptable replacement principal investigator within sixty (60) days of notification to Sponsor by JHU of a proposed replacement, then either party may terminate this Agreement in accordance with the termination provision of this Agreement.

3. PAYMENT

(a) In consideration of JHU conducting the Study hereunder, Sponsor shall pay JHU in the aggregate amount of One Hundred Ninety-Six Three Hundred Seven U.S. Dollars (\$196,307). Payments shall be made in accordance with the following schedule:

A quarterly payment schedule based on milestones:

1. \$49,076.75 upon initiation of project with signed contract
2. \$49,076.75 upon submission of final PICO document outlining questions for review
3. \$49,076.75 upon submission of the draft report of the systematic reviews
4. \$49,076.75 upon submission of final report of systematic reviews

(b) Payments shall be made as follows:

Payable to: **The Johns Hopkins University**
Tax I.D. Number: **52-0595110**

Payments by check shall be sent to:

**Johns Hopkins University Central Lockbox
c/o Bank of America
12529 Collections Center Drive
Chicago, IL 60693**

All electronic fund transfers should be sent to:

**c/o Bank of America
100 S. Charles Street
Baltimore, Maryland 21201
Transit/routing/ABA number: REDACTED
Account number: REDACTED**

All payments shall include the following reference information:

1. Name of JHU Investigator
2. Title of the Study

4. EQUIPMENT AND PROPERTY

Unless otherwise explicitly provided, title to and ownership of all equipment, supplies, and property purchased or manufactured by JHU under this Agreement will be in and remain with JHU, even after completion or termination of the Agreement.

5. AUDIT

Authorized representatives of Sponsor or its designee shall have the right no more than once per contract year, upon reasonable and advance written notice, during regular business hours, and in accordance with JHU's applicable policies and procedures, to examine and inspect JHU's and the applicable Investigator's records associated with this Study and inspect and copy all work products relating to this Study, subject to Section 6 of this Agreement.

6. PROPRIETARY INFORMATION AND CONFIDENTIALITY

(a) "Confidential Information" means all non-public, confidential, and/or proprietary information that is marked as "Confidential Information" as described below and which is disclosed by one party to the other, including but not limited to software, inventions (whether patentable or not), algorithms, diagrams, drawings, processes, research, product or strategic plans or collaborations or partnerships, financial information, or business models. Confidential Information, if in tangible or readable form, shall be marked as such at the time of disclosure and if disclosed orally, shall be reduced to writing, marked confidential, and addressed to the other party within ten (10) days after disclosure.

(b) Both JHU and Sponsor shall have the right to refuse to accept any Confidential Information proffered to it by the other. If necessary, the parties will exchange Confidential Information only under the provisions set forth herein. The party who receives Confidential Information (the "Receiving Party") shall (i) hold the Confidential Information in confidence using the same care it affords its own confidential information of a similar nature, but not less than a reasonable degree of care; (ii) use the Confidential Information only for the performance of this Agreement; and (iii) restrict disclosure of the Confidential Information to employees whose duties justify the need to know the Confidential Information in furtherance of the performance of this Agreement and who are advised as to the confidential nature of the information and required to comply with the provisions of this Agreement. The Receiving Party shall not provide any third parties with access to the Confidential Information unless such third party has agreed to be bound by confidentiality and non-disclosure obligations in a form of an agreement reasonably acceptable to the party disclosing the Confidential Information (the "Disclosing Party").

(c) Confidential Information shall not include any information disclosed that the Receiving Party can demonstrate (i) previously was in its possession, without violation of any obligation of confidentiality; (ii) was received from a third party without violation of any obligation of confidentiality; (iii) was publicly known and made generally available prior to such disclosure; (iv) becomes publicly known and made generally available, through no action or inaction of the Receiving Party, after such disclosure; or (v) was independently developed without use of any Confidential Information by employees or consultants of the Receiving Party.

(d) If the Receiving Party is required to disclose Confidential Information by order of a court of competent jurisdiction, administrative agency or governmental body, or by subpoena, summons, or other legal process, the Receiving Party shall provide the Disclosing Party with prompt written notice of such required disclosure so that the Disclosing Party may seek a protective order or take other appropriate action, cooperate reasonably with Disclosing Party in connection with Disclosing Party's efforts to seek such relief, and thereafter to disclose only the minimum information required to be disclosed in order to comply.

(e) Upon termination of this Agreement or the Disclosing Party's request, Confidential Information shall be promptly returned to the Disclosing Party or destroyed, with such destruction confirmed in writing. The Receiving Party may retain one archival copy of such Confidential Information, for the purpose of fulfilling its obligations under this Agreement.

(f) The obligations of confidentiality under this Section shall continue for a period of three (3) years following conclusion or early termination of this Agreement.

7. DATA USE AND PUBLICATIONS

The term "Project Data" as used herein includes, among others, raw data, research data, records, reports, notes, tables, writing, sound recordings, pictorial reproduction, drawings or other graphical representations, and works of any similar nature (whether or not copyrighted) which are generated or specified to be delivered by the JHU evidence review team in connection with the Project under this Agreement. Notwithstanding anything to the contrary contained in this Agreement, WPATH shall retain the unrestricted right to use the Project Data, or any part thereof at any time, in any manner and for any purpose, including the publication of the Project Data and the communication of Project Data to third parties. No other parties other than the JHU evidence review team will have any access to the Project Data without written permission by WPATH. Prior to the publication of the Project Data or any part thereof by the JHU evidence review team, WPATH shall have thirty (30) days in which to review and comment on the proposed publication. The JHU evidence review team will give due regard to WPATH's comments. WPATH has the right to request the deletion of any Confidential Information.

8. TERM AND TERMINATION

(a) Unless earlier terminated in accordance with subsection (b) of this Section, the term of this agreement shall commence on the Effective Date and shall terminate on 31 March 2019.

(b) This Agreement may be terminated if any of the following events occur: (i) for convenience by either party upon sixty (60) days written notice to the other party; (ii) either party materially breaches this Agreement, and the non-breaching party provides the breaching party with thirty (30) days advance written notice of termination and such breach is not remedied within such thirty (30) day period; (iii) Sponsor files for creditor protection under any section of the U.S. Bankruptcy Code; and/or (iv) a bankruptcy trustee or receiver is appointed for Sponsor.

Upon written notice, JHU shall proceed in an orderly fashion to limit or terminate any outstanding commitments and to conclude the work. All costs incurred by JHU associated with termination shall be allowable including, without limitation, all non-cancelable costs or commitments incurred or obligated and work performed prior to the effective date of termination, which shall include all appointment of research staff prior to the effective date of termination.

9. INDEMNIFICATION

Sponsor (the “Indemnifying Party”) shall indemnify, defend, and hold harmless JHU, its trustees, officers, employees, students, agents, and representatives (collectively, the “JHU Indemnitees”) from and against any and all losses, liability, cost, and expenses, including attorney’s fees and costs, awards, judgments, damages, fines, penalties, claims, and causes of action (collectively, “Claims”) arising out of or related to the negligent acts or omissions or misconduct of the Indemnifying Party or any of its officers, directors, employees, agents, representatives, contractors, successors, assigns, or anyone acting on any of their behalf in connection with, arising from, or related to the performance of the Indemnifying Party’s obligations under this Agreement, including Claims for (i) personal injury, including death, and damage to property; (ii) the breach by the Indemnifying Party of any term, representation, warranty, or covenant under this Agreement; or (iii) any use by Indemnifying Party of the research data or results including use of any intellectual property generated in the research that is provided hereunder. JHU shall not be liable to Sponsor, its officers, employees, agents, representatives, contractors, successors, assigns, or anyone acting on any of their behalf for injuries or losses arising out of the use by the Sponsor of the Study’s research data or results.

10. NOTICES

With the exception of Study funds paid by Sponsor pursuant to Section 3 hereof, all notices required or permitted to be given under this Agreement shall be in writing and shall be sent by certified or registered mail, postage prepaid, or by overnight courier, with proof of delivery by receipt, to the following address (or as either party shall designate by written notice to the other party):

If to Sponsor:

If to JHU:

original to: Michael B. Amey
Senior Associate Dean, Research Affairs
Johns Hopkins University School of Medicine
Office of Research Administration

733 North Broadway, Suite 117
Baltimore, Maryland 21205

copy to: Investigator

11. INDEPENDENT CONTRACTORS

JHU and Sponsor shall each be and remain an independent contractor with respect to all rights and obligations arising under this Agreement. Nothing contained in this Agreement shall be deemed or construed to create a relationship of employment, principal and agent, partnership, co- or joint employer, or joint venture. Sponsor shall not permit any of its officers, directors, agents, employees, representatives, contractors, successors, assigns, or anyone acting on their behalf to represent or hold out itself or themselves as employees, agents, or representatives of JHU or as authorized to make any commitment to incur any obligation on behalf of JHU.

12. USE OF OTHER PARTIES' NAMES

Sponsor shall not (a) issue a press release or make any other public statement that references this Agreement or discloses the Study results; or (b) use the names, logos, or trademarks (or derivatives thereof) of JHU, or its staff, contractors, or sub-contractors, for publicity or advertising purposes, except with the prior written consent of JHU, which consent may be withheld in JHU's sole discretion. All requests for JHU approval shall be directed to the JHU Office of Communications. JHU shall not use the names, logos, or trademarks of Sponsor, or its staff, contractors, or sub-contractors, for publicity or advertising purposes, except with the prior consent of Sponsor. Notwithstanding the foregoing, Sponsor acknowledges and agrees that JHU and its Investigator may disclose the existence of the funding support from Sponsor in any publication of the research, and as required by law.

13. WARRANTY DISCLAIMERS

JHU DISCLAIMS AND MAKES NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AS TO ANY MATTER, INCLUDING BUT NOT LIMITED TO WARRANTY OR FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, PATENTABILITY, OR THAT THE SPONSOR'S USE OF THE STUDY RESEARCH RESULTS WILL BE FREE FROM INFRINGEMENT OF PATENTS, COPYRIGHTS, TRADEMARKS, OR OTHER RIGHTS OF THIRD PARTIES.

14. EXPORT CONTROLS

Both parties shall comply with the United States laws and regulations controlling the export of technical data, computer software, laboratory prototypes, and other commodities (including the Arms Export Control Act, as amended, and the Export Administration Act of 1979). JHU's obligations hereunder are contingent on its ability to comply with applicable United States export and embargo laws and regulations. It is the expectation of JHU that the work done by JHU under this Agreement shall constitute fundamental research as defined under the export control laws and regulations. As an institution of higher learning, JHU does not wish to take receipt of

export controlled information except as may be knowingly and expressly agreed to in a writing signed by an authorized representative of JHU and for which JHU has made specific security arrangements. Sponsor agrees that it shall not provide or make accessible to JHU any export controlled materials (including, without limitation, equipment, information, and/or data) without first informing JHU of the export-controlled nature of the materials and obtaining from JHU's Export Compliance Office prior written consent to accept such materials, as well as any specific instructions regarding the mechanism pursuant to which such materials should be passed to JHU. JHU may decide, in its sole discretion, that it is not willing accept such materials. Sponsor agrees to comply with any and all applicable United States export control laws and regulations, as well any and all embargoes and/or other restrictions imposed by the Treasury Department's Office of Foreign Asset Controls.

15. SEVERABILITY

If any provision or a portion of any provision of this Agreement is held to be invalid, illegal, or unenforceable by a court of competent jurisdiction, the validity, legality, and enforceability of the remaining provisions of this Agreement shall not be affected or impaired in any way.

16. SURVIVABILITY

The terms of this Agreement which by their nature and for any reason are intended to survive and extend beyond the termination, cancellation, or expiration of this Agreement, shall remain in effect and be binding upon the parties beyond such time. Such terms shall include without limitation those that confer rights based on prior breaches or performance.

17. MODIFICATIONS

No amendment, modification, or addition to this Agreement will be binding upon the parties hereto unless reduced to writing and signed by an authorized representative of each party.

18. GOVERNING LAW

The laws of the State of Maryland, without giving effect to its choice of law provisions, shall govern all matters arising out of or relating to this Agreement, including, without limitation, its interpretation, construction, performance, and enforcement. Any legal suit, action, or proceeding arising out of or relating to this Agreement shall be brought in the Circuit Court for Baltimore City or in the United States District Court for the District of Maryland. Each of the parties waives, to the fullest extent permitted by law, any objection which it may now or later have to the exclusive jurisdiction of or the laying of venue in the Circuit Court for Baltimore City, Maryland or the United States District Court for the District of Maryland, including any objections based upon inconvenient forum. The parties agree that a final judgment in any such suit, action, or proceeding may be enforced in other jurisdictions as provided by law.

19. FORCE MAJEURE

Neither party will be responsible for or liable to the other party for non-performance or delay in

performance of any terms or conditions of this Agreement due to acts or occurrences beyond the reasonable control of the nonperforming or delayed party. Such causes include, but are not limited to, acts of God, acts of government, embargoes, terrorism, wars, riots, strikes or other labor disputes, shortages of labor or materials, hurricanes, fires, floods, or any other circumstances of like character. The party whose performance is delayed or prevented shall promptly provide to the other party written notice of the existence of and the reason for such non-performance or delay, and shall work diligently to mitigate its effects and make best efforts to resume performance as soon as practicable.

20. ENTIRE AGREEMENT

This Agreement, including any exhibits, attachments, and documents referenced herein, which are incorporated into this Agreement, constitutes the final agreement between the parties. It is the complete and exclusive expression of the parties' agreement on the matters contained in this Agreement. All prior and contemporaneous negotiations and agreements between the parties on the matters contained in this Agreement are expressly merged into and superseded by this Agreement. In entering into this Agreement, neither party has relied upon any statement, representation, warranty, or agreement of the other party except for those expressly contained in this Agreement. There are no conditions precedent to the effectiveness of this Agreement other than those expressly stated in this Agreement.

21. HEADINGS

The headings in this Agreement are for the convenience of reference only and are not substantive parts of this Agreement nor shall they affect its interpretation.

22. ASSIGNMENT AND DELEGATION

Sponsor may not assign this Agreement nor assign any of its rights under this Agreement, except with the prior written consent of JHU. Sponsor may not delegate any part of its performance under this Agreement without the prior written consent of JHU, which may be withheld in its sole discretion. Any purported assignment of rights or delegation of performance in violation of this Section 24 is void.

23. BINDING AGREEMENT ON SUCCESSORS

This Agreement shall be binding upon each party's successors and assigns.

24. WAIVER

Failure on the part of any party, in any or more than one instance, to insist upon the performance of any of the terms, covenants, or conditions of this Agreement or to exercise any right or privilege contained within this Agreement, or the waiver by any party of any breach of any of the terms, covenants, or conditions of this Agreement shall not be construed as thereafter waiving any such terms, covenants, conditions, rights, or privileges, but the same shall continue and

remain in full force and effect, as if no such forbearance of waiver had occurred.

25. COUNTERPARTS

This Agreement may be executed in multiple counterparts, and by either party on separate counterpart, including by facsimile or PDF delivery, each of which is deemed an original and all of which constitute one and the same agreement.

In Witness Whereof, the parties have caused this Agreement to be executed by their duly authorized representatives as of the Effective Date.

JOHNS HOPKINS UNIVERSITY

SPONSOR

By: _____

By:  _____

Name: Stephen B. Fisher

Name: GAIL A. KNUDSON

Title: Associate Director, ORA

Title: PRESIDENT, WPATH

Date: _____

Date: MARCH 30, 2018

Read and Agreed to abide by the terms contained herein, but not as a party hereto:

Investigator

Exhibit A – Statement of Work

JHU will provide services to support WPATH and SOC8:

- 1) In consultation with WPATH personnel, draft initial guidelines development process or “WPATH Guideline Procedures Manual”.
- 2) Orientation to the guideline development process and refinement of the scope. This includes:
 - a. presentation and discussion of systematic review and guideline development processes with WPATH personnel, especially the guideline chairs and chapter leads
 - b. preliminary searching
 - c. identification of statements within chapters for which systematic reviews will be conducted, and which will be ‘best practice statements’ based on consensus expert opinion
- 3) Conduct systematic reviews for the topics selected, including:
 - a. refinement of questions using PICO format (population, intervention, comparison, outcome)
 - b. search for evidence
 - c. screen results
 - d. data extraction
 - e. data assessment and synthesis
 - f. grade certainty or confidence in evidence
 - g. presentation of results to guideline panel (e.g., report, evidence and summary tables, in-person presentation to panel).
- 4) Provide orientation and guidance to guideline panel in interpreting results of systematic reviews, in developing recommendation statements, and in grading the recommendation statements. This includes providing guidance on development of consensus-based or good practice statements.
- 5) Provide critical feedback on statements and guideline document(s). * We understand need to, and will facilitate, the presentation of details on the process and, at least, some chapters at the WPATH World Congress.
- 6) Provide assistance in submission of relevant guideline modules or chapters to the National Guideline Clearinghouse (guidelines.gov).

From: [Karen Robinson](#)
To: "vin.tangpricha@emory.edu"
Subject: FW: contract language
Date: Wednesday, March 7, 2018 2:11:36 PM

Vin –

Thanks very much for the discussion just now. As promised, I have included below the email I sent to Donna yesterday.

I will work on sending back to you and Donna a new version of the contract with text about publications and use of data noting “our research team” (versus institution).

Thanks,

Karen

From: Karen Robinson
Sent: Tuesday, March 06, 2018 9:57 AM
To: 'Donna Kelly' <donna@veritasmeetingsolutions.com>; Donna Kelly <donna@wpath.org>
Subject: contract language

Donna –

I am about to have a call with Eli, Jon and Asa to discuss next steps. I hope that my team and I will be participating in the next steps.

I am happy to have a call with you and/or board members to discuss the contract language. Briefly, I cannot and Hopkins will not, sign off on a contract with the proposed language from WPATH mandating approval of any publications of research we conduct. There are two reasons for this:

1. First, Hopkins as an academic institution, and I as a faculty member therein, will not sign something that limits academic freedom in this manner. In other words, a sponsor cannot change or suppress publication of research.
2. Second, I will not sign off on language that goes against current standards in systematic reviews and in guideline development. It was my understanding that WPATH wanted to move toward the current standards for guideline development. To do so, the review team needs to be independent. (see IOM standards: <http://www.nationalacademies.org/hmd/Reports/2011/Finding-What-Works-in-Health-Care-Standards-for-Systematic-Reviews/Standards.aspx> and <http://www.nationalacademies.org/hmd/Reports/2011/Clinical-Practice-Guidelines-We-Can-Trust/Standards.aspx>).

I hope we can come to agreement. In meantime, I will keep discussion this morning to general terms and not assume that I will continue to be involved.

Thanks,

Karen

Karen A. Robinson, PhD
Director JHU Evidence-based Practice Center
Associate Professor of Medicine, Epidemiology, and Health Policy and Management
Johns Hopkins University
REDACTED

JHU_000000147

**Sponsored Research Agreement
Johns Hopkins University**

This agreement (the “Agreement”) is entered into as of this ___ day of **October, 2017** (the “Effective Date”), by and between Johns Hopkins University, on behalf of its School of Medicine, having an Office of Research Administration located at 733 North Broadway, Suite 117 Baltimore, Maryland, 21205 (“JHU”), and the World Professional Association for Transgender Health, a private non-profit organization located at 2575 Northwest Parkway, Elgin, Illinois 60124 (“Sponsor”).

WHEREAS, Sponsor wishes that JHU perform systematic reviews and other activities to support guideline development and such work is of mutual interest and benefit to the JHU and Sponsor;

WHEREAS, Karen A. Robinson, PhD, Director, JHU Evidence-based Practice Center and Associate Professor of Medicine shall be JHU’s principal investigator in conducting the research for Sponsor (“Investigator”); and

WHEREAS, the research will further JHU’s instructional, scholarship, and research objectives in a manner consistent with its status as a non-profit, tax-exempt, educational institution.

