From:

Beckett, Daryl K HLTH:EX

Sent: To:

Tuesday, July 10, 2012 4:45 PM Campbell, Corrie L HLTH:EX

Subject:

FW: Priority Two - Media Request - Deadline noon - ADM: Elaine McKnight FW: Private

3D/Entertainment ultrasound BC

Attachments:

Fw: Briefing request for Minister - "entertainment" ultrasound clinics

From: May, Stephen GCPE:EX

Sent: Thursday, June 28, 2012 11:54 AM

To: Beckett, Daryl K HLTH:EX

Cc: Jabs, Ryan GCPE:EX; Hagerman, Shannon GCPE:EX

Subject: RE: Priority Two - Media Request - Deadline noon - ADM: Elaine McKnight FW: Private 3D/Entertainment

ultrasound BC

Yeah - just got sent here as an FYI - went to the MO this morning. Obviously nothing scheduled yet.

Challenge is (as noted well in the appendix) - is

S13

Stephen May | Government Communications and Public Engagement

Ministry of Health P: 250-952-3401

S17 F: 250-952-1883

From: Beckett, Daryl K HLTH:EX

Sent: Thursday, June 28, 2012 11:47 AM

To: May, Stephen GCPE:EX

Cc: Jabs, Ryan GCPE:EX; Hagerman, Shannon GCPE:EX

Subject: Re: Priority Two - Media Request - Deadline noon - ADM: Elaine McKnight FW: Private 3D/Entertainment

ultrasound BC

We put an Info BN forward that

Not sure how far up the org chart that has got to date. No Min briefing has occurred or been scheduled yet to my knowledge.

From: May, Stephen GCPE:EX

Sent: Thursday, June 28, 2012 09:50 AM

To: Beckett, Daryl K HLTH:EX

Cc: Jabs, Ryan GCPE:EX; Hagerman, Shannon GCPE:EX

Subject: Priority Two - Media Request - Deadline noon - ADM: Elaine McKnight FW: Private 3D/Entertainment

ultrasound BC

1 of 75

Morning Daryl,

CBC – after its story on the entertainment ultrasound industry and fetal gender determination – is looking for a follow-up. When the Minister was interviewed – he was quoted saying the following (insuring is a typo – pretty sure he meant ensuring).

This was followed by an priority briefing request.

Mike de Jong: I was troubled by what I learned. What I want to know is what the options are for insuring that there are a set of guidelines that do apply to those facilities.

Rankin: BC's Health minister says even he didn't realize that entertainment ultrasound clinics aren't governed by regulations until our report and he will be looking at bringing in new rules in the days to come.

So – has the briefing occurred yet – and are we looking at new rules/regulations.

Thanks.

Stephen May | Government Communications and Public Engagement

Ministry of Health P: 250-952-3401 C: \$17 F: 250-952-1883

From: ANNIE BURNS-PIEPER [mailto:ANNIE.BURNS-PIEPER@cbc.ca]

Sent: Thursday, June 28, 2012 8:44 AM

To: May, Stephen GCPE:EX

Cc: Timothy Sawa

Subject: Private 3D/Entertainment ultrasound 8C

Hi Stephen, I am just following up after our story on the entertainment ultrasound industry and fetal gender determination.

Our original investigation can be viewed here:

http://www.cbc.ca/news/health/story/2012/06/12/ultrasound-gender-testing.html

and here is some follow up coverage.

http://www.calgaryherald.com/opinion/editorials/crime+girl/6798227/story.html

http://www.cbc.ca/news/canada/story/2012/06/13/ultrasounds-entertainment-ban.html

 $\underline{http://www.cbc.ca/news/canada/british-columbia/story/2012/06/13/bc-ultrasound-gender-investigation-reaction.html}$

There have been some calls to ban or at least look into this issue and the B.C. Health Minister Mike de Jong said he was troubled by what he learned and is trying to find out the options for insuring that there are a set of guidelines apply to private facilities. I was hoping you can tell me what has been done since he made this statement and if there are any plans to move forward on this issue.

Do feel free to contact me 416-205-3156 if you have any questions about what I am asking.