NOW, THEREFORE, in consideration of the following mutual promises, covenants, and conditions and any sums to be paid, the parties hereto agree as follows:

1. STATEMENT OF WORK

(a) JHU agrees to use its reasonable efforts to support update and development of the Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People (“Study”), as described in the statement of work for this Study (attached as Exhibit A). JHU shall perform the Study in accordance with academic standards and all applicable laws and regulations.

(b) Sponsor acknowledges that JHU and/or its researchers may be engaged in similar research not financially supported by Sponsor or subject to this Agreement. Nothing in this Agreement shall be construed to limit the freedom of JHU and/or its researchers who are participants in this Agreement, whether paid under this Agreement or not, from engaging in similar research inquiries made independently under other grants, contracts, or agreements with parties other than the Sponsor, and Sponsor shall have no rights via this Agreement to the results of such similar research.

2. INVESTIGATOR

This Study will be conducted under the direction of the Investigator identified above. In the event the Investigator should become unavailable to serve in that role, or shall no longer be employed by JHU, JHU shall have the right to designate a replacement principal investigator, subject to Sponsor’s reasonable approval. If the parties are unable to identify a mutually

acceptable replacement principal investigator within sixty (60) days of notification to Sponsor by JHU of a proposed replacement, then either party may terminate this Agreement in accordance with the termination provision of this Agreement.

3. PAYMENT

(a) In consideration of JHU conducting the Study hereunder, Sponsor shall pay JHU in the aggregate amount of One Hundred Ninety-Six Three Hundred Seven U.S. Dollars (\$196,307). Payments shall be made in accordance with the following schedule:

A quarterly payment schedule based on milestones:

1. \$49,076.75 upon initiation of project with signed contract
2. \$49,076.75 upon submission of final PICO document outlining questions for review
3. \$49,076.75 upon submission of the draft report of the systematic reviews
4. \$49,076.75 upon submission of final report of systematic reviews

(b) Payments shall be made as follows:

Payable to: **The Johns Hopkins University**
Tax I.D. Number: **52-0595110**

Payments by check shall be sent to:

**Johns Hopkins University Central Lockbox
c/o Bank of America
12529 Collections Center Drive
Chicago, IL 60693**

All electronic fund transfers should be sent to:

**c/o Bank of America
100 S. Charles Street
Baltimore, Maryland 21201
Transit/routing/ABA number: 052001633
Account number: 003936830516**

All payments shall include the following reference information:

1. Name of JHU Investigator
2. Title of the Study

4. EQUIPMENT AND PROPERTY

Unless otherwise explicitly provided, title to and ownership of all equipment, supplies, and property purchased or manufactured by JHU under this Agreement will be in and remain with JHU, even after completion or termination of the Agreement.

5. AUDIT

Authorized representatives of Sponsor or its designee shall have the right no more than once per contract year, upon reasonable and advance written notice, during regular business hours, and in accordance with JHU's applicable policies and procedures, to examine and inspect JHU's and the applicable Investigator's records associated with this Study and inspect and copy all work products relating to this Study, subject to Section 6 of this Agreement.

6. PROPRIETARY INFORMATION AND CONFIDENTIALITY

(a) "Confidential Information" means all non-public, confidential, and/or proprietary information that is marked as "Confidential Information" as described below and which is disclosed by one party to the other, including but not limited to software, inventions (whether patentable or not), algorithms, diagrams, drawings, processes, research, product or strategic plans or collaborations or partnerships, financial information, or business models. Confidential Information, if in tangible or readable form, shall be marked as such at the time of disclosure and if disclosed orally, shall be reduced to writing, marked confidential, and addressed to the other party within ten (10) days after disclosure.

(b) Both JHU and Sponsor shall have the right to refuse to accept any Confidential Information proffered to it by the other. If necessary, the parties will exchange Confidential Information only under the provisions set forth herein. The party who receives Confidential Information (the "Receiving Party") shall (i) hold the Confidential Information in confidence using the same care it affords its own confidential information of a similar nature, but not less than a reasonable degree of care; (ii) use the Confidential Information only for the performance of this Agreement; and (iii) restrict disclosure of the Confidential Information to employees whose duties justify the need to know the Confidential Information in furtherance of the performance of this Agreement and who are advised as to the confidential nature of the information and required to comply with the provisions of this Agreement. The Receiving Party shall not provide any third parties with access to the Confidential Information unless such third party has agreed to be bound by confidentiality and non-disclosure obligations in a form of an agreement reasonably acceptable to the party disclosing the Confidential Information (the "Disclosing Party").

(c) Confidential Information shall not include any information disclosed that the Receiving Party can demonstrate (i) previously was in its possession, without violation of any obligation of confidentiality; (ii) was received from a third party without violation of any obligation of confidentiality; (iii) was publicly known and made generally available prior to such disclosure; (iv) becomes publicly known and made generally available, through no action or inaction of the Receiving Party, after such disclosure; or (v) was independently developed without use of any Confidential Information by employees or consultants of the Receiving Party.

(d) If the Receiving Party is required to disclose Confidential Information by order of a court of competent jurisdiction, administrative agency or governmental body, or by subpoena, summons, or other legal process, the Receiving Party shall provide the Disclosing Party with prompt written notice of such required disclosure so that the Disclosing Party may seek a protective order or take other appropriate action, cooperate reasonably with Disclosing Party in connection with Disclosing Party's efforts to seek such relief, and thereafter to disclose only the minimum information required to be disclosed in order to comply.

(e) Upon termination of this Agreement or the Disclosing Party's request, Confidential Information shall be promptly returned to the Disclosing Party or destroyed, with such destruction confirmed in writing. The Receiving Party may retain one archival copy of such Confidential Information, for the purpose of fulfilling its obligations under this Agreement.

(f) The obligations of confidentiality under this Section shall continue for a period of three (3) years following conclusion or early termination of this Agreement.

7. DATA USE AND PUBLICATIONS

The term "Project Data" as used herein includes, among others, raw data, research data, records, reports, notes, tables, writing, sound recordings, pictorial reproduction, drawings or other graphical representations, and works of any similar nature (whether or not copyrighted) which are generated or specified to be delivered by the JHU evidence review team in connection with the Project under this Agreement. Notwithstanding anything to the contrary contained in this Agreement, WPATH shall retain the unrestricted right to use the Project Data, or any part thereof at any time, in any manner and for any purpose, including the publication of the Project Data and the communication of Project Data to third parties. No other parties other than the JHU evidence review team will have any access to the Project Data without written permission by WPATH. Prior to the publication of the Project Data or any part thereof by the JHU evidence review team, WPATH shall have thirty (30) days in which to review and comment on the proposed publication. The JHU evidence review team will give due regard to WPATH's comments. WPATH has the right to request the deletion of any Confidential Information.

8. TERM AND TERMINATION

(a) Unless earlier terminated in accordance with subsection (b) of this Section, the term of this agreement shall commence on the Effective Date and shall terminate on _____.

(b) This Agreement may be terminated if any of the following events occur: (i) for convenience by either party upon sixty (60) days written notice to the other party; (ii) either party materially breaches this Agreement, and the non-breaching party provides the breaching party with thirty (30) days advance written notice of termination and such breach is not remedied within such thirty (30) day period; (iii) Sponsor files for creditor protection under any section of the U.S. Bankruptcy Code; and/or (iv) a bankruptcy trustee or receiver is appointed for Sponsor.

Upon written notice, JHU shall proceed in an orderly fashion to limit or terminate any outstanding commitments and to conclude the work. All costs incurred by JHU associated with termination shall be allowable including, without limitation, all non-cancelable costs or commitments incurred or obligated and work performed prior to the effective date of termination, which shall include all appointment of research staff prior to the effective date of termination.

9. INDEMNIFICATION

Sponsor (the “Indemnifying Party”) shall indemnify, defend, and hold harmless JHU, its trustees, officers, employees, students, agents, and representatives (collectively, the “JHU Indemnitees”) from and against any and all losses, liability, cost, and expenses, including attorney’s fees and costs, awards, judgments, damages, fines, penalties, claims, and causes of action (collectively, “Claims”) arising out of or related to the negligent acts or omissions or misconduct of the Indemnifying Party or any of its officers, directors, employees, agents, representatives, contractors, successors, assigns, or anyone acting on any of their behalf in connection with, arising from, or related to the performance of the Indemnifying Party’s obligations under this Agreement, including Claims for (i) personal injury, including death, and damage to property; (ii) the breach by the Indemnifying Party of any term, representation, warranty, or covenant under this Agreement; or (iii) any use by Indemnifying Party of the research data or results including use of any intellectual property generated in the research that is provided hereunder. JHU shall not be liable to Sponsor, its officers, employees, agents, representatives, contractors, successors, assigns, or anyone acting on any of their behalf for injuries or losses arising out of the use by the Sponsor of the Study’s research data or results.

10. NOTICES

With the exception of Study funds paid by Sponsor pursuant to Section 3 hereof, all notices required or permitted to be given under this Agreement shall be in writing and shall be sent by certified or registered mail, postage prepaid, or by overnight courier, with proof of delivery by receipt, to the following address (or as either party shall designate by written notice to the other party):

If to Sponsor:

If to JHU:

original to: Michael B. Amey
Senior Associate Dean, Research Affairs
Johns Hopkins University School of Medicine
Office of Research Administration

733 North Broadway, Suite 117
Baltimore, Maryland 21205

copy to: Investigator

11. INDEPENDENT CONTRACTORS

JHU and Sponsor shall each be and remain an independent contractor with respect to all rights and obligations arising under this Agreement. Nothing contained in this Agreement shall be deemed or construed to create a relationship of employment, principal and agent, partnership, co- or joint employer, or joint venture. Sponsor shall not permit any of its officers, directors, agents, employees, representatives, contractors, successors, assigns, or anyone acting on their behalf to represent or hold out itself or themselves as employees, agents, or representatives of JHU or as authorized to make any commitment to incur any obligation on behalf of JHU.

12. USE OF OTHER PARTIES' NAMES

Sponsor shall not (a) issue a press release or make any other public statement that references this Agreement or discloses the Study results; or (b) use the names, logos, or trademarks (or derivatives thereof) of JHU, or its staff, contractors, or sub-contractors, for publicity or advertising purposes, except with the prior written consent of JHU, which consent may be withheld in JHU's sole discretion. All requests for JHU approval shall be directed to the JHU Office of Communications. JHU shall not use the names, logos, or trademarks of Sponsor, or its staff, contractors, or sub-contractors, for publicity or advertising purposes, except with the prior consent of Sponsor. Notwithstanding the foregoing, Sponsor acknowledges and agrees that JHU and its Investigator may disclose the existence of the funding support from Sponsor in any publication of the research, and as required by law.

13. WARRANTY DISCLAIMERS

JHU DISCLAIMS AND MAKES NO WARRANTIES OF ANY KIND, EITHER EXPRESS OR IMPLIED, AS TO ANY MATTER, INCLUDING BUT NOT LIMITED TO WARRANTY OR FITNESS FOR A PARTICULAR PURPOSE, MERCHANTABILITY, PATENTABILITY, OR THAT THE SPONSOR'S USE OF THE STUDY RESEARCH RESULTS WILL BE FREE FROM INFRINGEMENT OF PATENTS, COPYRIGHTS, TRADEMARKS, OR OTHER RIGHTS OF THIRD PARTIES.

14. EXPORT CONTROLS

Both parties shall comply with the United States laws and regulations controlling the export of technical data, computer software, laboratory prototypes, and other commodities (including the Arms Export Control Act, as amended, and the Export Administration Act of 1979). JHU's obligations hereunder are contingent on its ability to comply with applicable United States export and embargo laws and regulations. It is the expectation of JHU that the work done by JHU under this Agreement shall constitute fundamental research as defined under the export control laws and regulations. As an institution of higher learning, JHU does not wish to take receipt of

export controlled information except as may be knowingly and expressly agreed to in a writing signed by an authorized representative of JHU and for which JHU has made specific security arrangements. Sponsor agrees that it shall not provide or make accessible to JHU any export controlled materials (including, without limitation, equipment, information, and/or data) without first informing JHU of the export-controlled nature of the materials and obtaining from JHU's Export Compliance Office prior written consent to accept such materials, as well as any specific instructions regarding the mechanism pursuant to which such materials should be passed to JHU. JHU may decide, in its sole discretion, that it is not willing accept such materials. Sponsor agrees to comply with any and all applicable United States export control laws and regulations, as well any and all embargoes and/or other restrictions imposed by the Treasury Department's Office of Foreign Asset Controls.

15. SEVERABILITY

If any provision or a portion of any provision of this Agreement is held to be invalid, illegal, or unenforceable by a court of competent jurisdiction, the validity, legality, and enforceability of the remaining provisions of this Agreement shall not be affected or impaired in any way.

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The terms of this Agreement which by their nature and for any reason are intended to survive and extend beyond the termination, cancellation, or expiration of this Agreement, shall remain in effect and be binding upon the parties beyond such time. Such terms shall include without limitation those that confer rights based on prior breaches or performance.

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No amendment, modification, or addition to this Agreement will be binding upon the parties hereto unless reduced to writing and signed by an authorized representative of each party.

18. GOVERNING LAW

The laws of the State of Maryland, without giving effect to its choice of law provisions, shall govern all matters arising out of or relating to this Agreement, including, without limitation, its interpretation, construction, performance, and enforcement. Any legal suit, action, or proceeding arising out of or relating to this Agreement shall be brought in the Circuit Court for Baltimore City or in the United States District Court for the District of Maryland. Each of the parties waives, to the fullest extent permitted by law, any objection which it may now or later have to the exclusive jurisdiction of or the laying of venue in the Circuit Court for Baltimore City, Maryland or the United States District Court for the District of Maryland, including any objections based upon inconvenient forum. The parties agree that a final judgment in any such suit, action, or proceeding may be enforced in other jurisdictions as provided by law.

19. FORCE MAJEURE

Neither party will be responsible for or liable to the other party for non-performance or delay in

performance of any terms or conditions of this Agreement due to acts or occurrences beyond the reasonable control of the nonperforming or delayed party. Such causes include, but are not limited to, acts of God, acts of government, embargoes, terrorism, wars, riots, strikes or other labor disputes, shortages of labor or materials, hurricanes, fires, floods, or any other circumstances of like character. The party whose performance is delayed or prevented shall promptly provide to the other party written notice of the existence of and the reason for such non-performance or delay, and shall work diligently to mitigate its effects and make best efforts to resume performance as soon as practicable.

20. ENTIRE AGREEMENT

This Agreement, including any exhibits, attachments, and documents referenced herein, which are incorporated into this Agreement, constitutes the final agreement between the parties. It is the complete and exclusive expression of the parties' agreement on the matters contained in this Agreement. All prior and contemporaneous negotiations and agreements between the parties on the matters contained in this Agreement are expressly merged into and superseded by this Agreement. In entering into this Agreement, neither party has relied upon any statement, representation, warranty, or agreement of the other party except for those expressly contained in this Agreement. There are no conditions precedent to the effectiveness of this Agreement other than those expressly stated in this Agreement.

21. HEADINGS

The headings in this Agreement are for the convenience of reference only and are not substantive parts of this Agreement nor shall they affect its interpretation.

22. ASSIGNMENT AND DELEGATION

Sponsor may not assign this Agreement nor assign any of its rights under this Agreement, except with the prior written consent of JHU. Sponsor may not delegate any part of its performance under this Agreement without the prior written consent of JHU, which may be withheld in its sole discretion. Any purported assignment of rights or delegation of performance in violation of this Section 24 is void.

23. BINDING AGREEMENT ON SUCCESSORS

This Agreement shall be binding upon each party's successors and assigns.

24. WAIVER

Failure on the part of any party, in any or more than one instance, to insist upon the performance of any of the terms, covenants, or conditions of this Agreement or to exercise any right or privilege contained within this Agreement, or the waiver by any party of any breach of any of the terms, covenants, or conditions of this Agreement shall not be construed as thereafter waiving any such terms, covenants, conditions, rights, or privileges, but the same shall continue and

remain in full force and effect, as if no such forbearance of waiver had occurred.

25. COUNTERPARTS

This Agreement may be executed in multiple counterparts, and by either party on separate counterpart, including by facsimile or PDF delivery, each of which is deemed an original and all of which constitute one and the same agreement.

In Witness Whereof, the parties have caused this Agreement to be executed by their duly authorized representatives as of the Effective Date.

JOHNS HOPKINS UNIVERSITY

SPONSOR

By: _____

By: _____

Name: Stephen B. Fisher

Name: _____

Title: Associate Director, ORA

Title: _____

Date: _____

Date: _____

Read and Agreed to abide by the terms contained herein, but not as a party hereto:

Investigator



Policy & Procedures Regarding the use of WPATH SOC8 data

Background to the Policy

In April 2018 WPATH commissioned John Hopkins University (JHU) to support the development of the 8th edition of the Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People (SOC8). WPATH entered into a Sponsored Research Agreement with Johns Hopkins University on behalf of its School of Medicine with Dr Karen A. Robinson, Director at JHU Evidence-based Practice Center as principal investigator in conducting the research for WPATH. WPATH contracted Dr Robinson and her team to perform systematic literature reviews and other activities to support the development of the 8th edition of SOC.

The contract between WPATH and JHU states the following regarding Data use and Publications: “the term "Data" principally includes raw data, research data, records, reports, notes, tables, writing, sound recordings, pictorial reproduction, drawings or other graphical representations, and works of any similar nature (whether or not copyrighted) which are generated or specified to be delivered by Dr Robinson and her team in connection with the update and development of the SOC8”.

“Notwithstanding anything to the contrary contained in the contract between WPATH and JHU, WPATH shall retain the unrestricted right to use the Data, or any part thereof at any time, in any manner and for any purpose, including the publication of the Data and the communication of Data to third parties. No other parties other than Dr Robinson and her team will have any access to the Data without written permission by WPATH. Prior to the publication of the Data or any part thereof by Dr Robinson and her team, WPATH shall have thirty (30) days in which to review and comment on the proposed publication. Dr Robinson and her team will give due regard to WPATH's comments. WPATH has the right to request the deletion of any content within materials intended for publication by Dr Robinson and her team*”.

*WPATH Policy Use of Data for SOC8
Approved by WPATH Board of Directors*

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Since the start of the contract between WPATH and JHU Dr Robinson and her team have provided systematic literature reviews for the development of statements of the following chapters: Assessment, Primary Care, Endocrinology, Surgery, Reproductive Medicine, and Voice Therapy. Dr Robinson and team have also provided guidance regarding the methodology of the SOC8 and feedback for some of the statements.

Aim of the Policy

WPATH commissioned and financed an update and the development of the SOC8 for the benefit of transgender healthcare in order to promote health, research, education, respect, dignity, and equality for trans people globally.

Therefore, the aim of this policy is to develop a process to ensure that any manuscripts developed from the systematic literature reviews commissioned by WPATH benefit transgender healthcare and promote health, research, education, respect, dignity, and equality for transgender people globally.

A decision-making process to give access to the Data should be underpinned by a number of good practice directives. Hence, WPATH grants access to the data to any interested party, which:

- a. has the intention to use the Data for the benefit of advancing transgender health in a positive manner and;
- b. has the intention to publish the Data in reputable, academic, peer-reviewed journals and;
- c. involves the Work Group Leader of the Chapter or, alternatively, a designated representative of that specific SOC8 Chapter, or alternatively the Chair or Co-Chairs of the SOC8 in the design, drafting of the article, and the final approval of the article and;
- d. involves at least one member of the transgender community in the design, drafting of the article, and the final approval of the article and**;
- e. adheres to the WPATH Language Policy***.

Pathway to approval for use of WPATH Data

WPATH grants approval to use the Data for publication to any interested party, when:

WPATH Policy Use of Data for SOC8
Approved by WPATH Board of Directors

JHU_00001905

- a. the directives outlined under the aim of this policy have been fulfilled and;
- b. the author(s) have acknowledged that WPATH has sponsored the acquisition of the data in the publication and;
- c. the author(s) have acknowledged that the authors are solely responsible for the content of the manuscript, and the manuscript does not necessarily reflect the view of WPATH in the publication and;
- d. The publication (“manuscript”) has been approved by WPATH via a designated approval process.

Designated approval process for publication of the Data

- a. Author(s) submit publication to WPATH
- b. It is WPATH Executive Committee’s responsibility to ensure that the manuscript is disseminated to the Chair of the SOC8, the Co-Chairs of the SOC8, and the members of the WPATH Board of Directors within 7 days after receipt of the manuscript.
- c. It is WPATH Executive Committee’s responsibility to ensure that a vote is held within 14 days after the dissemination of the manuscript to the Chair and Co-Chairs of the SOC8 and Board members.
- d. It will be a blind vote and approval is granted to author(s) for publication by majority vote. The Chair and Co-Chairs of the SOC8 and Board members all have one equal vote. In case of a bind, the WPATH President will have the deciding vote.
- e. It is the President’s responsibility to respond to the author(s) with approval or disapproval within thirty (30) days of submission of the manuscript to WPATH.
- f. In case of disapproval, the President may decide to hold a special meeting with the Chair and Co-Chairs of the SOC8 and Board members to discuss the manuscript and the reasons for not approving publication.

- * This will be referred to as “Confidential Information”, which means all non-public, confidential, and/or proprietary information that is marked as “Confidential Information” as described below and which is disclosed by one party to the other, including but not limited to software, inventions (whether patentable or not), algorithms, diagrams, drawings, processes, research, product or strategic plans or

collaborations or partnerships, financial information, or business models. Confidential Information, if in tangible or readable form, shall be marked as such at the time of disclosure and if disclosed orally, shall be reduced to writing, marked confidential, and addressed to the other party within ten (10) days after disclosure.

- ** See T'Sjoen, G., Motmans, J., Arcelus, J., & Bouman, W. P. (2017). The need of patient involvement in transgender healthcare research. *Journal of Sexual Medicine*, 14(12), 1494-1495.
- Bouman, W. P., Arcelus, J., T'Sjoen, G., De Cuypere, G., Galupo, M. P., Kreukels, B. P. C., Leibowitz, S., Riggs, D. W., Schechter, L. S., & Veale, J. (2018). Transgender and gender diverse people's involvement in transgender health research. *International Journal of Transgenderism*, 19(4), 357-358 or <https://www.tandfonline.com/doi/full/10.1080/15532739.2018.1543066>
- *** See Bouman, W. P., Suess, A., Motmans, J., Green, J., Deutch, M., Adams, N., Safer, J., Smiley, A., and Winter, S. (2017). Language and transgender health. *International Journal of Transgenderism*, 18(1), 1-6 or <https://www.tandfonline.com/doi/full/10.1080/15532739.2016.1262127>

Checklist for JHU SOC8 systematic review papers

Title of Paper: Hormone Therapy, Mental Health, and Quality of Life among Transgender People: A Systematic Review

Supporting Chapter: initial question part of questions from Hormone Chapter

Proposed Authors: Kellan E. Baker, MPH, Lisa M. Wilson, ScM, Ritu Sharma, BSc, Vadim Dukhanin, MD, MHS, Kristen McArthur, BA, Karen A. Robinson, PhD

Acknowledged Authors: None

Yes or No	This paper provides data that advances the knowledge in the field of transgender health in a positive way
Yes or No	This paper will be published in a reputable, academic, peer-reviewed journal
	Journal proposed for first submission The Lancet Diabetes & Endocrinology
Yes or No	Involves the work group leader of the chapter or alternatively a designated representative of that specific SOC8 Chapter in the design, drafting of the article and final approval of the article
	Name of persons involved <i>chapter members provided original list of questions for reviews</i>
Yes or No	Involves at least one member of the transgender community in the design, drafting of the article and final approval of the article <i>chapter members provided original list of questions for reviews</i>
	Name of person if not open about trans status, if not open about trans status then enter N/A
Yes or No	Adheres to the WPATH language policy

Meta-Analysis

Hormone Therapy, Mental Health, and Quality of Life Among Transgender People: A Systematic Review

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Abbreviations: BDI, Beck Depression Inventory; ENIGI, European Network for the Investigation of Gender Incongruence; GnRH, gonadotropin-releasing hormone; HADS, Hospital Anxiety and Depression Scale; QOL, quality of life; RCT, randomized controlled trial; SF-36, Short Form-36 Health Survey; WPATH, World Professional Association for Transgender Health.

Received: 5 October 2020; Editorial Decision: 25 January 2021; First Published Online: 2 February 2021; Corrected and Typeset: 19 February 2021.

Abstract

We sought to systematically review the effect of gender-affirming hormone therapy on psychological outcomes among transgender people. We searched PubMed, Embase, and PsycINFO through June 10, 2020 for studies evaluating quality of life (QOL), depression, anxiety, and death by suicide in the context of gender-affirming hormone therapy among transgender people of any age. We excluded case studies and studies reporting on less than 3 months of follow-up. We included 20 studies reported in 22 publications. Fifteen were trials or prospective cohorts, one was a retrospective cohort, and 4 were cross-sectional. Seven assessed QOL, 12 assessed depression, 8 assessed anxiety, and 1 assessed death by suicide. Three studies included trans-feminine people only; 7 included trans-masculine people only, and 10 included both. Three studies focused on adolescents. Hormone therapy was associated with increased QOL, decreased depression, and decreased anxiety. Associations were similar across gender identity and age. Certainty in this conclusion is limited by high risk of bias in study designs, small sample sizes, and confounding with other interventions. We could not draw any conclusions about death by suicide. Future studies should investigate the psychological benefits of hormone therapy among larger and more diverse groups of transgender people using study designs that more effectively isolate the effects of hormone treatment.

Key Words: Transgender, hormone therapy, sex hormones, mental health, systematic review

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Transgender people are those whose gender identity is different from the sex they were assigned at birth. Estimates of the size of the transgender population vary depending on how the data are collected [1]. In studies that rely on clinical records, estimates range between 1 and 30 people per 100 000 (0.001% to 0.03%) [2]. Studies that focus instead on self-report among nonclinical populations find estimates that range between 0.1% and 2% [2].

Many transgender people seek medical services to affirm their gender identity. According to the *Standards of Care for Transsexual, Transgender, and Gender Non-Conforming People* maintained by the World Professional Association for Transgender Health (WPATH), gender-affirming medical care is different for each individual and may include a variety of services and procedures, such as psychological support, hormone therapy, and surgeries [3]. Hormone therapy, which typically involves estrogens and anti-androgens for transgender women and other trans-feminine people and testosterone for transgender men and other trans-masculine people, is a common component of medical gender affirmation [4]. Because hormone treatment can have a powerful effect on physical appearance, it is often a priority for transgender people seeking medical gender affirmation [5]. Gender-affirming hormone therapy can be managed for most patients by primary care providers, as it typically involves long-term maintenance on doses similar to those used for cisgender patients with conditions such as hypogonadism [6, 7]. Some clinicians require a minimum period of psychological counseling before hormone therapy can be initiated, while others provide hormone therapy on the basis of informed consent [8].

The need for gender-affirming care is often characterized using psychiatric diagnoses such as gender dysphoria, which replaced gender identity disorder in the fifth edition of the *Diagnostic and Statistical Manual of Mental Disorders* (DSM-5) [9]. The 11th International Classification of Diseases (ICD-11) replaces these terms with a diagnosis called gender incongruence (codes: HA60, HA61, HA6Z), which is located in a new chapter on sexual health. These changes clarify that the target of gender-affirming medical interventions is not the person's gender identity itself but rather the clinically significant distress that can accompany a misalignment between gender identity and sex assigned at birth [10]. Some countries have further underscored that transgender identity is not a pathology by recognizing gender affirmation as fundamental to the human right to self-definition and removing requirements that transgender people seeking gender-affirming medical care present with a diagnosis such as gender dysphoria [11].

Several previous reviews have indicated that gender-affirming hormone therapy is associated with psychological benefits that include reductions in depression and anxiety

and improvements in quality of life (QOL) among transgender people [12-17]. Most of these reviews did not require a minimum duration of hormone therapy [14-17]. One review that did impose a minimum follow-up requirement is 10 years old [12]. The other that required a minimum of 3 months of therapy included only uncontrolled prospective cohorts, which resulted in a sample of only 3 studies [13]. A comprehensive review without a minimum follow-up period assessed gender-affirming hormone therapy and surgeries only in adolescents [17]. By requiring a minimum duration of hormone treatment but considering all ages and a variety of study designs, we sought to update and more completely summarize the growing evidence base regarding the relationship between gender-affirming hormone therapy and psychological outcomes in transgender people.

Search Strategy and Selection Criteria

This review is one of a series of systematic reviews on gender-affirming care conducted for WPATH to inform the eighth revision of the *Standards of Care*. The protocol is registered on PROSPERO (CRD42018115379) [18], and we followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines in reporting our findings [19].

We searched PubMed, Embase, and PsycINFO from inception to October 2018 and updated the search through June 10, 2020, for studies assessing QOL, depression, anxiety, and death by suicide among transgender participants of any age in the context of gender-affirming hormone therapy [20]. We also reviewed the reference lists of previous reviews and hand-searched the *International Journal of Transgenderism*. Using DistillerSR [21], 2 reviewers independently screened titles, abstracts, and full-text articles. Differences were resolved through consensus adjudication.

We included studies that evaluated the psychological effects of any testosterone, estrogen, or anti-androgen formulation used for gender affirmation. We also considered gonadotropin-releasing hormone (GnRH) analogues used as anti-androgens or for puberty delay. Study participants must have been on hormone therapy for at least 3 months in order to reflect a minimum time for expected onset of effects [3]. Health care provider supervision was not required. We excluded studies that did not state therapy type and duration, including the range for cross-sectional studies. We included studies regardless of language (the search terms were in English) and country of origin, and we accepted any study design except case reports.

We created standardized forms for data extraction using the Systematic Review Data Repository system. The data extracted included participant demographics; study design

and methods; hormone therapy type, dose, and duration; potential confounders such as gender-affirming surgery status; outcome scales [20]; and psychological outcomes. From studies that used the Short Form-36 Health Survey (SF-36) to measure QOL, we extracted scores in all domains [22]. For studies that used measures with depression or anxiety subscales, we extracted only the subscale scores corresponding to the psychological outcomes of interest (eg, the depression subscale of the Minnesota Multiphasic Personality Inventory [MMPI]). We extracted comparisons with cisgender controls or general population norms only when longitudinal findings in a transgender population or comparisons with an untreated transgender control group were not reported. We used WebPlotDigitizer to extract data reported only in figures [23].

Two reviewers independently assessed risk of bias [20]. For randomized controlled trials (RCTs), we used the revised Cochrane tool [24]. For non-randomized studies, we used the Cochrane Risk of Bias Assessment Tool for Non-Randomized Studies of Interventions (ROBINS-I) [25]. One reviewer graded strength of evidence for each outcome using the Agency for Healthcare Research and Quality Methods Guide for Conducting Comparative Effectiveness Reviews [26]. We considered the directionality and magnitude of effects reported in cross-sectional studies as additional context for our evaluation of evidence from trials and prospective and retrospective cohorts. Each strength of evidence assessment was confirmed by a second reviewer.

WPATH provided the research question and reviewed the protocol, evidence tables, and report. WPATH had no role in study design, data collection, analysis, interpretation, or drafting. The corresponding author had full access to all the data and had final responsibility for the decision to submit for publication. The authors are responsible for all content, and statements in this report do not necessarily reflect the official views of or imply endorsement by WPATH.

Results

We retrieved 1753 nonduplicate studies for the broader systematic review project of which this review was a part (Fig. 1). After screening and full-text review for the specific research question on the psychological effects of gender-affirming hormone therapy, 20 studies reported in 22 publications were included (Table 1): 1 RCT [27], 2 before-after trials [28, 29], 12 prospective cohorts reported in 13 publications [30-42], 1 retrospective cohort reported in 2 publications [43, 44], and 4 cross-sectional studies [45-48]. De Vries (2014) [35] reported on a subset of the participants in de Vries (2011) [34] who continued in care. We counted these publications as a single study but extracted and reported data separately because the characteristics of the

study's adolescent population changed substantially in the period between the 2 publications. Similarly, Asscheman (2011) [44] reported on an extension of Asscheman (1989) [43]; we counted these as a single study but extracted data separately. In Table 1 and in the subsequent tables for each outcome, studies are ordered first by study design (RCTs, before-after trials, prospective cohorts, retrospective cohorts, and cross-sectional studies); within these categories, studies are presented in the following order according to how the study results were reported: adult transgender women only, adult transgender men only, adult transgender women and transgender men together, and transgender adolescents (no study reported separate results by gender identity for transgender youth). Where multiple studies shared the same study design and population, they are additionally ordered chronologically.

The time frame covered in the included studies began in 1972 [43], but most studies dated from post-2000. Eight studies were conducted in Italy [27-29, 31, 32, 36, 39, 41]; 2 each in Belgium [37, 48], the Netherlands [34, 35, 43, 44], the United States [30, 47], and Spain [38, 45]; and 1 in the United Kingdom [33], Turkey [42], and France [46]. One study recruited participants from Switzerland and Germany [40]. One study was part of the European Network for the Investigation of Gender Incongruence (ENIGI), which is a research collaborative between clinics providing gender-affirming care to transgender people in Ghent (Belgium), Amsterdam (Netherlands), Oslo (Norway), and Hamburg (Germany). The ENIGI study included in this review drew participants only from the Ghent clinic [37].

The study sizes ranged from 20 to 1331, although most had fewer than 60 participants. Fourteen studies reported on testosterone formulations in adult transgender men [27, 29, 31-33, 36, 39-46, 48]. These formulations were typically injectable testosterone cypionate or enanthate, although some studies used long-acting injectable testosterone undecanoate or daily transdermal gels. Ten studies reported on estrogen formulations in adult transgender women, usually in conjunction with an anti-androgen such as cyproterone acetate or spironolactone [28, 31, 33, 36, 37, 39, 43-47]. Estrogen formulations included transdermal, oral, or injectable estradiol (commonly estradiol valerate) or conjugated estrogens. Three studies reported on the psychological effects of GnRH therapy for puberty delay among mixed-gender groups of transgender adolescents [30, 34, 35, 38]. No study reported on hormone therapy among nonbinary people.

All studies that reported information about recruitment drew their participants largely or exclusively from specialized clinics dedicated to providing gender-affirming care for transgender people. These clinics were typically part of larger systems such as university hospitals. Clinic-based

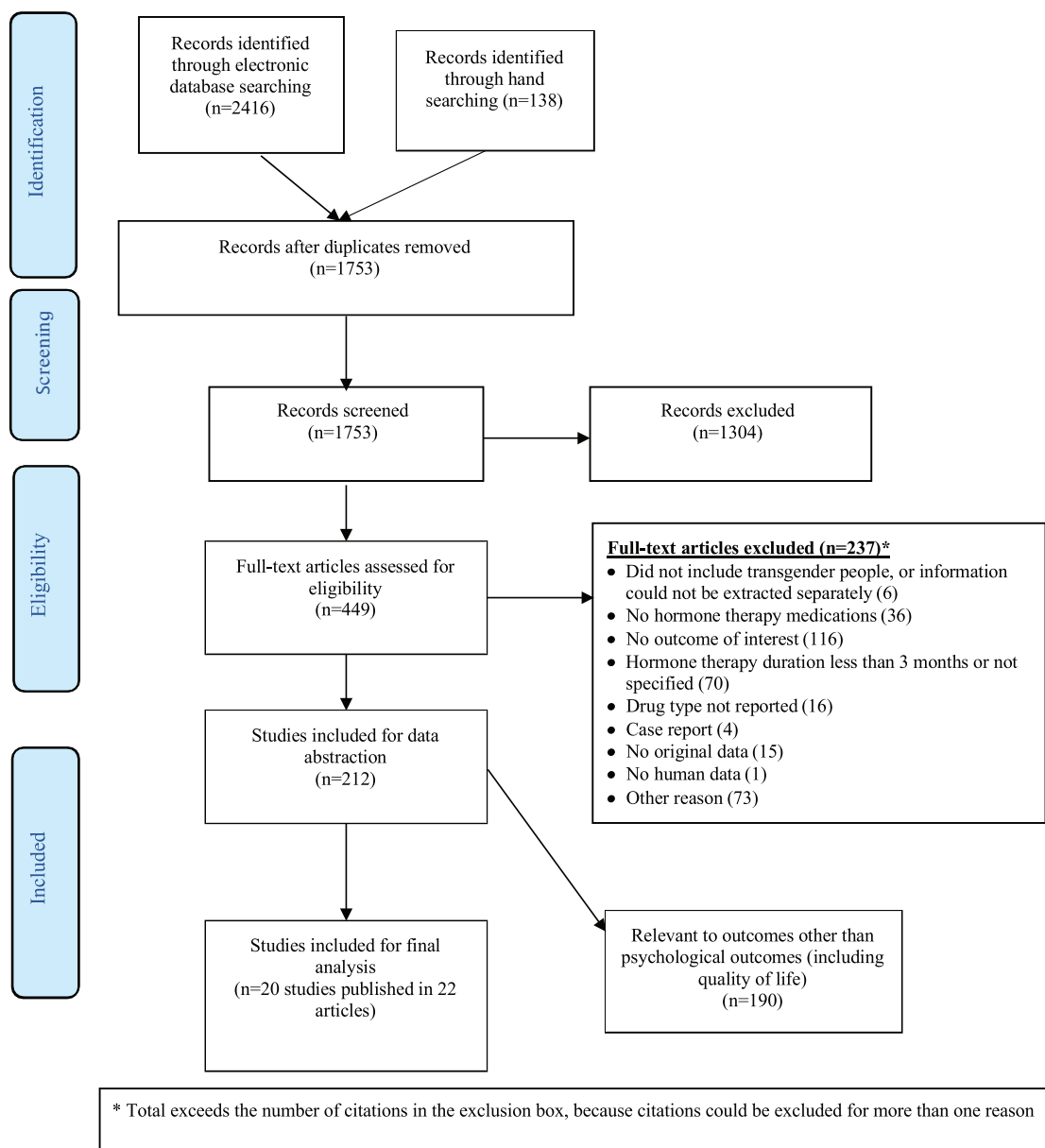


Figure 1. PRISMA flow diagram.

studies often applied strict eligibility criteria that included a period of psychiatric evaluation and a formal diagnosis of gender dysphoria before hormone therapy was initiated. Some studies also reported that psychological counseling was either available or required during the course of hormone therapy. In many cases, hormone therapy was considered a prerequisite for gender-affirming surgeries. The type and timing of gender-affirming surgeries and the proportion of participants for whom hormone therapy and surgeries were assessed simultaneously varied widely: some studies assessed only participants who had not had any type of gender-affirming surgery [27, 28, 30-32, 34, 36, 38-40, 42, 46, 47], while in others some or all participants

underwent gender-affirming surgeries during the study period [29, 33, 35, 43-45, 48].