Best, Annie Burns-Pieper

<u>annie.burns-pieper@cbc.ca</u> phone: 416-205-3156 mobile: 416-570-7615 fax: 416-205-6668

205 Wellington Street West

Toronto, Ontario

M5V 3G7

From:

Webb, Jennifer HLTH:EX

Sent:

Monday, June 25, 2012 10:03 AM Krystalowich, Katharine HLTH:EX

Subject:

RE: Fetal Sex Determination

Attachments:

934058 BN - Fetal Sex Determination by Ultrasound.docx; 934958 BN Appendix.docx

Hi, Katharine: Here is the version that was loaded on Elaine McKnight's sharepoint this morning...can't vouch that she will not be making further changes, but it has been signed off by the Director and A/Exec Director of Legislation.

Jennifer Webb/Professional Regulation/Legislation and Professional Regulation/Ministry of Health/250-952-1328

From: Krystalowich, Katharine HLTH:EX Sent: Monday, June 25, 2012 9:46 AM

To: Webb, Jennifer HLTH:EX

Subject: RE: Fetal Sex Determination

Thanks, I am going to brief my director today so wanted to see if it was available. Katharine

From: Webb, Jennifer HLTH:EX

Sent: Monday, June 25, 2012 9:44 AM **To:** Krystalowich, Katharine HLTH:EX **Subject:** RE: Fetal Sex Determination

Hi, Katharine: I will as soon as I can get hold of it...CLIFF shows it's still in our office, but I don't think that's correct, I'm pretty sure it went to the ADM late Friday. Our support person in flexing today, but I'll try to track it down. If not today, then tomorrow, when Aleks is back in the office.

Jennifer Webb/Professional Regulation/Legislation and Professional Regulation/Ministry of Health/250-952-1328

From: Krystalowich, Katharine HLTH:EX Sent: Monday, June 25, 2012 9:28 AM

To: Webb, Jennifer HLTH:EX

Subject: RE: Fetal Sex Determination

Hi Jennifer, are you able to share the final version of your note?

From: Webb, Jennifer HLTH:EX

Sent: Wednesday, June 20, 2012 4:04 PM **To:** Krystalowich, Katharine HLTH:EX **Subject:** RE: Fetal Sex Determination

Hi, Katharine: Thank you for offering to review this draft.

Would you be able to offer any language around the ability of pregnant women to discern the sex of the fetus through home testing (blood or urine)?

This is getting too long, but I have been asked to attach an appendix that talks about

S13

\$10

Sorry, but there is a rush on this - it's due at the Minister's Office on Friday.

Thanks very much.

HTH-2012-00136 Page 4 Jennifer Webb/Professional Regulation/Legislation and Professional Regulation/Ministry of Health/250-952-1328

From: Krystalowich, Katharine HLTH:EX Sent: Tuesday, June 19, 2012 3:40 PM

To: Webb, Jennifer HLTH:EX

Subject: RE: Fetal Sex Determination

I would be happy to review a draft if you would like input from our division or if you able to share the final BN to the Minister my area would appreciate receiving it.

Katharine

From: Webb, Jennifer HLTH:EX

Sent: Tuesday, June 19, 2012 2:07 PM To: Krystalowich, Katharine HLTH:EX Subject: RE: Fetal Sex Determination

Excellent....many thanks.

Jennifer Webb/Prafessianal Regulation/Legislation and Professional Regulation/Ministry of Health/250-952-1328

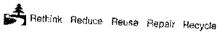
From: Krystalowich, Katharine HLTH:EX Sent: Tuesday, June 19, 2012 2:06 PM

To: Webb, Jennifer HLTH:EX
Subject: Fetal Sex Determination

Hi Jennifer, here is the new policy as well as the BN as discussed. I will be in a meeting for about an hour but please let me know if you have any questions.

Hope our discussion helped,

Katharine Krystalowich Project Manager Ministry of Health Health Authorities Division Hospital and Provincial Services Branch 250 952-2346



From: Sent:

Krystalowich, Katharine HLTH:EX Thursday, June 21, 2012 8:27 AM

To:

Webb, Jennifer HLTH:EX RE: Fetal Sex Determination

Subject: Attachments:

Non-medical-Use-of-Ultrasound.pdf; SOGC Fetal Sex Determination 192E-PS-

April2007.pdf; RE: Birth rates by gender; 934058 BN - Fetal Sex Determination by

Ultrasound.docx

Hi Jennifer, I appreciate the chance to collaborate on this issue. I've made a couple of comments on the BN and am attaching some reference material in relation to those.