Quality of Life

Seven studies, including 1 RCT [27], 2 before-after trials [28, 29], 2 prospective cohorts [30, 39], and 2 cross-sectional studies [46, 48], assessed QOL (Table 2). An RCT found an improvement of approximately 5.5 points on a 10-point measure of life satisfaction across 3 groups of transgender men (n = 15 each) after 1 year of testosterone treatment ($P < 0.05$) [27]. A before-after trial similarly reported that life satisfaction scores almost

Table 1. Studies Reporting Effects of Gender-Affirming Hormone Therapy on Psychological Outcomes Among Transgender People

Author, year Location Study name	Study design	Start year	Transgender population	Overall N	Age in years	Baseline HT status	Outcomes	GAS status	Risk of bias
Pelusi, 2014 [27] Italy	Randomized controlled trial ^a	NR	Men	45	Mean: 29.5	No previous HT	QOL	No GAS before or during study	High
Gava, 2016 [28] Italy	Before-after trial	NR	Women	40	Mean: 3.2 (range, 19–55)	No previous HT	QOL, Depression	No GAS before or during study	Low
Gava, 2018 [29] Italy	Before-after trial ^a	NR	Men	50	Mean: 30.1 (range, 21–42)	No previous HT	QOL	72% (n = 36) had gonadectomy during study	Serious
Fuss, 2015 [37] Belgium	Prospective cohort	2010	Women	20	Mean: 33.9 (range, 17–48)	No previous HT	Anxiety	NR	Serious
ENIGI (NCT01072825)									
Costantino, 2013 [32] Italy	Prospective cohort	2001	Men	50	Mean: 29.8	No previous HT	Depression	No GAS before or during study	Serious
Motta, 2018 [41] Italy	Prospective cohort	2013	Men	52	Mean: 28.3	No previous HT	Anxiety	NR	Moderate
Turan, 2018 [42] Turkey	Prospective cohort ^b	NR	Men	37	Mean: 24.6	No previous HT	Depression, Anxiety	No GAS before or during study	Moderate
Metzger, 2019 [40] Switzerland, Germany	Prospective cohort ^b	2013	Men	23	Mean: 27.2 (range, 18–51)	No previous HT	Depression	No GAS before or during study	Moderate
Colizzi, 2014 [31] Italy	Prospective cohort	2008	Women and men	107	Mean: 29.2	No previous HT	Depression, Anxiety	No GAS before or during study	Low
Manieri, 2014 [39] Italy	Prospective cohort	NR	Women and men	83	Mean: 32.7 (women), 30.2 (men)	No previous HT	QOL	No GAS before or during study	Moderate
Fisher, 2016 [36] Italy	Prospective cohort	2012	Women and men	54	Mean: 32.5 (women), 26.3 (men)	No previous HT	Depression	No GAS before or during study	Low
Defreyne, 2018 [33] UK	Prospective cohort	2012	Women and men	155	Median: 27 (range, 18–52)	No previous HT	Depression, Anxiety	Some had GAS during study; % and type NR	Serious
Asscheaman, 1989 [43] Netherlands	Retrospective cohort ^{b,d}	1972	Women and men	425	Median: 32 (women, range, 16–67); 25.4 (men, range, 16–54)	Previous HT for at least 6 months	Death by suicide	78% (n = 235) of transgender women had GAS during study; data NR for transgender men	Serious

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Table 1. Continued

Author, year Location Study name	Study design	Start year	Transgender population	Overall N	Age in years	Baseline HT status	Outcomes	GAS status	Risk of bias
Asscheman, 2011 [44] Netherlands	Retrospective cohort ^{a,d}	1975	Women and men	1331	Mean: 31.4 (women, range, 16–76); 26.1 (men, range, 16–57)	Previous HT for at least 1 year	Death by suicide	87% (n = 834) of transgender women and 94% (n = 343) of transgender men had GAS during study	Serious
Leavitt, 1980 [47] US	Cross-sectional	1976	Women	41	Range, 18–35	54% (n = 22) on HT	Depression	No previous GAS	Serious
Wierckx, 2011 [48] Belgium	Cross-sectional ^b	2009	Men	47	Mean: 37 (range, 22–54)	100% on HT	QOL	100% had GAS, but not within previous year	Serious
Gómez-Gil, 2012 [45] Spain	Cross-sectional	NR	Women and men	187	Mean: 29.9 (range, 15–61)	64% (n = 120) on HT	Depression, Anxiety	42% (n = 79) of all participants and 64% on HT had previous GAS	Serious
Gorin-Lazard, 2012 [46] France	Cross-sectional ^b	NR	Women and men	61	Mean: 34.7	72% (n = 44) on HT	QOL	No previous GAS	Serious
de Vries, 2011 [34] Netherlands	Prospective cohort	2000	Girls and boys	70	Mean: 14.8 (range, 11.3–18.6)	No previous HT	Depression, Anxiety	No GAS before or during study	Moderate
de Vries, 2014 [35] Netherlands	Prospective cohort ^{b,c}	2000	Girls and boys	55	Mean: 14.8 (range, 11.5–18.5)	No previous HT	Depression, Anxiety	100% had GAS during study	Serious
Achille, 2020 [30] US	Prospective cohort	2013	Girls and boys	50	Mean: 16.2	No previous HT	QOL, Depression	No GAS before or during study	Moderate
López de Lara, 2020 [38] Spain	Prospective cohort ^b	2018	Girls and boys	23	Mean: 16 (range, 14–18)	No previous HT	Depression, Anxiety	No GAS before or during study	Moderate

Abbreviations: ENIGI, European Network for the Investigation of Gender Incongruence; GAS, gender-affirming surgery; HT, hormone therapy; NR, not reported; QOL, quality of life.

^a25 participants were included in both Pelusi [27] and Gava (2018) [29]

^bIncluded a cisgender control group or a comparison to general population norms

^cAll participants were also included in de Vries (2011) [34]

^dAn unknown number of participants were included in both Asscheman (1989) [43] and Asscheman (2011) [44]

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Table 2. Effects of Gender-Affirming Hormone Therapy on Quality of Life Among Transgender People

Author, year Study design	Transgender population	Treatment/ comparison (n)	QOL measures	Length of treatment	Findings
Pelusi, 2014 [27] RCT ^a	Men	Testoviron depot (15) vs testosterone gel (15) vs testosterone undecanoate (15)	VAS (general life satisfaction)	54 weeks	Mean QOL scores increased from 2.8 to 8.5 ($P < 0.05$) in the testoviron depot arm, from 3.2 to 8.9 ($P < 0.05$) in the testosterone gel arm, and from 2.6 to 8.0 ($P < 0.05$) in the testosterone undecanoate arm. ^d There was no difference across arms.
Gava, 2016 [28] Before-after trial	Women	Cyproterone acetate + estradiol (20) vs leuprolide acetate + estradiol (20)	VAS (general life satisfaction) SF-36	12 months	Mean QOL scores did not change in either arm. No comparisons across arms were reported.
Gava, 2018 [29] Before-after trial ^a	Men	Testosterone undecanoate (25) ^c vs testosterone enanthate (25) ^c	VAS (general satisfaction)	5 years	Mean QOL scores increased from 4.3 ± 3.1 to 8.1 ± 1.8 ($P < 0.001$) in the testosterone undecanoate arm and from 4.3 ± 3.8 to 8.3 ± 1.7 ($P < 0.001$) in the testosterone enanthate arm. No comparisons across arms were reported.
Manieri, 2014 [39] Prospective cohort	Women	HT (56)	WHOQOL	12 months	Mean QOL scores increased from 62.5 to 72.2 ($P < 0.05$). ^d
Manieri, 2014 [39] Prospective cohort	Men	HT (27)	WHOQOL	12 months	Mean QOL scores did not change.
Wierckx, 2011 [48] Cross-sectional ^b	Men	HT (47) ^c	SF-36	At least 3 years	Mean QOL scores on the VT and MH subscales were lower for transgender men than cisgender men (VT subscale: 62.1 ± 20.7 vs 71.9 ± 18.3, $P = 0.002$; MH subscale: 72.6 ± 19.2 vs 79.3 ± 16.4, $P = 0.020$). There were no other differences between transgender men and either cisgender men or cisgender women.
Gorin-Lazard, 2012 [46] Cross-sectional ^b	Women and men	HT (44) vs no HT (17)	SF-36	Median: 20 months (range, 12–42 months)	Mean QOL scores were generally higher in the group receiving HT vs the group not receiving HT (MCS: 51.0 ± 7.7 vs 39.8 ± 12.7, $P = 0.003$; MH subscale: 76.4 ± 14.1 vs 59.1 ± 19.6, $P = 0.004$; RE subscale: 88.6 ± 22.7 vs 54.9 ± 40.7, $P = 0.001$; SF subscale: 83.2 ± 23.3 vs 69.9 ± 24.2, $P = 0.026$). There were no differences in the other subscales.
Achille, 2020 [30] Prospective cohort	Girls and boys	GnRH treatment + HT (47)	Q-LES-Q-SF	12 months	Mean QOL scores did not change.

Abbreviations: GnRH, gonadotropin-releasing hormone; HT, hormone therapy; MCS, Mental Component Summary; MH, mental health; QOL, quality of life; RCT, randomized controlled trial; RE, role functioning/emotional; SF, social functioning; SF-36, Short Form-36 Health Survey; VAS, visual analog scale; VT, vitality; WHOQOL, World Health Organization Quality of Life measure.

^a10 participants on testosterone enanthate and 15 participants on testosterone undecanoate were included in both Pelusi [27] and Gava (2018) [29]

^bIncluded a cisgender control group or a comparison to general population norms

^cIncluded participants who had undergone gender-affirming surgery/surgeries, or surgery status not reported

^dNo standard deviations reported

doubled among transgender men ($n = 50$) over 5 years [29]. A prospective study found a 16% improvement in QOL scores among transgender women ($n = 56$) after 1 year of treatment ($P < 0.05$) but no change among transgender men ($n = 27$) [39]. Another before-after trial reported no difference in SF-36 scores among 2 groups of transgender women ($n = 20$ each) after 1 year [28]. Among adolescents, a mixed-gender prospective cohort ($n = 50$) showed no difference in QOL scores after a year of endocrine interventions, which included combinations of GnRH analogues and estrogen or testosterone formulations [30]. No study found that hormone therapy decreased QOL scores. We conclude that hormone therapy may improve QOL among transgender people. The strength of evidence for this conclusion is low due to concerns about bias in study designs, imprecision in measurement because of small sample sizes, and confounding by factors such as gender-affirming surgery status.

Depression

Twelve studies, including 1 before-after trial [28], 9 prospective cohorts [30-36, 38, 40, 42], and 2 cross-sectional studies [45, 47], assessed depression (Table 3). A prospective study found that the proportion of transgender men and transgender women ($n = 107$) showing symptoms of depression decreased from 42% to 22% over 12 months of treatment ($P < 0.001$) [31]. In 2 other prospective cohorts, Beck Depression Inventory (BDI-II) scores improved by more than half among both transgender men ($n = 26$) and transgender women ($n = 28$) after 24 months of therapy ($P < 0.001$) [36] and improved from 15.7 ± 12.3 to 8.1 ± 6.2 among transgender men ($n = 23$) after 6 months ($P < 0.001$) [40]. A fourth prospective study reported improvements of 1.05 points (95% CI: $-1.87, -0.22$) and 1.42 points (95% CI: $-2.61, -0.24$) on the 21-point Hospital Anxiety and Depression Scale (HADS) among 91 transgender women and 64 transgender men after 12 months ($P = 0.013$ and $P = 0.019$, respectively) [33]. A before-after trial, however, found no change in BDI-II scores among 2 groups of transgender women ($n = 20$ each) after 1 year [28]. Two prospective studies reported no difference among transgender men ($n = 37$) after 24 weeks [42] or among transgender men ($n = 50$) after 12 months [32], although in the latter study this outcome did not change from a baseline median of 0.0 ("not at all depressed") on an unvalidated 4-point scale. Among adolescents, 2 mixed-gender prospective cohorts ($n = 50$ and $n = 23$, respectively) showed improvements in depression scores after 1 year of treatment with GnRH analogues and estrogen or testosterone formulations (both $P < 0.001$) [30, 38]. Another prospective study reported that BDI scores improved

almost by half among adolescents ($n = 41$) after a mean of 1.88 years of treatment with GnRH analogues to delay puberty ($P = 0.004$) [34]. The overall improvement after several subsequent years of testosterone or estrogen therapy in this cohort ($n = 32$) was smaller, however, resulting in no significant change from baseline [35]. No study found that hormone therapy increased depression. We conclude that hormone therapy may decrease depression among transgender people. The strength of evidence for this conclusion is low due to concerns about study designs, small sample sizes, and confounding.

Anxiety

Eight studies, including 7 prospective cohorts [31, 33-35, 37, 38, 41, 42] and 1 cross-sectional study [45], assessed anxiety (Table 4). One prospective study found that Symptom Checklist 90-Revised scores indicating a probable anxiety disorder among a mixed-gender group of adults ($n = 107$) improved from borderline to normal over 12 months ($P < 0.001$) [31]. Another prospective study, however, did not find a difference in HADS anxiety scores among either transgender men ($n = 64$) or transgender women ($n = 91$) after 1 year [33], and a third study reported no change in the number of transgender men (6/52, 12%) with a diagnosed anxiety disorder after 7 months [41]. Likewise, 2 other prospective studies found no difference in anxiety scores among transgender men ($n = 37$) after 24 weeks of treatment [42] or transgender women ($n = 20$) after 12 months [37], although this latter finding represented no change from a baseline median score of 0 (answering "no" to the question, "do you feel anxious?") on an unvalidated 3-point scale. Among adolescents, 1 prospective study saw mean anxiety scores in a mixed-gender group ($n = 23$) improve from 33.0 ± 7.2 to 18.5 ± 8.4 after 1 year ($P < 0.001$) [38], but another reported no changes in anxiety after approximately 2 years of puberty delay treatment with GnRH analogues and 4 years of hormone therapy ($n = 32$) [35]. No study found that hormone therapy increased anxiety. We conclude that hormone therapy may decrease anxiety among transgender people. The strength of evidence for this conclusion is low due to concerns about study designs, small sample sizes, and confounding.

Death by Suicide

One retrospective study reported in 2 publications assessed death by suicide (Table 5) [43, 44]. The first publication reported that 3 transgender women in the Amsterdam gender dysphoria study cohort ($n = 303$) died by suicide between 1972 and 1986 [43]. The authors calculated the number of suicide deaths expected in an age-matched stratum of

Table 3. Effects of Gender-Affirming Hormone Therapy on Depression Among Transgender People

Author, year Study design	Transgender population	Treatment / comparison (n)	Depression measures	Length of treatment	Findings
Gava, 2016 [28] Before-after trial	Women	Cyproterone acetate + estradiol (20) vs Leuprolide acetate + estradiol (20)	BDI-II	12 months	Mean depression scores did not change in either arm. No comparisons across arms were reported.
Fisher, 2016 [37] Prospective cohort	Women	HT (28)	BDI-II	24 months	Mean depression score decreased from 10.12 to 4.58 ($P < 0.001$). ^{d,e}
Defreyne, 2018 [33] Prospective cohort	Women	HT (91) ^c	HADS (depression subscale)	1 year	Median depression score decreased by 1.05 (95% CI: -1.87, -0.22) on a 21-point scale ($P = 0.013$).
Costantino, 2013 [32] Prospective cohort	Men	HT (50)	Ad hoc questionnaire	12 months	Depression score did not change from a median of 0.0 at baseline (IQR: 0.0, 1.0).
Fisher, 2016 [36] Prospective cohort	Men	HT (26)	BDI-II	24 months	Mean depression score decreased from 9.31 to 4.25 ($P < 0.001$). ^{d,e}
Defreyne, 2018 [33] Prospective cohort	Men	HT (64) ^c	HADS (depression subscale)	1 year	Median depression score decreased by 1.42 (95% CI: -2.61, -0.24) on a 21-point scale ($P = 0.019$).
Turan, 2018 [42] Prospective cohort ^b	Men	HT (37)	SCL-90-R (depression subscale)	24 weeks	Mean depression score did not change.
Merzger, 2019 [40] Prospective cohort ^b	Men	HT (23)	BDI-II	6 months	Mean depression score decreased from 15.7 ± 12.3 to 8.1 ± 6.2 ($P < 0.001$).
Colizzi, 2014 [31] Prospective cohort	Women and men	HT (107)	Zung SDS SCL-90-R (depression subscale)	12 months	Mean Zung SDS score improved from 48.40 ± 10.5 to 39.98 ± 10.79 ($P < 0.001$), and the proportion with Zung SDS scores indicating mild, moderate, or severe depression (vs no depression) decreased from 42% to 22% ($\chi^2 = 19.05$, $P < 0.001$). Mean SCL-90-R score decreased from 0.83 ± 0.74 to 0.51 ± 0.49 ($P < 0.001$), which represents an improvement from possible borderline depression to no depression.
Leavitt, 1980 [47] Cross-sectional	Women	HT (22) vs No HT (19)	MMPI (depression subscale)	At least 12 months	Mean depression score was lower in the group receiving HT vs the group not receiving HT (53.1 ± 14.7 vs 65.7 ± 11.2, $P = 0.004$).

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Table 3. Continued

Author, year Study design	Transgender population	Treatment / comparison (n)	Depression measures	Length of treatment	Findings
Gómez-Gil, 2012 [45] Cross-sectional	Women and men	HT (120) ^c vs No HT (67) ^c	HADS (depression subscale)	Mean: 11.0 years (women, range, 1–46 years); 4.7 years (men, range, 1–22 years)	Mean depression score was lower in the group receiving HT vs the group not receiving HT (3.3 ± 3.2 vs 5.2 ± 4.2, <i>P</i> = 0.002). ^f The proportion with scores indicating depression (vs no depression) was larger in the group not receiving HT (31% vs 8%, χ^2 = 16.46, <i>P</i> = 0.001). ^f
de Vries, 2011 [34] Prospective cohort	Girls and boys	GnRH treatment (41)	BDI	1.88 years	Mean depression score decreased from 8.31 ± 7.12 to 4.95 ± 6.72 (<i>P</i> = 0.004).
de Vries, 2014 [35] Prospective cohort ^{a,b}	Girls and boys	GnRH treatment + HT (32) ^c	BDI	5.9 years	Mean depression score did not change.
Achille, 2020 [30] Prospective cohort	Girls and boys	GnRH treatment + HT (47)	CESD-R, PHQ-9 (modified for adolescents)	12 months	Mean CESD-R score decreased from 21.4 to 13.9 (<i>P</i> < 0.001); ^d a score of <16 indicates no clinical depression. Mean PHQ-9 score decreased from 9.0 to 5.4 (<i>P</i> < 0.001). ^d
López de Lara, 2020 [38] Prospective cohort ^e	Girls and boys	GnRH treatment + HT (23)	BDI-II	1 year	Mean depression score decreased from 19.3 ± 5.5 to 9.7 ± 3.9 (<i>P</i> < 0.001).

Abbreviations: BDI/BDI-II, Beck Depression Inventory; GAS, gender-affirming surgery; GnRH, gonadotropin-releasing hormone; HADS, Hospital Anxiety and Depression Scale; HT, hormone therapy; IQR, interquartile range; MIMPI, Minnesota Multiphasic Personality Inventory; NA, not applicable; SCL-90-R, Symptom Checklist 90-Revised; Zung SDS, Zung Self-Rating Depression Scale.

^aAll participants were also included in de Vries (2011) [34]

^bIncluded a cisgender control group or a comparison to general population norms

^cIncluded participants who had undergone gender-affirming surgery/surgeries, or surgery status not reported

^dNo standard deviations reported

^eAdjusted for age, gender role, and surgery status

^fAdjusted for age, gender, and education level

Table 4. Effects of Gender-Affirming Hormone Therapy on Anxiety Among Transgender People

Author, year	Transgender population	Treatment / comparison (n)	Anxiety measures	Length of treatment	Findings
Fuss, 2015 [37] Prospective cohort	Women	HT (20) ^c	Ad hoc questionnaire	12 months	Anxiety score did not change from a median of 0.0 at baseline.
Defreyne, 2018 [33] Prospective cohort	Women	HT (91) ^c	HADS (anxiety subscale)	1 year	Median anxiety score did not change.
Defreyne, 2018 [33] Prospective cohort	Men	HT (64) ^c	HADS (anxiety subscale)	1 year	Median anxiety score did not change.
Motta, 2018 [41] Prospective cohort	Men	HT (46) ^c	DSM	7 months	Proportion diagnosed with an anxiety disorder (6/46, 12%) did not change.
Turan, 2018 [42] Prospective cohort ^b	Men	HT (37)	SCL-90-R (anxiety subscale)	24 weeks	Mean anxiety score did not change.
Colizzi, 2014 [31] Prospective cohort	Women and men	HT (107)	SCL-90-R (anxiety subscale) Zung SAS	12 months	Mean SCL-90-R score decreased from 1.05 ± 0.95 to 0.54 ± 0.56 ($P < 0.001$), which represents an improvement from borderline anxiety disorder to no anxiety disorder. Mean Zung SAS score improved from 44.91 ± 9.59 to 37.90 ± 8.97 ($P < 0.001$), and the proportion with Zung SAS scores indicating mild, moderate, or severe anxiety (vs no anxiety) decreased from 50% to 17% ($\chi^2 = 33.03$, $P < 0.001$).
Gómez-Gil, 2012 [45] Cross-sectional	Women and men	HT (120) ^c vs No HT (67) ^c	HADS (anxiety subscale) SADS	Mean: 11.0 years (women, 1-46 years); 4.7 years (men, 1-22 years)	Mean HADS and SADS scores were lower in the group receiving HT vs the group not receiving HT (6.4 ± 3.7 vs 9.0 ± 4.0, $P = 0.001$; 8.5 ± 7.8 vs 11.0 ± 7.3, $P = 0.038$, respectively). ^d The proportion with scores indicating anxiety (vs no anxiety) was higher in the group not receiving HT ($\chi^2 = 14.46$, $P < 0.001$). ^d
de Vries, 2011 [34] Prospective cohort	Girls and boys	GnRH treatment (41)	STAI (trait subscale)	1.88 years	Mean anxiety score did not change.
de Vries, 2014 [35] Prospective cohort ^{a,b}	Girls and boys	GnRH treatment + HT (32) ^c	STAI (trait subscale)	5.9 years	Mean anxiety score did not change.
López de Lara, 2020 [38] Prospective cohort ^b	Girls and boys	GnRH treatment + HT (23)	STAI (trait subscale)	1 year	Mean anxiety score decreased from 33.0 ± 7.2 to 18.5 ± 8.4 ($P < 0.001$).

Abbreviations: BAI, Beck Anxiety Inventory; DSM, Diagnostic and Statistical Manual of Mental Disorders; GAS, gender-affirming surgery; GnRH, gonadotropin-releasing hormone; HADS, Hospital Anxiety and Depression Scale; HT, hormone therapy; IQR, interquartile range; SADS, Social Avoidance and Distress Scale; SCL-90-R, Symptom Checklist 90-Revised; STAI, State-Trait Anxiety Inventory; Zung SAS, Zung Self-Rating Anxiety Scale.

^aAll participants were also included in de Vries (2011) [34]

^bIncluded a cisgender control group or a comparison to general population norms

^cIncluded participants who have undergone gender-affirming surgery/surgeries, or surgery status not reported

^dAdjusted for age, gender, and education level

the general male Dutch population over this period to be 0.208. No data were reported for transgender men ($n = 122$). An update to this study reported 17 deaths by suicide among transgender women ($n = 966$) and 1 among transgender men ($n = 365$) between 1975 and 2007 [44].

The age- and sex-stratified standardized mortality ratios were 5.70 (95% CI: 4.93, 6.54) and 2.22 (95% CI: 0.53, 6.18), respectively. The risk of bias for this study was serious due to the difficulty of identifying appropriate comparison groups and uncontrolled confounding by surgery

Table 5. Effects of Gender-Affirming Hormone Therapy on Death by Suicide Among Transgender People

Author, year	Transgender population	Treatment / comparison (n)	Measures	Length of treatment	Findings
Asscheman, 1989 [43] Retrospective cohort ^{a,b}	Women	HT (303) ^c	Death by suicide (confirmed by autopsy report)	Median: 4.4 years (range, 6 months to 13 years)	3 transgender women (1%) died by suicide between 1972 and 1986. The adjusted number of suicide deaths expected among the general Dutch male population was 0.208.
Asscheman, 2011 [44] Retrospective cohort ^{a,b}	Women	HT (966) ^c	Death by suicide (confirmed by medical report or physician information)	Median: 18.6 years (range, 0.7–44.5 years)	17 transgender women (2%) died by suicide between 1975 and 2007. The age-stratified SMR compared to the general Dutch male population was 5.70 (95% CI: 4.93, 6.54).
Asscheman, 1989 [43] Retrospective cohort ^{a,b}	Men	HT (122) ^c	Death by suicide (confirmation procedure NR)	Median: 3.6 years (range, 6 months to 13 years)	No deaths by suicide among transgender men were reported during the study period.
Asscheman, 2011 [44] Retrospective cohort ^{a,b}	Men	HT (365) ^c	Death by suicide (confirmed by medical report or physician information)	Median: 18.4 years (range, 4.7–42.6 years)	1 transgender man (0.3%) died by suicide between 1975 and 2007. The age-stratified SMR compared to the general Dutch female population was 2.22 (95% CI: 0.53, 6.18).

Abbreviations: HT, hormone therapy; NR, not reported; SMR, standardized mortality ratio.

^aAn unknown number of participants were included in both Asscheman (1989) [43] and Asscheman (2011) [44]

^bIncluded a cisgender control group or a comparison to general population norms

^cIncludes participants who had undergone gender-affirming surgery/surgeries, or surgery status not reported

status and socioeconomic variables such as unemployment. We cannot draw any conclusions on the basis of this single study about whether hormone therapy affects death by suicide among transgender people.

Discussion

This systematic review of 20 studies found evidence that gender-affirming hormone therapy may be associated with improvements in QOL scores and decreases in depression and anxiety symptoms among transgender people. Associations were similar across gender identity and age. The strength of evidence for these conclusions is low due to methodological limitations (Table 6). It was impossible to draw conclusions about the effects of hormone therapy on death by suicide.

Uncontrolled confounding was a major limitation in this literature. Many studies simultaneously assessed different types of gender-affirming care and did not control for gender-affirming surgery status, making it difficult to isolate the effects of hormone therapy. Others failed to report complete information about surgery status. Additional factors that may influence both access to care and psychological outcomes, including extent of social or legal gender affirmation and exposure to determinants of health such as discrimination, were typically not considered. In addition, some evidence indicates that cyproterone acetate, a common anti-androgen assessed in many studies alongside estrogen therapy, may increase depression, which may be a source of confounding [49].

Another source of potential bias was recruitment of participants from specialized clinics that impose strict diagnostic criteria as a prerequisite for gender-affirming care. The dual role of clinicians and researchers as both gatekeepers and investigators may force transgender study participants to over- or understate aspects of their mental health in order to access gender-affirming care [8]. Similarly, transgender clinic patients may feel that they cannot opt out of research-related activities, which is a serious concern for the validity of psychological outcome measurements.

Clinic-based recruitment also overlooks transgender people who cannot access these clinics for financial or other reasons and misses those whose need for gender affirmation does not fit into current medical models. This is a particular concern for nonbinary and other gender-diverse people, for whom a model of gender affirmation as a linear transition from one binary gender to another is inaccurate [50].

Most studies used well-known scales for measuring psychological outcomes. None of these scales, however, have been specifically validated for use in transgender populations [51]. Furthermore, many scales are normed

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Table 6. Strength of Evidence of Studies that Evaluate the Psychological Effects of Hormone Therapy Among Transgender People

Outcome	Number of studies (n)	Strength of evidence	Summary ^d
Quality of life	1 randomized controlled trial [27] (45) ^b 2 before-after trials [28, 29] (65) ^b 2 prospective cohorts [30, 39] (133) 2 cross-sectional studies [46, 48] (108)	Low ^e	Hormone therapy may improve quality of life among transgender people. ^g
Depression	1 before-after trial [28] (40) 9 prospective cohorts [30-36, 38, 40, 42] (569) ^c 2 cross-sectional [45, 47] (228)	Low ^e	Hormone therapy may alleviate depression among transgender people. ^g
Anxiety	7 prospective cohorts [31, 33-35, 37, 38, 41, 42] (464) ^c 1 cross-sectional [45] (187)	Low ^e	Hormone therapy may alleviate anxiety among transgender people. ^g
Death by suicide	1 retrospective cohort [43, 44] (1756) ^d	Insufficient ^f	There is insufficient evidence to draw a conclusion about the effect of hormone therapy on death by suicide among transgender people.

^aDue to similarity of findings, the summary is the same for transgender men and transgender women and for adolescents and adults

^b25 participants are included in both Pelusi [27] and Gava (2018) [29] and are counted once

^cAll 55 participants in de Vries (2014) [35] were also included among the 70 participants in de Vries (2011) [34] and are counted once

^dAn unknown number of participants were included in both Asscheman (1989) [43] and Asscheman (2011), [44] so the unique sample size is smaller than indicated here

^eEvidence downgraded due to study limitations, including uncontrolled confounding, and imprecision because of small sample sizes

^fEvidence downgraded due to study limitations, including confounding and a lack of meaningful comparison groups, and imprecision in measurement of a rare event

^gThe body of cross-sectional evidence tended to align with the conclusion

separately for (presumed cisgender) men and women [52]. Inconsistency in identification of appropriate general population norms hinders comparisons between transgender and cisgender groups, which is a major related research question that requires further investigation.

Beyond methodological concerns in the studies we assessed, our review has other limitations. First, it is likely subject to publication bias, as we may have missed studies not published in the peer-reviewed literature. Second, a number of potentially relevant studies could not be included because the authors did not report on a minimum of 3 months of treatment or did not clearly state the type and/or duration of therapy, including the range for cross-sectional studies [53-65]. Finally, even where outcome measurements were similar across studies, heterogeneity in study designs, study populations, intervention characteristics, and reporting of results (ie, some studies reported results separately by gender identity, while others did not), prevented us from quantitatively pooling results.

More research is needed to further explore the relationship between gender-affirming hormone therapy and QOL, death by suicide, and other psychological outcomes, especially among adolescents. Future studies should investigate these outcomes in larger groups of diverse participants recruited outside clinical settings. Studies assessing the relationship between gender-affirming

hormone therapy and mental health outcomes in transgender populations should be prospective or use strong quasi-experimental designs; consistently report type, dose, and duration of hormone therapy; adjust for possible confounding by gender-affirming surgery status; control for other variables that may independently influence psychological outcomes; and report results separately by gender identity. Despite the limitations of the available evidence, however, our review indicates that gender-affirming hormone therapy is likely associated with improvements in QOL, depression, and anxiety. No studies showed that hormone therapy harms mental health or quality of life among transgender people. These benefits make hormone therapy an essential component of care that promotes the health and well-being of transgender people.

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References

- Collin L, Reisner SL, Tangpricha V, Goodman M. Prevalence of transgender depends on the “case” definition: a systematic review. *J Sex Med*. 2016;13(4):613-626.
- Goodman M, Adams N, Corneil T, Kreukels B, Motmans J, Coleman E. Size and distribution of transgender and gender nonconforming populations: a narrative review. *Endocrinol Metab Clin North Am*. 2019;48(2):303-321.
- Coleman E, Bockting W, Botzer M, et al. Standards of care for the health of transsexual, transgender, and gender-nonconforming people, version 7. *Int J Transgenderism*. 2012;13(4):165-232.
- Hembree WC, Cohen-Kettenis PT, Gooren L, et al. Endocrine treatment of gender-dysphoric/gender-incongruent persons: an Endocrine Society Clinical Practice Guideline. *J Clin Endocrinol Metab*. 2017;102(11):3869-3903.
- James SE, Herman JL, Rankin S, Keisling M, Mottet L, Anafi M. *The Report of the 2015 U.S. Transgender Survey*. National Center for Transgender Equality; 2016.
- Deutsch MB, ed. Guidelines for the primary and gender-affirming care of transgender and gender nonbinary people. 2016. Accessed December 19, 2020. <https://transcare.ucsf.edu/guidelines>
- Wylie K, Knudson G, Khan SI, Bonierbale M, Watanyusakul S, Baral S. Serving transgender people: clinical care considerations and service delivery models in transgender health. *Lancet*. 2016;388(10042):401-411.
- Schulz SL. The informed consent model of transgender care: an alternative to the diagnosis of gender dysphoria. *J Humanist Psychol*. 2018;58(1):72-92.
- American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 5th ed. American Psychiatric Association; 2013.
- Robles R, Fresán A, Vega-Ramírez H, et al. Removing transgender identity from the classification of mental disorders: a Mexican field study for ICD-11. *Lancet Psychiatry*. 2016;3(9):850-859.
- Aristegui I, Radusky PD, Zalazar V, Romero M, Schwartz J, Sued O. Impact of the Gender Identity Law in Argentinean transgender women. *Int J Transgenderism*. 2017;18(4):446-456.
- Murad MH, Elamin MB, Garcia MZ, et al. Hormonal therapy and sex reassignment: a systematic review and meta-analysis of quality of life and psychosocial outcomes. *Clin Endocrinol (Oxf)*. 2010;72(2):214-231.
- White Hughto JM, Reisner SL. A systematic review of the effects of hormone therapy on psychological functioning and quality of life in transgender individuals. *Transgend Health*. 2016;1(1):21-31.
- Costa R, Colizzi M. The effect of cross-sex hormonal treatment on gender dysphoria individuals’ mental health: a systematic review. *Neuropsychiatr Dis Treat*. 2016;12:1953-1966.
- Nobili A, Glazebrook C, Arcelus J. Quality of life of treatment-seeking transgender adults: a systematic review and meta-analysis. *Rev Endocr Metab Disord*. 2018;19(3):199-220.
- Rowniak S, Bolt L, Sharifi C. Effect of cross-sex hormones on the quality of life, depression and anxiety of transgender individuals: a quantitative systematic review. *JBI Database System Rev Implement Rep*. 2019;17(9):1826-1854.
- Mahfouda S, Moore JK, Siafarikas A, et al. Gender-affirming hormones and surgery in transgender children and adolescents. *Lancet Diabetes Endocrinol*. 2019;7(6):484-498.
- Sharma R, Robinson K, Wilson L, Baker KE. Effects of hormone therapy in transgender people. Accessed December 19, 2020. https://www.crd.york.ac.uk/prospero/display_record.php?RecordID=115379
- Moher D, Liberati A, Tetzlaff J, Altman DG; PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 2009;339:b2535.
- Baker KE, Wilson LM, Sharma R, Dukhanin V, McArthur K, Robinson KA. Data associated with the publication: Hormone therapy, mental health, and quality of life among transgender people: a systematic review. *Johns Hopkins Univ Data Arch*. V1. doi: [10.7281/T1/E70MXR](https://doi.org/10.7281/T1/E70MXR).
- Evidence Partners*. DistillerSR [software]; 2020.
- Ware JE Jr, Kosinski M, Bayliss MS, McHorney CA, Rogers WH, Raczek A. Comparison of methods for the scoring and statistical analysis of SF-36 health profile and summary measures: summary of results from the Medical Outcomes Study. *Med Care*. 1995;33(4 Suppl):AS264-AS279.
- Rohatgi A. WebPlotDigitizer: an HTML5-based online tool for to extract numerical data from plot images. 2020. <https://automeris.io/WebPlotDigitizer/index.html>
- Sterne JAC, Savović J, Page MJ, et al. RoB 2: a revised tool for assessing risk of bias in randomised trials. *BMJ*. 2019;366:l4898.
- Sterne JA, Hernán MA, Reeves BC, et al. ROBINS-I: a tool for assessing risk of bias in non-randomised studies of interventions. *BMJ*. 2016;355:i4919.
- Berkman ND, Lohr KN, Ansari MT, et al. Grading the strength of a body of evidence when assessing health care interventions: an EPC update. *J Clin Epidemiol*. 2015;68(11):1312-1324.
- Pelusi C, Costantino A, Martelli V, et al. Effects of three different testosterone formulations in female-to-male transsexual persons. *J Sex Med*. 2014;11(12):3002-3011.
- Gava G, Cerpolini S, Martelli V, Battista G, Seracchioli R, Meriggiola MC. Cyproterone acetate vs leuprolide acetate in combination with transdermal oestradiol in transwomen: a comparison of safety and effectiveness. *Clin Endocrinol (Oxf)*. 2016;85(2):239-246.
- Gava G, Mancini I, Cerpolini S, Baldassarre M, Seracchioli R, Meriggiola MC. Testosterone undecanoate and testosterone