Unfortunately I don't have specifics on the alternate sex determination products but they are advertised extensively: http://www.intelligender.com/home.html. The only language I have is what is in the RN I provided.

S13

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. As you mentioned

there are several avenues (blood and urine tests, out of country clinics) available to a pregnant woman if she wants to know fetal sex so regulating "entertainment" US on this will not prevent early disclosure.

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Please let me know if I can help further.

Katharine

From: Webb, Jennifer HLTH:EX

Sent: Wednesday, June 20, 2012 4:04 PM **To:** Krystalowich, Katharine HLTH:EX **Subject:** RE: Fetal Sex Determination

Hi, Katharine: Thank you for offering to review this draft.

Would you be able to offer any language around the ability of pregnant women to discern the sex of the fetus through home testing (blood or urine)?

This is getting too long, but I have been asked to attach an appendix that talks about

S13

S13

Sorry, but there is a rush on this - it's due at the Minister's Office on Friday.

Thanks very much.

Jennifer Webb/Professional Regulation/Legislation and Professional Regulation/Ministry of Health/250-952-1328

From: Krystalowich, Katharine HLTH:EX Sent: Tuesday, June 19, 2012 3:40 PM

To: Webb, Jennifer HLTH:EX

Subject: RE: Fetal Sex Determination

I would be happy to review a draft if you would like input from our division or if you able to share the final BN to the Minister my area would appreciate receiving it.

Katharine

From: Webb, Jennifer HLTH:EX

Sent: Tuesday, June 19, 2012 2:07 PM

To: Krystalowich, Katharine HLTH:EX **Subject:** RE: Fetal Sex Determination

Excellent....many thanks.

Jennifer Webb/Professional Regulation/Legislation and Professional Regulation/Ministry of Health/250-952-1328

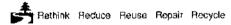
From: Krystalowich, Katharine HLTH:EX Sent: Tuesday, June 19, 2012 2:06 PM

To: Webb, Jennifer HLTH:EX
Subject: Fetal Sex Determination

Hi Jénnifer, here is the new policy as well as the BN as discussed. I will be in a meeting for about an hour but please let me know if you have any questions.

Hope our discussion helped,

Katharine Krystalowich Project Manager Ministry of Health Health Authorities Division Hospital and Provincial Services Branch 250 952-2346



From:

Webb, Jennifer HLTH:EX

Sent:

Wednesday, June 20, 2012 3:59 PM

To:

Eaton, Kirk E HLTH:EX

Subject:

"Entertainment" Ultrasound Clinics

Importance:

High

Hi, Kirk: I have been asked to write a BN for the Minister on the topic of "entertainment" ultrasound clinics and fetal sex determination.

Corrie Campbell has suggested that you might be able to provide some information

S13

S13

Any information you can provide would be most appreciated.

Apologies, but this is a rush - it is due at the Minister's Office on Friday.

Thank you.

Jennifer Webb/Professional Regulation/Legislation and Professional Regulation/Ministry of Health/250-952-1328

Pages 9 through 13 redacted for the following reasons:

S14

From: Sent: Webb, Jennifer HLTH:EX Friday, June 15, 2012 4:27 PM Beckett, Daryl K HLTH:EX

To: Subject:

FW: RUSH: MO Priority Briefing re "Entertainment" Ultrasound Clinics - due Friday, June

22nd (Cliff 934255/DMA Log #16)

Mike de Jong: I was troubled by what I learned. What I want to know is what the options are for insuring that there are a set of guidelines that do apply to those facilities.

Rankin: BC's Health minister says even he didn't realize that entertainment ultrasound clinics aren't governed by regulations until our report and he will be looking at bringing in new rules in the days to come. [xrz] TNO...

This is quite different from whether this activity which could be regulated under the PHA or HPA, no?