- enanthate injections are both effective and safe in transmen over 5 years of administration. *Clin Endocrinol (Oxf)*. 2018;**89**(6):878-886.
30. Achille C, Taggart T, Eaton NR, et al. Longitudinal impact of gender-affirming endocrine intervention on the mental health and well-being of transgender youths: preliminary results. *Int J Pediatr Endocrinol*. 2020;**2020**:8.
 31. Colizzi M, Costa R, Todarello O. Transsexual patients' psychiatric comorbidity and positive effect of cross-sex hormonal treatment on mental health: results from a longitudinal study. *Psychoneuroendocrinology*. 2014;**39**:65-73.
 32. Costantino A, Cerpolini S, Alvisi S, Morselli PG, Venturoli S, Meriggola MC. A prospective study on sexual function and mood in female-to-male transsexuals during testosterone administration and after sex reassignment surgery. *J Sex Marital Ther*. 2013;**39**(4):321-335.
 33. Defreyne J, T'Sjoen G, Bouman WP, Brewin N, Arcelus J. Prospective evaluation of self-reported aggression in transgender persons. *J Sex Med*. 2018;**15**(5):768-776.
 34. de Vries AL, Steensma TD, Doreleijers TA, Cohen-Kettenis PT. Puberty suppression in adolescents with gender identity disorder: a prospective follow-up study. *J Sex Med*. 2011;**8**(8):2276-2283.
 35. de Vries AL, McGuire JK, Steensma TD, Wagenaar EC, Doreleijers TA, Cohen-Kettenis PT. Young adult psychological outcome after puberty suppression and gender reassignment. *Pediatrics*. 2014;**134**(4):696-704.
 36. Fisher AD, Castellini G, Ristori J, et al. Cross-sex hormone treatment and psychobiological changes in transsexual persons: two-year follow-up data. *J Clin Endocrinol Metab*. 2016;**101**(11):4260-4269.
 37. Fuss J, Hellweg R, Van Caenegem E, et al. Cross-sex hormone treatment in male-to-female transsexual persons reduces serum brain-derived neurotrophic factor (BDNF). *Eur Neuropsychopharmacol*. 2015;**25**(1):95-99.
 38. López de Lara D, Pérez Rodríguez O, Cuellar Flores I, et al. Evaluación psicosocial en adolescentes transgénero. *An Pediatr*. 2020;**93**(1):41-48.
 39. Manieri C, Castellano E, Crespi C, et al. Medical treatment of subjects with gender identity disorder: the experience in an Italian Public Health Center. *Int J Transgenderism*. 2014;**15**(2):53-65.
 40. Metzger NY, Boettger S. The effect of testosterone therapy on personality traits of trans men: a controlled prospective study in Germany and Switzerland. *Psychiatry Res*. 2019;**276**:31-38.
 41. Motta G, Crespi C, Mineccia V, Brustio PR, Manieri C, Lanfranco F. Does testosterone treatment increase anger expression in a population of transgender men? *J Sex Med*. 2018;**15**(1):94-101.
 42. Turan Ş, Aksoy Poyraz C, Usta Sağlam NG, et al. Alterations in body uneasiness, eating attitudes, and psychopathology before and after cross-sex hormonal treatment in patients with female-to-male gender dysphoria. *Arch Sex Behav*. 2018;**47**(8):2349-2361.
 43. Asscheman H, Gooren LJ, Eklund PL. Mortality and morbidity in transsexual patients with cross-gender hormone treatment. *Metabolism*. 1989;**38**(9):869-873.
 44. Asscheman H, Giltay EJ, Megens JA, de Ronde WP, van Trotsenburg MA, Gooren LJ. A long-term follow-up study of mortality in transsexuals receiving treatment with cross-sex hormones. *Eur J Endocrinol*. 2011;**164**(4):635-642.
 45. Gómez-Gil E, Zubiaurre-Elorza L, Esteva I, et al. Hormone-treated transsexuals report less social distress, anxiety and depression. *Psychoneuroendocrinology*. 2012;**37**(5):662-670.
 46. Gorin-Lazard A, Baumstarck K, Boyer L, et al. Is hormonal therapy associated with better quality of life in transsexuals? A cross-sectional study. *J Sex Med*. 2012;**9**(2):531-541.
 47. Leavitt F, Berger JC, Hoepfner JA, Northrop G. Presurgical adjustment in male transsexuals with and without hormonal treatment. *J Nerv Ment Dis*. 1980;**168**(11):693-697.
 48. Wierckx K, Van Caenegem E, Elaut E, et al. Quality of life and sexual health after sex reassignment surgery in transsexual men. *J Sex Med*. 2011;**8**(12):3379-3388.
 49. Heinemann LA, Will-Shahab L, van Kesteren P, Gooren LJ; Collaborating Centers. Safety of cyproterone acetate: report of active surveillance. *Pharmacoepidemiol Drug Saf*. 1997;**6**(3):169-178.
 50. Reisner SL, Hughto JMW. Comparing the health of non-binary and binary transgender adults in a statewide non-probability sample. *Plos One*. 2019;**14**(8):e0221583.
 51. Thompson HM, Reisner SL, VanKim N, Raymond HF. Quality-of-life measurement: assessing the WHOQOL-BREF scale in a sample of high-HIV-risk transgender women in San Francisco, California. *Int J Transgend*. 2015;**16**(1):36-48.
 52. Webb A, Heyne G, Holmes J, Peta J. Assessment norms for gender and implications for transgender, nonbinary populations. *Division 44 Newsletter*. 2016. Accessed June 9, 2020. <https://www.apadivisions.org/division-44/publications/newsletters/division/2016/04/nonbinary-populations>
 53. Heylens G, Verroken C, De Cock S, T'Sjoen G, De Cuypere G. Effects of different steps in gender reassignment therapy on psychopathology: a prospective study of persons with a gender identity disorder. *J Sex Med*. 2014;**11**(1):119-126.
 54. Gorin-Lazard A, Baumstarck K, Boyer L, et al. Hormonal therapy is associated with better self-esteem, mood, and quality of life in transsexuals. *J Nerv Ment Dis*. 2013;**201**(11):996-1000.
 55. Gómez-Gil E, Vidal-Hagemeijer A, Salamero M. MMPI-2 characteristics of transsexuals requesting sex reassignment: comparison of patients in pre-hormonal and pre-surgical phases. *J Pers Assess*. 2008;**90**(4):368-374.
 56. Oda H, Kinoshita T. Efficacy of hormonal and mental treatments with MMPI in FtM individuals: cross-sectional and longitudinal studies. *BMC Psychiatry*. 2017;**17**(1):256.
 57. Elaut E, De Cuypere G, De Sutter P, et al. Hypoactive sexual desire in transsexual women: prevalence and association with testosterone levels. *Eur J Endocrinol*. 2008;**158**(3):393-399.
 58. Warmuz-Stangierska I, Stangierski A, Ziemnicka K, et al. Emotional functions in transsexuals after the first step in physical transformation. *Endokrynol Pol*. 2015;**66**(1):47-52.
 59. Colton Meier SL, Fitzgerald KM, Pardo ST, Babcock J. The effects of hormonal gender affirmation treatment on mental health in female-to-male transsexuals. *J Gay Lesbian Ment Health*. 2011;**15**(3):281-299.

60. Davis SA, Colton Meier S. Effects of testosterone treatment and chest reconstruction surgery on mental health and sexuality in female-to-male transgender people. *Int J Sex Health*. 2014;26(2):113-128.
61. Keo-Meier CL, Herman LI, Reisner SL, Pardo ST, Sharp C, Babcock JC. Testosterone treatment and MMPI-2 improvement in transgender men: a prospective controlled study. *J Consult Clin Psychol*. 2015;83(1):143-156.
62. Newfield E, Hart S, Dibble S, Kohler L. Female-to-male transgender quality of life. *Qual Life Res*. 2006;15(9):1447-1457.
63. Gooren LJ, Sungkaew T, Giltay EJ, Guadamuz TE. Cross-sex hormone use, functional health and mental well-being among transgender men (Toms) and Transgender Women (Kathoeys) in Thailand. *Cult Health Sex*. 2015;17(1):92-103.
64. van Kesteren PJ, Asscheman H, Megens JA, Gooren LJ. Mortality and morbidity in transsexual subjects treated with cross-sex hormones. *Clin Endocrinol (Oxf)*. 1997;47(3):337-342.
65. Wiepjes CM, den Heijer M, Bremmer MA, et al. Trends in suicide death risk in transgender people: results from the Amsterdam Cohort of Gender Dysphoria study (1972-2017). *Acta Psychiatr Scand*. 2020;141(6):486-491.

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Policy & Procedures Regarding the Use of WPATH SOC8 Data

Background to the Policy

In April 2018 WPATH commissioned John Hopkins University (JHU) to support the development of the 8th edition of the Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People (SOC8). WPATH entered into a Sponsored Research Agreement with Johns Hopkins University on behalf of its School of Medicine with Dr Karen A. Robinson, Director at JHU Evidence-based Practice Center as principal investigator in conducting the research for WPATH. WPATH contracted Dr Robinson and her team to perform systematic literature reviews and other activities to support the development of the 8th edition of SOC.

The contract between WPATH and JHU states the following regarding Data use and Publications: "the term "Data" principally includes raw data, research data, records, reports, notes, tables, writing, sound recordings, pictorial reproduction, drawings or other graphical representations, and works of any similar nature (whether or not copyrighted) which are generated or specified to be delivered by Dr Robinson and her team in connection with the update and development of the SOC8".

"Notwithstanding anything to the contrary contained in the contract between WPATH and JHU, WPATH shall retain the unrestricted right to use the Data, or any part thereof at any time, in any manner and for any purpose, including the publication of the Data and the communication of Data to third parties. No other parties other than Dr Robinson and her team will have any access to the Data without written permission by WPATH. Prior to the publication of the Data or any part thereof by Dr Robinson and her team, WPATH shall have thirty (30) days in which to review and comment on the proposed publication. Dr Robinson and her team will give due regard to WPATH's comments. WPATH has the right to request the deletion of any content within materials intended for publication by Dr Robinson and her team*".

Since the start of the contract between WPATH and JHU Dr Robinson and her team have provided systematic literature reviews for the development of statements of the following chapters: Assessment, Primary Care, Endocrinology, Surgery, Reproductive Medicine, and Voice Therapy. Dr Robinson and team have also provided guidance regarding the methodology of the SOC8 and feedback for some of the statements.

Aim of the Policy

WPATH commissioned and financed an update and the development of the SOC8 for the benefit of transgender healthcare in order to promote health, research, education, respect, dignity, and equality for trans people globally.

Therefore, the aim of this policy is to develop a process to ensure that any manuscripts developed from the systematic literature reviews commissioned by



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WPATH benefit transgender healthcare and promote health, research, education, respect, dignity, and equality for transgender people globally.

A decision-making process to give access to the Data should be underpinned by a number of good practice directives. Hence, WPATH grants access to the data to any interested party, which:

- a. has the intention to use the Data for the benefit of advancing transgender health in a positive manner and;
- b. has the intention to publish the Data in reputable, academic, peer-reviewed journals and;
- c. involves the Work Group Leader of the Chapter or, alternatively, a designated representative of that specific SOC8 Chapter, or alternatively the Chair or Co-Chairs of the SOC8 in the design, drafting of the article, and the final approval of the article and;
- d. involves at least one member of the transgender community in the design, drafting of the article, and the final approval of the article and**;
- e. adheres to the WPATH Language Policy***.

Pathway to Approval for Use of WPATH Data

WPATH grants approval to use the Data for publication to any interested party, when:

- a. the directives outlined under the aim of this policy have been fulfilled and;
- b. the author(s) have acknowledged that WPATH has sponsored the acquisition of the data in the publication and;
- c. the author(s) have acknowledged that the authors are solely responsible for the content of the manuscript, and the manuscript does not necessarily reflect the view of WPATH in the publication and;
- d. The publication ("manuscript") has been approved by WPATH via a designated approval process.

Designated approval process for publication of the Data

- a. Author(s) submit publication to WPATH
- b. It is WPATH Executive Committee's responsibility to ensure that the manuscript is disseminated to the Chair of the SOC8, the Co-Chairs of the SOC8, and the members of the WPATH Board of Directors within 7 days after receipt of the manuscript.
- c. It is WPATH Executive Committee's responsibility to ensure that a vote is held within 14 days after the dissemination of the manuscript to the Chair and Co-Chairs of the SOC8 and Board members.
- d. It will be a blind vote and approval is granted to author(s) for publication by majority vote. The Chair and Co-Chairs of the SOC8 and Board members all have one equal vote. In case of a bind, the WPATH President will have the deciding vote.
- e. It is the President's responsibility to respond to the author(s) with approval or disapproval within thirty (30) days of submission of the manuscript to WPATH.



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f. In case of disapproval, the President may decide to hold a special meeting with the Chair and Co-Chairs of the SOC8 and Board members to discuss the manuscript and the reasons for not approving publication.

* This will be referred to as "Confidential Information", which means all non-public, confidential, and/or proprietary information that is marked as "Confidential Information" as described below and which is disclosed by one party to the other, including but not limited to software, inventions (whether patentable or not), algorithms, diagrams, drawings, processes, research, product or strategic plans or collaborations or partnerships, financial information, or business models. Confidential Information, if in tangible or readable form, shall be marked as such at the time of disclosure and if disclosed orally, shall be reduced to writing, marked confidential, and addressed to the other party within ten (10) days after disclosure.

** See T'Sjoen, G., Motmans, J., Arcelus, J., & Bouman, W. P. (2017). The need of patient involvement in transgender healthcare research. *Journal of Sexual Medicine*, 14(12), 1494-1495.

Bouman, W. P., Arcelus, J., T'Sjoen, G., De Cuypere, G., Galupo, M. P., Kreukels, B. P. C., Leibowitz, S., Riggs, D. W., Schechter, L. S., & Veale, J. (2018). Transgender and gender diverse people's involvement in transgender health research. *International Journal of Transgenderism*, 19(4), 357-358 or <https://www.tandfonline.com/doi/full/10.1080/15532739.2018.1543066>

*** See Bouman, W. P., Suess, A., Motmans, J., Green, J., Deutsch, M., Adams, N., Safer, J., Smiley, A., and Winter, S. (2017). Language and transgender health. *International Journal of Transgenderism*, 18(1), 1-6 or <https://www.tandfonline.com/doi/full/10.1080/15532739.2016.1262127>

Final Policy Approved June 11, 2020

Brief Summary Proposal to Support Guideline Development for World Professional Association for Transgender Health

Karen A Robinson, Johns Hopkins University

12 April 17

We are excited about the potential opportunity to support guideline development for the World Professional Association for Transgender Health (WPATH). We understand that WPATH is seeking to update and revise the Standards of Care (SOC) for the Health of Transsexual, Transgender, and Gender Nonconforming People (Version 7, 2011), moving toward an evidence-based guideline. Briefly, we understand that support for this process would include:

- 1) Orientation to the process and refinement of the scope. This includes:
 - a. preliminary searching
 - b. presentation and discussion of systematic review and guideline development processes with WPATH personnel, especially the guideline chairs
 - c. identification of statements for which systematic reviews will be conducted
- 2) Conduct systematic reviews, including:
 - a. refinement of questions using PICO format (population, intervention, comparison, outcome)
 - b. search for evidence
 - c. screen results
 - d. data extraction
 - e. data synthesis
 - f. grade certainty or confidence in evidence
 - g. present results for guideline panel (e.g., report, tables, in-person presentation to panel)
- 3) Provide orientation and guidance to guideline panel in interpreting results of systematic reviews and in developing recommendation statements
- 4) Provide critical feedback on statements and guideline document(s)

Proposed Team and General Structure

The proposed PI (Karen A. Robinson, PhD) is Director of the AHRQ-designated Johns Hopkins University Evidence-based Practice Center (EPC) and has been a leader in the Cochrane Collaboration for more than 20 years. Dr. Robinson has worked with organizations in developing evidence-informed recommendations and policy. This includes serving on NRC and IOM panels (The National Academies), and conducting systematic reviews used by professional organizations, and government agencies (e.g., USPSTF, CMS, OMAR). She also designed and implemented a process for the development and maintenance (including updating) of evidence-based guidelines for a large organization (CF Foundation 2004-2013). Dr. Robinson is a member of G-I-N, serving on the steering group for GIN Tech. Dr. Robinson has specific experience in providing guidance and training for guideline panel members in the assessment of evidence (such as with GRADE) and development of recommendations, guided by the

standards in systematic reviews and guideline development from the IOM, as well as from guideline appraisal concepts, such as from AGREE and GLIA. She also has experience in drafting and critically reviewing guideline documents, specifically ensuring clear links between the evidence and recommendation statements.

This would not be considered an official EPC project as it will not be conducted through the AHRQ. However, we propose that this work be conducted by investigators and staff who are at or who have worked with the EPC. Under leadership from Dr. Robinson, the project would include an experienced EPC faculty member (Lisa M. Wilson, ScM), and would be managed by an experienced senior project manager within the EPC. Also available are EPC-affiliated medical librarians and statisticians with experience in supporting systematic review teams.

For the full team option, we would engage investigators from the newly established Johns Hopkins Center for Transgender Health (JHCTH), a multidisciplinary center of excellence, established to reduce health care disparities and improve the overall health of the transgender community through world-class clinical care, research and medical education. The Center is led by medical director Devin O'Brien Coon, MD, MSE and clinical program director Paula Neira, MSN, RN, JD. Dr. Coon is a surgeon and researcher whose medical practice is solely focused on transgender health while Ms. Neira is a U.S. Naval Academy graduate, Navy veteran, nurse and lawyer who lead advocacy efforts for the repeal of the "don't ask, don't tell" policy and became the first transgender Navy veteran to have her discharge documentation updated to reflect her correct name. Health outcomes researcher and clinical informatician Brandyn Lau, MPH, CPH leads the research committee for the JHCTH. Mr. Lau, who also has experience working on systematic reviews through the EPC, will serve as a co-investigator, while Dr. O'Brien Coon and Ms. Neira will serve as advisors. We would also engage as a co-investigator Tonia C. Poteat, PhD from the Department of Epidemiology who has experience in conducting systematic reviews in this topic area, and is a physician assistant who has provided gender-affirming medical care for transgender adults since 1996. Finally, Adrian Dobbs, MD would also be invited to serve as an advisor providing expertise in the hormonal management of transgender patients. Further details on proposed personnel, including biosketches, are available upon request.

We have extensive experience in conducting high quality systematic reviews, including updates, while adhering to strict timelines with deliverables. We also have experience in addressing challenges in evidence synthesis. For instance, Dr. Robinson serves on the Methods Steering Committee for the AHRQ EPC Program and has led workgroups developing guidance on integrating different types of evidence, such as existing reviews, into new systematic reviews.

Estimated Cost

The inclusion of the full team described above, assuming a one year budget year, would have total direct cost of about \$291,000. The IDC rate is to be negotiated. We would welcome the opportunity to revise our budget estimate to meet different time or cost variables. For instance, relying more on the guideline panel members to provide input throughout the process versus internal experts could be an option to lower this estimate.

Should we be considered further, we would appreciate the opportunity to submit questions or to have an additional phone call. In the event that this may be helpful in furthering your process, we include here some of our questions:

- Is there a plan to create a publication or other document outlining the process by which the WPATH guideline panels develop recommendation statements? (We assume that this would include outlining a different process for statements that have or do not have evidence for support.)
- What materials are available from the 2011 guideline that is to be updated? i.e., are full-text references available? are data abstraction files or table files available?

We look forward to the opportunity to provide further details for consideration after the initial review of this summary proposal.

Karen A. Robinson, PhD
Director JHU Evidence-based Practice Center
Associate Professor of Medicine, Epidemiology, and Health Policy and Management
Johns Hopkins University

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standards in systematic reviews and guideline development from the IOM, as well as from guideline appraisal concepts, such as from AGREE and GLIA. She also has experience in drafting and critically reviewing guideline documents, specifically ensuring clear links between the evidence and recommendation statements.

This would not be considered an official EPC project as it will not be conducted through the AHRQ. However, we propose that this work be conducted by investigators and staff who are at or who have worked with the EPC. Under leadership from Dr. Robinson, the project would include an experienced EPC faculty member (Lisa M. Wilson, ScM), and would be managed by an experienced senior project manager within the EPC. Also available are EPC-affiliated medical librarians and statisticians with experience in supporting systematic review teams.

For the full support option, we would engage investigators from the newly established Johns Hopkins Center for Transgender Health (JHCTH), a multidisciplinary center of excellence, established to reduce health care disparities and improve the overall health of the transgender community through world-class clinical care, research and medical education. The Center is led by medical director Devin O'Brien Coon, MD, MSE and clinical program director Paula Neira, MSN, RN, JD. Dr. Coon is a surgeon and researcher whose medical practice is solely focused on transgender health while Ms. Neira is a U.S. Naval Academy graduate, Navy veteran, nurse and lawyer who lead advocacy efforts for the repeal of the "don't ask, don't tell" policy and became the first transgender Navy veteran to have her discharge documentation updated to reflect her correct name. Health outcomes researcher and clinical informatician Brandyn Lau, MPH, CPH leads the research committee for the JHCTH. Mr. Lau, who also has experience working on systematic reviews through the EPC, will serve as a co-investigator, while Dr. O'Brien Coon and Ms. Neira will serve as advisors. We would also engage as a co-investigator Tonia C. Poteat, PhD from the Department of Epidemiology who has experience in conducting systematic reviews in this topic area, and is a physician assistant who has provided gender-affirming medical care for transgender adults since 1996. Finally, Adrian Dobbs, MD would also be invited to serve as an advisor providing expertise in the hormonal management of transgender patients. Further details on proposed personnel, including biosketches, are available upon request.

We have extensive experience in conducting high quality systematic reviews, including updates, while adhering to strict timelines with deliverables. We also have experience in addressing challenges in evidence synthesis. For instance, Dr. Robinson serves on the Methods Steering Committee for the AHRQ EPC Program and has led workgroups developing guidance on integrating different types of evidence, such as existing reviews, into new systematic reviews.