Jennifer Webb/Professional Regulation/Legislation and Professional Regulation/Ministry of Health/250-952-1328

From: Campbell, Corrie L HLTH: EX Sent: Friday, June 15, 2012 4:02 PM

To: Webb, Jennifer HLTH:EX; Beckett, Daryl K HLTH:EX

Subject: RE: RUSH: MO Priority Briefing re "Entertainment" Ultrasound Clinics - due Friday, June 22nd (Cliff

934255/DMA Log #16)

Awesome.

From: Webb, Jennifer HLTH:EX Sent: Friday, June 15, 2012 4:02 PM

To: Campbell, Corrie L HLTH:EX; Beckett, Daryl K HLTH:EX

Subject: RE: RUSH: MO Priority Briefing re "Entertainment" Ultrasound Clinics - due Friday, June 22nd (Cliff

934255/DMA Log #16)

Draft to Daryl by noon Monday okay?

Jennifer Webb/Professional Regulation/Legislation and Professional Regulation/Ministry of Health/250-952-1328

From: Campbell, Corrie L HLTH: EX Sent: Friday, June 15, 2012 3:42 PM

To: Beckett, Daryl K HLTH:EX; Webb, Jennifer HLTH:EX

Subject: FW: RUSH: MO Priority Briefing re "Entertainment" Ultrasound Clinics - due Friday, June 22nd (Cliff

934255/DMA Log #16)

Can you let me know where we are on this?

From: Docs Processing HLTH:EX Sent: Friday, June 15, 2012 3:40 PM

To: Nojszewski, Aleksandra HLTH:EX; Bouchard, Carola HLTH:EX; MSDocs Processing Unit HLTH:EX

Cc: Campbell, Corrie L HLTH:EX; Docs Processing HLTH:EX

Subject: RUSH: MO Priority Briefing re "Entertainment" Ultrasound Clinics - due Friday, June 22nd (Cliff 934255/DMA

Log #16)

I have been advised that Jane Crickmore's branch and Leg/Prof Reg are working on this, and that Corrie Campbell is the lead. Please confirm.

Please assign to staff to prepare a rush briefing document for Minister de Jong regarding this issue.

I have assigned Friday, June 22nd as the due date, but this date may need to be adjusted depending on when the meeting is scheduled.

The assignment folder is now ready for pickup.

Thanks.

Kathy Simonson Program Coordinator / Bocuments Processing Unit / Ministry of Health 5-2 1515 Blanshard St, Victoria BC V6W 3C8 Telephone 250 952-1811

kathy.simonson@gov.bc.ca

From: Casanova, Tamara HLTH:EX Sent: Friday, June 15, 2012 2:48 PM

To: Docs Processing HLTH:EX

Subject: Priority Briefing request for Minister - "Entertainment" Ultrasound Clinics

Hi Kathy,

Can we please get staff started on materials for this not yet scheduled Minister briefing.

I will advise as soon as we have a confirmed date and time.

Many thanks,

Tamara Casanova | Executive Coordinator & Minister's Office Liaison Officer | Office of the Deputy Minister | Ministry of Health | P: 250.952.1908 | F: 250.952.1909 | tamara.casanova@gov.bc.ca

🧩 Places consider the engineering before printing this A-mail

From: Casanova, Tamara HLTH:EX Sent: Thursday, June 14, 2012 8:30 AM

To: Jukes, Shaina HLTH:EX

Subject: Priority Briefing request for Minister - "Entertainment" Ultrasound Clinics

Good morning,

Can you give me a call on this one..

Many thanks,

Tamara Casanova | Executive Coordinator & Minister's Office Liaison Officer | Office of the Deputy Minister | Ministry of Health | P: 250.952.1908 | S17 | F: 250.952.1909 | tamara.casanova@gov.bc.ca

A Stranger consistes the applications industrializing that reach

From: Manning, John HLTH:EX

Sent: Wednesday, June 13, 2012 9:04 PM

To: Casanova, Tamara HLTH:EX

Cc: Maksymetz, Richard HLTH:EX; Miniaci, Mario HLTH:EX; Jukes, Shaina HLTH:EX; Stewart, Michelle GCPE:EX; 36

Page 11

Whitmarsh, Graham HLTH:EX Subject: Briefing request for Minister - "entertainment" ultrasound clinics

Hi Tamara,

Please have a briefing set up for the Minister, as per information below. This should be a priority.