Estimated Cost

Each estimate assumes a one year budget period and that the IDC rate is to be negotiated.

1. Full Team/ Full Support Option: The inclusion of the full team described above for the full support option (steps 1-4 above) would have total direct cost of about \$291,000.
2. Core Team only: Inclusion of core team only for conduct of systematic reviews, and effort for front and back end activities (steps 1-4 above), is about \$178,000 direct cost.

3. Restricted Core Team only: Inclusion of core team only. Completion of step 2 only with limited scope (e.g., one question/recommendation statement, use of existing reviews, etc.). Direct cost estimated at about \$136,000.

Should we be considered further, we would appreciate the opportunity to submit questions or to have an additional phone call. In the event that this may be helpful in furthering your process, we include here some of our questions:

- Is there a plan to create a publication or other document outlining the process by which the WPATH guideline panels develop recommendation statements? (We assume that this would include outlining a different process for statements that have or do not have evidence for support.)
- What materials are available from the 2011 guideline that is to be updated? i.e., are full-text references available? Are data abstraction files or table files available?
- Does WPATH have a standard IDC rate?

We look forward to the opportunity to provide further details for consideration after the initial review of this summary proposal.

Karen A. Robinson, PhD
Director JHU Evidence-based Practice Center
Associate Professor of Medicine, Epidemiology, and Health Policy and Management
Johns Hopkins University

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Preliminary Activities Report for JHU Project “Support Guideline Development for World Professional Association for Transgender Health”

Karen A Robinson, Johns Hopkins University

27 Jan 19

We signed the contract to conduct activities to support the development of Standards of Care (SOC) 8 with a start date of 1 April 2018 with an end date of 31 March 2019. The total cost (direct and indirect) was \$196,307.

We proposed the following tasks and have briefly noted below the status of each:

- 1) In consultation with WPATH personnel, draft initial guidelines development process or “WPATH Guideline Procedures Manual”.
 - Guideline development methods document drafted (July 2018)
 - Conflict of Interest policy and disclosure of interest form drafted (Nov 2018)
 - Drafted Chapter Template, including guidance on and examples of text (July 2018)

- 2) Orientation to the guideline development process and refinement of the scope. This includes:
 - a. presentation and discussion of systematic review and guideline development processes with WPATH personnel, especially the guideline chairs
 - provided overview of process during two calls with chairs and chapter leads (July 2018)
 - provided overview and assistance with scope in Buenos Aires (Nov 2018)

 - b. preliminary searching
 - conducted preliminary searching (June 2018)
 - provided a register of relevant articles, sorted by chapter (July 2018)

 - c. identification of statements within chapters for which systematic reviews will be conducted
 - reviewed SOC7 and extracted statements that seemed to be recommendations. Provided listing, and initial identification as to those needed systematic reviews, to Chairs and Chapters. (May 2018)

- 3) Conduct systematic reviews for the topics selected, including:
 - a. refinement of questions using PICO format (population, intervention, comparison, outcome)
 - b. search for evidence
 - c. screen results
 - d. data extraction
 - e. data synthesis
 - f. grade certainty or confidence in evidence
 - g. present results for guideline panel (e.g., report, tables, in-person presentation to panel)
 - received last set of questions from chapters in mid-December 2018
 - completed protocols for systematic reviews for adolescent, hormone, surgery and voice chapters
 - registering protocols on PROSPERO
 - In process of completing systematic reviews addressing 34 questions and 23 subquestions (plus those received in December)

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- 4) Provide orientation and guidance to guideline panel in interpreting results of systematic reviews and in developing recommendation statements. This includes providing guidance on development of consensus-based statements or good practice statements.
 - Provided written guidance on drafting recommendations (July 2018)
 - Provided a presentation in Buenos Aires for Chairs and Chapter leads; met individually with most chapters (Nov 2018)

- 5) Provide critical feedback on statements and guideline document(s).
 - Provided critical feedback on statements received to date

- 6) Provide assistance in submission of relevant guideline modules or chapters to the National Guideline Clearinghouse (guidelines.gov).

In addition to above, I have met regularly with the SOC8 Chairs (for instance, I drafted a 'tracking sheet' to track questions and recommendations received and other notes regarding status). I have also have joined chapter calls or had separate calls with Chapter Leads, as requested. All methods documents have been posted on the shared SOC8 drive.

Brief Summary Proposal to Support Guideline Development for World Professional Association for Transgender Health

Karen A Robinson, Johns Hopkins University

23 June 17

We are excited about the potential opportunity to support guideline development for the World Professional Association for Transgender Health (WPATH). We understand that WPATH is seeking to update and revise the Standards of Care (SOC) for the Health of Transsexual, Transgender, and Gender Nonconforming People (Version 7, 2011), moving toward an evidence-based guideline.

We propose the following tasks:

- 1) In consultation with WPATH personnel, draft initial guidelines development process or “WPATH Guideline Procedures Manual”.
- 2) Orientation to the guideline development process and refinement of the scope. This includes:
 - a. presentation and discussion of systematic review and guideline development processes with WPATH personnel, especially the guideline chairs
 - b. preliminary searching
 - c. identification of statements within chapters for which systematic reviews will be conducted
- 3) Conduct systematic reviews for the topics selected, including:
 - a. refinement of questions using PICO format (population, intervention, comparison, outcome)
 - b. search for evidence
 - c. screen results
 - d. data extraction
 - e. data synthesis
 - f. grade certainty or confidence in evidence
 - g. present results for guideline panel (e.g., report, tables, in-person presentation to panel)
- 4) Provide orientation and guidance to guideline panel in interpreting results of systematic reviews and in developing recommendation statements. This includes providing guidance on development of consensus-based statements or good practice statements.
- 5) Provide critical feedback on statements and guideline document(s).
- 6) Provide assistance in submission of relevant guideline modules or chapters to the National Guideline Clearinghouse (guidelines.gov).

Proposed Team and General Structure

The proposed PI (Karen A. Robinson, PhD) is Director of the AHRQ-designated Johns Hopkins University Evidence-based Practice Center (EPC) and has been a leader in the Cochrane Collaboration for more than 20 years. Dr. Robinson has worked with organizations in developing evidence-informed recommendations and policy. This includes serving on NRC and IOM panels (The National Academies), and conducting systematic reviews used by professional organizations, and government agencies (e.g., USPSTF, CMS, OMAR). She also designed and implemented a process for the development and maintenance (including updating) of evidence-based guidelines for a large organization (CF Foundation 2004-2013). Dr. Robinson is a member of G-I-N, serving on the steering group for GIN Tech. Dr. Robinson has specific experience in providing guidance and training for

guideline panel members in the assessment of evidence (such as with GRADE) and development of recommendations, guided by the standards in systematic reviews and guideline development from the IOM, as well as from guideline appraisal concepts, such as from AGREE and GLIA. She also has experience in drafting and critically reviewing guideline documents, specifically ensuring clear links between the evidence and recommendation statements.

This would not be considered an official EPC project as it will not be conducted through the AHRQ. However, we propose that this work be conducted by investigators and staff who are at or who have worked with the EPC. Under leadership from Dr. Robinson, the project would include an experienced EPC faculty member (Lisa M. Wilson, ScM), and would be managed by an experienced senior project manager within the EPC. Also available are EPC-affiliated medical librarians and statisticians with experience in supporting systematic review teams.

We have extensive experience in conducting high quality systematic reviews, including updates, while adhering to strict timelines with deliverables. We also have experience in addressing challenges in evidence synthesis. For instance, Dr. Robinson serves on the Methods Steering Committee for the AHRQ EPC Program and has led workgroups developing guidance on integrating different types of evidence, such as existing reviews, into new systematic reviews.

We will rely on WPATH personnel, including guideline chairs, chapter leads and, as relevant, chapter committee members, as the domain experts. Their input will ensure that we are addressing the appropriate questions and producing reviews and report(s) that will be most useful in developing the guidelines. Input will be sought at the beginning of the work and, as needed, to address any domain-specific questions throughout the process.

Estimated Cost

We have prepared a budget for 16 months, assuming start date of 1 July 2017 to end of October 2018 (we understand need to present details on the process and some chapters at the WPATH World Congress). The direct cost for the 16 months is \$223,385. The IDC (indirect cost; also called 'facilities and administrative' fee or overhead) is to be negotiated, pending allowable costs per sponsor. Travel costs, such as to attend meetings to provide orientation or report results, will be reimbursed separately. Final payment schedule to be negotiated; we would suggest quarterly.

We look forward to the opportunity to provide further details or respond to any questions.

Karen A. Robinson, PhD
Director JHU Evidence-based Practice Center
Associate Professor of Medicine, Epidemiology, and Health Policy and Management
Johns Hopkins University

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**Brief Summary Proposal to Support Guideline Development
for World Professional Association for Transgender Health**

31 July 17

**Karen A. Robinson, PhD
Director JHU Evidence-based Practice Center
Associate Professor of Medicine, Epidemiology, and Health Policy and Management
Johns Hopkins University**

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Robinson, JHU

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We are excited about the opportunity to support guideline development for the World Professional Association for Transgender Health (WPATH). We understand that WPATH is seeking to update and revise the Standards of Care (SOC) for the Health of Transsexual, Transgender, and Gender Nonconforming People (Version 7, 2011). We are particularly excited to help WPATH develop evidence-based guidelines by providing an independent evidence-review team to conduct rigorous, comprehensive, and transparent systematic reviews to inform the guideline recommendations.

We propose the following services to support WPATH and SOC8:

- 1) In consultation with WPATH personnel, draft initial guidelines development process or “WPATH Guideline Procedures Manual”.
- 2) Orientation to the guideline development process and refinement of the scope. This includes:
 - a. presentation and discussion of systematic review and guideline development processes with WPATH personnel, especially the guideline chairs and chapter leads
 - b. preliminary searching
 - c. identification of statements within chapters for which systematic reviews will be conducted, and which will be ‘best practice statements’ based on consensus expert opinion
- 3) Conduct systematic reviews for the topics selected, including:
 - a. refinement of questions using PICO format (population, intervention, comparison, outcome)
 - b. search for evidence
 - c. screen results
 - d. data extraction
 - e. data assessment and synthesis
 - f. grade certainty or confidence in evidence
 - g. presentation of results to guideline panel (e.g., report, evidence and summary tables, in-person presentation to panel).
- 4) Provide orientation and guidance to guideline panel in interpreting results of systematic reviews, in developing recommendation statements, and in grading the recommendation statements. This includes providing guidance on development of consensus-based or good practice statements.
- 5) Provide critical feedback on statements and guideline document(s). * We understand need to, and will facilitate, the presentation of details on the process and, at least, some chapters at the WPATH World Congress.
- 6) Provide assistance in submission of relevant guideline modules or chapters to the National Guideline Clearinghouse (guidelines.gov).

Proposed Team and General Structure

The proposed PI (Karen A. Robinson, PhD) is Director of the AHRQ-designated Johns Hopkins University Evidence-based Practice Center (EPC) and has been a leader in Cochrane for more than 20 years. (Please see attached CV.) Dr. Robinson has worked with a number of multi-specialty organizations in developing evidence-informed recommendations and policy, including serving on NRC and IOM panels (The National Academies), and conducting systematic reviews used by professional organizations, and government agencies (e.g., CF Foundation, KDIGO, USPSTF, CMS, OMAR). She also designed and implemented a process for the development and maintenance (including updating) of evidence-based guidelines for a large organization (CF Foundation). Dr. Robinson, JHU

Robinson is a member of G-I-N (Guidelines International Network), serving on the steering group for G-I-N Tech. Dr. Robinson has specific experience in providing guidance and training for guideline panel members in the assessment of evidence (such as with GRADE) and the development of recommendations, guided by the standards guideline development from the IOM, as well as from guideline appraisal concepts, such as from AGREE and GLIA. She also has experience in drafting and critically reviewing guideline documents, specifically ensuring clear links between the evidence and recommendation statements.

Under leadership from Dr. Robinson, the project would include an experienced EPC faculty member (Lisa M. Wilson, ScM). Ms. Wilson is a Research Associate, Health Policy & Management and has been at the EPC for over 10 years; she has managed and led 19 EPC evidence reviews. (Please see CV.) Ms. Wilson has also conducted research to improve systematic review methodology. Ms. Wilson was a key team player, taking the lead on several sections, for our work with the KDIGO guidelines.

The project would be managed by an experienced senior project manager, with the assistance of an experienced Research Assistant. Additionally, we plan to engage graduate students to assist with tasks such as screening and data extraction. Also available are EPC-affiliated medical librarians and statisticians with experience in supporting systematic review teams.

We have extensive experience in conducting high quality systematic reviews, while adhering to strict timelines with deliverables. We also have experience in addressing challenges in evidence synthesis. For instance, Dr. Robinson serves on the Methods Steering Committee for the AHRQ EPC Program and has led workgroups developing guidance on integrating different types of evidence, such as existing reviews, into new systematic reviews.

As we have done with some of our prior work, we will rely on WPATH personnel, including guideline chairs, chapter leads and, as relevant, chapter committee members, as the domain experts. Their input will ensure that we are addressing the appropriate questions and producing reviews and report(s) that will be most useful in developing the guidelines. Input will be sought at the beginning of the work and, as needed, to address any domain-specific questions throughout the process.

Estimated Cost

We have prepared a budget for 12 months, assuming start date of 1 September 2017, with direct cost \$178,461. We understand that WPATH has a policy of not paying more than 10% IDC (indirect cost; also called 'facilities and administrative' fee or overhead) so total proposed budget is \$196,307. Travel costs, such as to attend meetings to provide orientation or report results, will be reimbursed separately. As in the prior proposals submitted, we would be open to discussing ways to lower the total budget, such as limiting the number or scope of the reviews, or limiting the services provided.

We suggest a quarterly payment schedule based on milestones, for example:

1. upon initiation of project with signed contract
2. upon submission of final PICO document outlining questions for review
3. upon submission of the draft report of the systematic reviews
4. upon submission of final report of systematic reviews

We look forward to the opportunity to provide further details or to respond to any questions.

Robinson, JHU

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Please find attached CVs for Dr. Robinson and Ms. Wilson.

Robinson, JHU

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Policy & Procedures Regarding the Use of WPATH SOC8 Data

Revised August 2020

This policy will be shared with every SOC8 member in order to inform them of the process of SOC8 Data Use and to allow each SOC8 member to apply to access the existing SOC8 data as described below

Background to the Policy

In April 2018 WPATH commissioned John Hopkins University (JHU) to support the development of the 8th edition of the Standards of Care for the Health of Transsexual, Transgender, and Gender Nonconforming People (SOC8). WPATH entered into a Sponsored Research Agreement with John Hopkins University on behalf of its School of Medicine with Dr Karen A. Robinson, Director at JHU Evidence-based Practice Center as principal investigator in conducting the research for WPATH. WPATH contracted Dr Robinson and her team to perform systematic literature reviews and other activities to support the development of the 8th edition of SOC.

The contract between WPATH and JHU states the following regarding Data use and Publications: “the term "Data" principally includes raw data, research data, records, reports, notes, tables, writing, sound recordings, pictorial reproduction, drawings or other graphical representations, and works of any similar nature (whether or not copyrighted) which are generated or specified to be delivered by Dr Robinson and her team in connection with the update and development of the SOC8”.

“Notwithstanding anything to the contrary contained in the contract between WPATH and JHU, WPATH shall retain the unrestricted right to use the Data, or any part thereof at any time, in any manner and for any purpose, including the publication of the Data and the communication of Data to third parties. No other parties other than Dr Robinson and her team will have any

WPATH Policy Use of Data for SOC8 – Version 2

Approved by WPATH Board of Directors – August 2020

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access to the Data without written permission by WPATH. Prior to the publication of the Data or any part thereof by Dr Robinson and her team, WPATH shall have thirty (30) days in which to review and comment on the proposed publication. Dr Robinson and her team will give due regard to WPATH's comments. WPATH has the right to request the deletion of any content within materials intended for publication by Dr Robinson and her team”.

Since the start of the contract between WPATH and JHU Dr Robinson and her team have provided systematic literature reviews for the development of statements of the following chapters: Assessment, Primary Care, Endocrinology, Surgery, Reproductive Medicine, and Voice Therapy. Dr Robinson and team have also provided guidance regarding the methodology of the SOC8 and feedback for some of the statements.

Aim of the Policy

WPATH commissioned and financed an update and the development of the SOC8 for the benefit of transgender healthcare in order to promote health, research, education, respect, dignity, and equality for trans people globally.

Therefore, the aim of this policy is to develop and to describe a process to ensure that any manuscripts developed from the systematic literature reviews commissioned by WPATH benefit transgender healthcare and promote health, research, education, respect, dignity, and equality for transgender people globally.

A decision-making process to give access to the Data should be underpinned by a number of good practice directives. Hence, WPATH grants access to the data to any interested party, which:

- a. has the intention to use the Data for the benefit of advancing transgender health in a positive manner and;
- b. has the intention to publish the Data in reputable, academic, peer-reviewed journals and;
- c. involves the Work Group Leader of the Chapter or, alternatively, a designated representative of that specific SOC8 Chapter, or alternatively the Chair or Co-Chairs of the SOC8 in the design, drafting of the article, and the final approval of the article and;

WPATH Policy Use of Data for SOC8 – Version 2
Approved by WPATH Board of Directors – August 2020

- d. involves at least one member of the transgender community in the design, drafting of the article, and the final approval of the article and**;
- e. adheres to the WPATH Language Policy and/or similar publications***.

Pathway to approval for use of WPATH Data

WPATH grants approval to use the Data for publication to any interested party, when:

- a. the directives outlined under the aim of this policy have been fulfilled and;
- b. the author(s) have acknowledged that WPATH has sponsored the acquisition of the data in the publication and;
- c. the author(s) have acknowledged that the authors are solely responsible for the content of the manuscript, and the manuscript does not necessarily reflect the view of WPATH in the publication and;
- d. The publication (“manuscript”) has been approved by WPATH via a designated approval process.