Thanks,

John

CBUT (CBC-TV Vancouver) **CBC News Vancouver**

\$3

John Manning | Executive Assistant Office of the Honourable Michael de Jong, QC Minister of Health Province of British Columbia | F: 250.356.9587 **S**17

12 of 75

From:

Beckett, Daryl K HLTH:EX

Sent: To: Friday, June 15, 2012 9:38 AM Beckett, Daryl K HLTH:EX

Subject:

Clinic: Early baby scans a 'Chinese' thing; Councillor Chak Au says unwanted Asian

traditions are seeping into Richmond

Clinic: Early baby scans a 'Chinese' thing; Councillor Chak Au says unwanted Asian traditions are seeping into Richmond

Richmond News

Friday, June 15, 2012

Page 1

By Alan Campbell

1

Pages 18 through 19 redacted for the following reasons:

S14 S3

From:

Beckett, Daryl K HLTH:EX

Sent: To: Friday, June 15, 2012 5:05 PM Webb, Jennifer HLTH:EX

Subject:

Sex ratios among Canadian liveborn infants of mothers from different countries

http://www.cmaj.ca/content/184/9/E492

Pages 21 through 25 redacted for the following reasons:

Not Responsive S14

From:

Beckett, Darvl K HLTH:EX

Sent:

Thursday, June 14, 2012 8:30 AM

To:

Webb, Jennifer HLTH; EX

Subject:

FW: CBUT: De Jong troubled by ultrasound clinic practice

From: Stewart, Michelle GCPE:EX Sent: Wed, June 13, 2012 8:23 PM

To: Davidson, Heather (ADM) HLTH:EX; Whitmarsh, Graham HLTH:EX; Beckett, Daryl K HLTH:EX; Campbell, Corrie L

HLTH:EX

Cc: Jabs, Ryan GCPE:EX; May, Stephen GCPE:EX

Subject: Re: CBUT: De Jong troubled by ultrasound clinic practice

S13

From: Stewart, Michelle GCPE:EX

Sent: Wednesday, June 13, 2012 08:19 PM

To: Davidson, Heather (ADM) HLTH:EX; Whitmarsh, Graham HLTH:EX; Beckett, Daryl K HLTH:EX; Campbell, Corrie L

HLTH:EX

Cc: Jabs, Ryan GCPE:EX; May, Stephen GCPE:EX

Subject: Fw: CBUT: De Jong troubled by ultrasound clinic practice

Transcript below

From: tno@gov.bc.ca [mailto:tno@gov.bc.ca]
Sent: Wednesday, June 13, 2012 08:13 PM

Subject: CBUT: De Jong troubled by ultrasound clinic practice

CBUT (CBC-TV Vancouver) CBC News Vancouver 13-Jun-2012 18:10 \$3

18 of 75

Campbell, Corrie L HLTH:EX

From:

Stevens, Valerie HLTH: EX

Sent:

Thursday, June 14, 2012 7:16 AM

To:

Campbell, Corrie L HLTH: EX

Subject:

Re: female sex determination by ultrasound

·

Okay.

Val Stevens

BC Ministry of Health

From: Campbell, Corrie L HLTH:EX Sent: Thursday, June 14, 2012 07:08 AM

To: Stevens, Valerie HLTH:EX

Subject: Re: female sex determination by ultrasound

Thanks anyway Val. Jane Crickmore just sent it.

From: Stevens, Valerie HLTH:EX

Sent: Thursday, June 14, 2012 07:01 AM

To: Campbell, Corrie L HLTH:EX

Subject: Re: female sex determination by ultrasound

Will do.

Val Stevens

BC Ministry of Health

From: Campbell, Corrie L HLTH:EX Sent: Thursday, June 14, 2012 04:41 AM

To: Stevens, Valerie HLTH:EX

Subject: female sex determination by ultrasound

Can you provide me a copy of the communiqué, or what was sent to Health Authorities.