Designated approval process for publication of Data (see Figure 1)

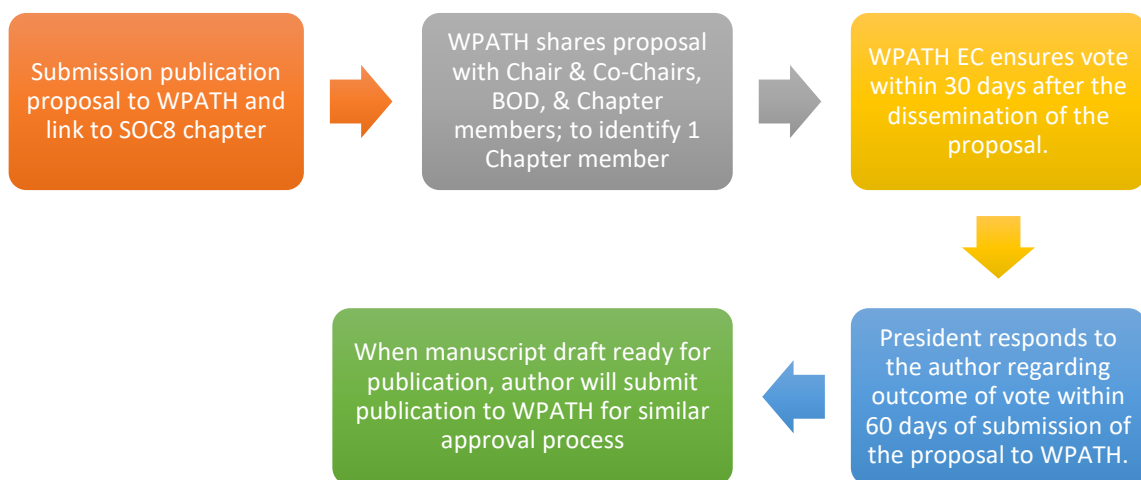


Figure 1 - Designated approval process for publication of Data

1. The lead author submits a proposal of the publication to WPATH with the following headings: Background; Aim(s); Method; Results;

*WPATH Policy Use of Data for SOC8 – Version 2
 Approved by WPATH Board of Directors – August 2020*

- Conclusion (Maximum 1 page and states which SOC8 chapter the publication is linked to);
2. It is WPATH's responsibility that the proposal is shared with the Chair and Co-Chairs of the SOC8, the members of the WPATH Board of Directors and all members of the SOC8 chapter linked to the proposed publication within 14 days after receipt of the proposal. The aim will be to identify an individual (s) from the chapter (maximum 2 individuals if a publication concerns more than one chapter) who will work with the lead author(s) of the proposed publication (unless the lead author is already working with one or more Working Group members); it is the responsibility of the Working Group as a whole to identify and to nominate one of their members, either by vote or general consensus within the Working Group.
 3. WPATH will keep a record of the possible proposals with deadlines for draft submissions - in order to avoid the development of multiple papers with the same aims using the same data;
 4. It is WPATH Executive Committee's responsibility to ensure that a vote is held within 30 days after the dissemination of the proposal.
 5. It will be a blind vote and approval to write the paper is granted to the author(s) by majority vote. In case of a tie, the WPATH President will have the deciding vote.
 6. It is the President's responsibility to respond to the author(s) with approval or disapproval within fifty-six (56) days of submission of the proposal to WPATH.
 7. Once the manuscript draft is ready for publication, the lead author will submit the publication to WPATH
 8. It is WPATH Executive Committee's responsibility to ensure that the manuscript is disseminated to the Chair of the SOC8, the Co-Chairs of the SOC8, and the members of the WPATH Board of Directors within 7 days after receipt of the manuscript.
 9. It is WPATH Executive Committee's responsibility to ensure that a vote is held within 14 days after the dissemination of the manuscript to the Chair and Co-Chairs of the SOC8 and Board members.
 10. It will be a blind vote and approval is granted to author(s) for publication by majority vote. The Chair and Co-Chairs of the SOC8 and Board members all have one equal vote. In case of a tie, the WPATH President will have the deciding vote.

11. It is the President's responsibility to respond to the author(s) with approval or disapproval within thirty (30) days of submission of the manuscript to WPATH.
12. In case of disapproval, the President may decide to hold a special meeting with the Chair and Co-Chairs of the SOC8 and Board members to discuss the manuscript and the reasons for not approving publication.
13. There may be cases where it will be in the benefit of the SOC8 development process to publish the manuscript before the SOC8 has been completed, but there may be cases when the manuscript will only be approved for submission after the SOC8 has been published, acknowledging that the data for the manuscript may need to be refreshed.

- * This will be referred to as “Confidential Information”, which means all non-public, confidential, and/or proprietary information that is marked as “Confidential Information” as described below and which is disclosed by one party to the other, including but not limited to software, inventions (whether patentable or not), algorithms, diagrams, drawings, processes, research, product or strategic plans or collaborations or partnerships, financial information, or business models. Confidential Information, if in tangible or readable form, shall be marked as such at the time of disclosure and if disclosed orally, shall be reduced to writing, marked confidential, and addressed to the other party within ten (10) days after disclosure.
- ** See T’Sjoen, G., Motmans, J., Arcelus, J., & Bouman, W. P. (2017). The need of patient involvement in transgender healthcare research. *Journal of Sexual Medicine*, 14(12), 1494-1495.
Bouman, W. P., Arcelus, J., T’Sjoen, G., De Cuypere, G., Galupo, M. P., Kreukels, B. P. C., Leibowitz, S., Riggs, D. W., Schechter, L. S., & Veale, J. (2018). Transgender and gender diverse people’s involvement in transgender health research. *International Journal of Transgenderism*, 19(4), 357-358 or <https://www.tandfonline.com/doi/full/10.1080/15532739.2018.1543066>
- *** See Bouman, W. P., Suess, A., Motmans, J., Green, J., Deutch, M., Adams, N., Safer, J., Smiley, A., and Winter, S. (2017). Language and transgender health. *International Journal of Transgenderism*, 18(1), 1-6 or <https://www.tandfonline.com/doi/full/10.1080/15532739.2016.1262127>
See T’Sjoen, G., Radix, A., Motmans, J. (2020). Language & Ethics in Transgender Health. *Journal of Sexual Medicine*. Advanced online publication. doi.org/10.1016/j.jsxm.2020.05.017

**Brief Summary Proposal to Support Guideline Development
for World Professional Association for Transgender Health**

31 July 17

**Karen A. Robinson, PhD
Director JHU Evidence-based Practice Center
Associate Professor of Medicine, Epidemiology, and Health Policy and Management
Johns Hopkins University**

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Robinson, JHU

JHU_000003202

We are excited about the opportunity to support guideline development for the World Professional Association for Transgender Health (WPATH). We understand that WPATH is seeking to update and revise the Standards of Care (SOC) for the Health of Transsexual, Transgender, and Gender Nonconforming People (Version 7, 2011). We are particularly excited to help WPATH develop evidence-based guidelines by providing an independent evidence-review team to conduct rigorous, comprehensive, and transparent systematic reviews to inform the guideline recommendations.

We propose the following services to support WPATH and SOC8:

- 1) In consultation with WPATH personnel, draft initial guidelines development process or “WPATH Guideline Procedures Manual”.
- 2) Orientation to the guideline development process and refinement of the scope. This includes:
 - a. presentation and discussion of systematic review and guideline development processes with WPATH personnel, especially the guideline chairs and chapter leads
 - b. preliminary searching
 - c. identification of statements within chapters for which systematic reviews will be conducted, and which will be ‘best practice statements’ based on consensus expert opinion
- 3) Conduct systematic reviews for the topics selected, including:
 - a. refinement of questions using PICO format (population, intervention, comparison, outcome)
 - b. search for evidence
 - c. screen results
 - d. data extraction
 - e. data assessment and synthesis
 - f. grade certainty or confidence in evidence
 - g. presentation of results to guideline panel (e.g., report, evidence and summary tables, in-person presentation to panel).
- 4) Provide orientation and guidance to guideline panel in interpreting results of systematic reviews, in developing recommendation statements, and in grading the recommendation statements. This includes providing guidance on development of consensus-based or good practice statements.
- 5) Provide critical feedback on statements and guideline document(s). * We understand need to, and will facilitate, the presentation of details on the process and, at least, some chapters at the WPATH World Congress.
- 6) Provide assistance in submission of relevant guideline modules or chapters to the National Guideline Clearinghouse (guidelines.gov).

Proposed Team and General Structure

The proposed PI (Karen A. Robinson, PhD) is Director of the AHRQ-designated Johns Hopkins University Evidence-based Practice Center (EPC) and has been a leader in Cochrane for more than 20 years. (Please see attached CV.) Dr. Robinson has worked with a number of multi-specialty organizations in developing evidence-informed recommendations and policy, including serving on NRC and IOM panels (The National Academies), and conducting systematic reviews used by professional organizations, and government agencies (e.g., CF Foundation, KDIGO, USPSTF, CMS, OMAR). She also designed and implemented a process for the development and maintenance (including updating) of evidence-based guidelines for a large organization (CF Foundation). Dr. Robinson, JHU

Robinson is a member of G-I-N (Guidelines International Network), serving on the steering group for G-I-N Tech. Dr. Robinson has specific experience in providing guidance and training for guideline panel members in the assessment of evidence (such as with GRADE) and the development of recommendations, guided by the standards guideline development from the IOM, as well as from guideline appraisal concepts, such as from AGREE and GLIA. She also has experience in drafting and critically reviewing guideline documents, specifically ensuring clear links between the evidence and recommendation statements.

Under leadership from Dr. Robinson, the project would include an experienced EPC faculty member (Lisa M. Wilson, ScM). Ms. Wilson is a Research Associate, Health Policy & Management and has been at the EPC for over 10 years; she has managed and led 19 EPC evidence reviews. (Please see CV.) Ms. Wilson has also conducted research to improve systematic review methodology. Ms. Wilson was a key team player, taking the lead on several sections, for our work with the KDIGO guidelines.

The project would be managed by an experienced senior project manager, with the assistance of an experienced Research Assistant. Additionally, we plan to engage graduate students to assist with tasks such as screening and data extraction. Also available are EPC-affiliated medical librarians and statisticians with experience in supporting systematic review teams.

We have extensive experience in conducting high quality systematic reviews, while adhering to strict timelines with deliverables. We also have experience in addressing challenges in evidence synthesis. For instance, Dr. Robinson serves on the Methods Steering Committee for the AHRQ EPC Program and has led workgroups developing guidance on integrating different types of evidence, such as existing reviews, into new systematic reviews.

As we have done with some of our prior work, we will rely on WPATH personnel, including guideline chairs, chapter leads and, as relevant, chapter committee members, as the domain experts. Their input will ensure that we are addressing the appropriate questions and producing reviews and report(s) that will be most useful in developing the guidelines. Input will be sought at the beginning of the work and, as needed, to address any domain-specific questions throughout the process.

Estimated Cost

We have prepared a budget for 12 months, assuming start date of 1 September 2017, with direct cost \$178,461. We understand that WPATH has a policy of not paying more than 10% IDC (indirect cost; also called 'facilities and administrative' fee or overhead) so total proposed budget is \$196,307. Travel costs, such as to attend meetings to provide orientation or report results, will be reimbursed separately. As in the prior proposals submitted, we would be open to discussing ways to lower the total budget, such as limiting the number or scope of the reviews, or limiting the services provided.

We suggest a quarterly payment schedule based on milestones, for example:

1. upon initiation of project with signed contract
2. upon submission of final PICO document outlining questions for review
3. upon submission of the draft report of the systematic reviews
4. upon submission of final report of systematic reviews

We look forward to the opportunity to provide further details or to respond to any questions.

Robinson, JHU

JHU_00003204

Please find attached CVs for Dr. Robinson and Ms. Wilson.

Robinson, JHU



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August 26, 2020

Dear Karen:

We hope this email finds you well.

On behalf of the Executive Committee, the SOCV8 Chair and Co-Chairs of WPATH, we wanted to be sure to respond to you in writing prior to the 30 days deadline of the current 2 submitted manuscripts to WPATH.

In addition, we want to set out in writing to you how we would like you and your team at JHU to proceed with writing and publishing future manuscripts from the WPATH SOCV8 data.

The last 2 manuscripts were submitted for review on 27 July 2020. While the manuscripts have been under review, there have been many concerns noted regarding these papers by our Board of Directors and SOCV8 Chair and Co-Chairs.

In essence, the 2 manuscripts were evaluated on as per our Policy & Procedures Regarding the Use of WPATH SOC8 Data and the outcome of this evaluation was that the 2 manuscripts do not adhere to our Policy & Procedures Regarding the Use of WPATH SOC8 Data. This was due to point c of the Aim section: *"involves the Work Group Leader of the Chapter or, alternatively, a designated representative of that specific SOC8 Chapter, or alternatively the Chair or Co-Chairs of the SOC8 in the design, drafting of the article, and the final approval of the article"*.

We have discussed as a group how we can help you and your team addressing these issues in order for the two papers to be ready for submission.

As per the Policy & Procedures Regarding the Use of WPATH SOC8 Data you will need to reach out to the Work Group Leader of the Chapters related to the 2 manuscripts and ask him/her/they to identify one person within the chapter group to work with your team in order for the manuscripts to be finalised. Should you have difficulties getting into contact with a Work Group Leader, the SOCV8 Chair or Co-Chairs will be available to assist. This will ensure that the quality of the manuscripts fulfils adequate standards of form and content in trans health care; and is conform our Policy. It would be reasonable for this expert to be listed as a co-author of the manuscript.

In order to guaranty a quicker process for the development of future publications that use the WPATH SOCV8 data, the Policy has been adapted in order to include an approval process at an earlier stage. If anyone involved in the SOCV8 process, including yourself, would like to write a publication using the

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SOCv8 data they should follow a designated approval process (please see Figure 1 below).

We have revised our Policy & Procedures Regarding the Use of WPATH SOCv8 Data to ensure that further publication of WPATH SOCv8 is carried out in an orderly fashion; and that the Policy & Procedures are adhered to in full. We do hope that this process would encourage collaboration between your team and members of the SOCv8, who are the experts in their field, as this will be of benefit to everyone.

We would like to organise a Zoom meeting between us and yourself so the content of this letter can be discussed. Therefore, we would like to request that the 2 manuscripts are put "on hold" for submission, until we are able to meet with you (via ZOOM video call).

Please let Blaine know of your availability for the next two weeks, August 31 – September 4, between 10am ET – 4pm ET, and September 7 – 11, between 10am ET – 4pm ET, so that we can send a doodle to the EC and co-chairs to participate in our discussion.

We appreciate your understanding that these papers have a significant impact on JHU, WPATH, the work completed so far, and the eventual completion and release of the SOCv8. Great time, expertise, and care has been spent and we want to ensure that all our combined work is duly recognized, applied, and captured effectively.

Please confirm that you have received this email in good order and will defer the submission until our call and the subsequent outcome of such call.

Thank you and best regards,

WPATH EXECUTIVE COMMITTEE

Vin Tangpricha, MD, PhD – President

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Enc. *Policy & Procedures Regarding the Use of WPATH SOC8 Data (version 2)*

Designated approval process for publication of Data (Figure 1)

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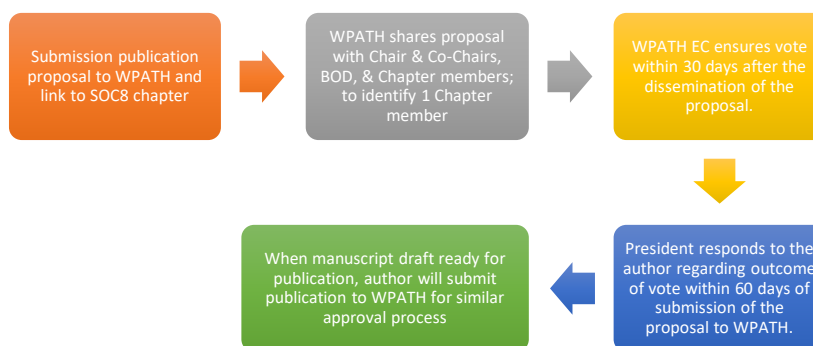
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Figure 1 - Designated approval process for publication of Data



From: [Karen Robinson](#)
To: [Lisa Wilson](#); [Kellan Baker](#); [Kristen McArthur](#); [Vaadeem Dukhanin](#)
Subject: FYI FW: Letter from Your WPATH EC and SOC8 Co-Chairs - re: SOC8 Data
Date: Wednesday, October 21, 2020 8:44:39 AM
Attachments: image003.png
Policy & Procedures Regarding the Use of WPATH SOC8 Data Final Approved Aug 2020.pdf

All –

I think some of you know but, with this last message from WPATH and a canceled call, I wanted to be sure you were all aware of the situation.

Please work diligently to get manuscripts (re)submitted and let me know if you receive messages from members of WPATH or journal editorial boards.

I am happy to have a Zoom call to talk through any concerns or questions you may have – just let me know and we will get something in the calendar.

Thanks for all of your hard work on this project!

Thanks,
Karen

From: Karen Robinson
Sent: October 20, 2020 8:23 PM
To: WPATH EC <wpathec@wpath.org>; Jon Arcelus <Jon.Arcelus@nottingham.ac.uk>; Eli Coleman <dreli@umn.edu>; Asa Radix <asa.radix@gmail.com>; Blaine Vella <blaine@wpath.org>
Cc: Stephen Fisher REDACTED ; Stefanie Gregory REDACTED
Subject: FW: Letter from Your WPATH EC and SOC8 Co-Chairs - re: SOC8 Data
Importance: High

All –

I am concerned about this message sent to the members of SOC8 Working Group Members as it suggests that there continues to be incorrect interpretation regarding data ownership and publications. WPATH approval for our publications is not required under the terms of the agreement, the WPATH policy was not incorporated into the executed agreement so it is not binding on us, and the JHU institution policies on academic freedom and intellectual property prohibit such restrictions/approvals regarding publication.

It seems as though the misunderstanding may be based on the sentence in section 7 of contract that states that WPATH “retains the unrestricted right to use to Project Data ... including the publication of the Project Data and the communication of Project Data to third parties.” Retains the right is not the same as ownership, and it also does not preclude JHU from also having those same rights in the Project Data.

We have the right to publish and any JHU publications arising out of the work conducted as part of this contract are not subject to approval by WPATH nor subject to any policy of WPATH. We will continue to send draft manuscripts to WPATH for review and will give any comments received due regard.

I feel like I have made these statements several times in email and phone conversations, beginning when the contract was being negotiated in 2018. I suggest that a call might be useful and I have copied in individuals from our Office of Research Administration and Office of General Counsel.

Thanks,
Karen

Karen A. Robinson, PhD

Professor of Medicine, Epidemiology, and Health Policy & Management

Director, Johns Hopkins University Evidence-based Practice Center

Johns Hopkins University

REDACTED

REDACTED

REDACTED

REDACTED



From: Jamie Hicks <jamie@wpath.org>

Sent: October 20, 2020 11:39 AM

To: Blaine Vella <blaine@wpath.org>

Cc: WPATH EC <wpathec@wpath.org>; Jon Arcelus <jon.arcelus@nottingham.ac.uk>; Eli Coleman <dreli@umn.edu>; asa.radix@gmail.com

Subject: Letter from Your WPATH EC and SOC8 Co-Chairs - re: SOC8 Data

Importance: High

External Email - Use Caution



Dear SOC8 Working Group Members,

Thank you very much for your hard work on the SOC8. Many of the chapters are going through Delphi at present whilst many chapters also are finalizing the text of their chapters and/or recommendation statements. This is an exciting accomplishment! We are hoping to see completed chapters in early 2021.

We are writing you today to inform you of an update of our Policies & Procedures regarding the WPATH SOC8 Data. As you know, WPATH commissioned a number of systematic reviews to be conducted by John Hopkins University. These systematic reviews are the property of WPATH. We would like to see as many systematic review manuscripts as possible to be published (ideally in our official journal, International Journal of Transgender Health). We want to let you know that if you or any other of your chapter members are interested in contributing a manuscript based on one of the systematic reviews, there is a policy on how to request a copy of the reviews and permission to publish these reviews. Please see the attached policy approved by the WPATH board that provides the details on how to initiate this process.

As a final note, we offer our apologies regarding the tardiness of this message and the recently developed Policy & Procedures Regarding the Use of WPATH SOC8 Data. We were caught on the wrong foot when the John Hopkins University Team informed us of wanting to publish 3 papers based on the SOC8 data.

Subsequently, we developed the attached Policy, which was ratified by the Board of Directors and the SOC8 Chair and Co-Chairs.

One paper from the John Hopkins University Team has recently been published online in the International Journal of Transgender Health, whilst two papers have not received the green light to be published. It is paramount that any publication based on the WPATH SOC8 data is thoroughly scrutinized and reviewed to ensure that publication does not negatively affect the provision of transgender healthcare in the broadest sense.

We hope that you find the Policy & Procedures Regarding the Use of WPATH SOC8 Data helpful. We thank you very much again for your support of the SOC8 revision.

Sincerely,

Vin Tangpricha
Gail Knudson
Randi Ettner

JHU_000012046

Baudewijntje Kreukels
Walter Bouman
On behalf of WPATH

Enc. *Policy & Procedures Regarding the Use of WPATH SOC8 Data*

Jamie

Jamie Hicks
She/her/hers
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