Corrie Campbell

A/Executive Director

Legislation and Professional Regulation Ministry of Health Office 1250) 952-2283

Cell

S17

Fax (250) 952-2205

Email Corrie.Campbell@gov.bc.ca

Will, Jordan HLTH:EX

From:

Crickmore, Jane HLTH:EX

Sent:

Thursday, June 14, 2012 5:53 AM

To:

Campbell, Corrie L HLTH: EX; Beckett, Daryl K HLTH: EX

Cc:

Neal, Tegan HLTH:EX

Subject: Attachments: RE: CBC Follow up re: Fetal Sex Determination by Ultrasound - new ministry policy Fetal Sex Determination by Ultrasound Policy Communique 2012-08.pdf; Keepsake

ultrasounds Draft March 16, 2010.pdf

Daryl and Corrie - attached is a copy of the policy communiqué that was sent out from the Ministry to the HAs, and the Keepsake US report from 2010.

Key results from the US report:

Three recent systematic reviews were located reporting on at least 40 studies that examined outcomes following prenatal US. The authors' conclusions were consistent, i.e., overall there has been essentially no measurable impact of US on maternal or perinatal outcomes; childhood growth, neurological development, or school performance; childhood malignancy; and intellectual performance and mental diseases after childhood.

However, important themes emerged:

- •Research was generally conducted using US technology with lower acoustic potency than what is available today; fetal exposure using current equipment can be almost eight times greater than that used previously and the effects of this increased intensity are unknown.
- •The study milieu were medically necessary services provided by licensed sonographers or physicians and did not explore US effects as provided by less skilled providers in commercial venues where quality assurance may not be in-built.
- •Given the unknowns with keepsake US and the potential jeopardy to fetal health, there is little support for US examinations that are not deemed medically necessary.

Jane Crickmore

Executive Director

Laboratory, Diagnostic and Blood Services Branch Medical Services and Health Human Resources Division Ministry of Health

3 - 1, 1515 Blanshard Șt Victoria BC V8W 3C8

Tel: (250) 952-1323 Fax: (250) 952-3133

Email: jane.crickmore@gov.bc.ca

----Original Message----

From: Campbell, Corrie L HLTH:EX Sent: Thu, June 14, 2012 4:30 AM

To: Beckett, Darvl K HLTH:EX: Crickmore, Jane HLTH:EX

Subject: RE: CBC Follow up re: Fetal Sex Determination by Ultrasound - new ministry policy

I would be interested in getting a copy. Looks like the minister committed to looking at options for guidelines for this area.

----Original Message----

From: Beckett, Daryl K HLTH:EX Sent: Wed, June 13, 2012 5:01 PM

To: Crickmore, Jane HLTH:EX
Cc: Campbell, Corrie L HLTH:EX

Subject: FW: CBC Follow up re: Fetal Sex Determination by Ultrasound - new ministry policy

Campbell, Corrie L HLTH:EX

From:

Campbell, Corrie L HLTH:EX

Sent:

Thursday, June 14, 2012 4:30 AM

To:

Beckett, Daryl K HLTH:EX; Crickmore, Jane HLTH:EX

Subject:

RE: CBC Follow up re: Fetal Sex Determination by Ultrasound - new ministry policy

Attachments:

Re: CBUT: De Jong troubled by ultrasound clinic practice

I would be interested in getting a copy. Looks like the minister committed to looking at options for guidelines for this area.

----Original Message----

From: Beckett, Daryl K HLTH:EX Sent: Wed, June 13, 2012 5:01 PM

To: Crickmore, Jane HLTH:EX Cc: Campbell, Corrie L HLTH:EX

Subject: FW: CBC Follow up re: Fetal Sex Determination by Ultrasound - new ministry policy

Jane, you probably should have been in on this discussion. Not sure if people know about the keepsake review you had Vicki Foerster do in 2010.

----Original Message----

From: Stewart, Michelle GCPE:EX

Sent: Wednesday, June 13, 2012 4:04 PM

To: Campbell, Corrie L HLTH:EX; Whitmarsh, Graham HLTH:EX; Beckett, Daryl K HLTH:EX; Jabs,

Ryan GCPE:EX; Davidson, Heather (ADM) HLTH:EX

Cc: May, Stephen GCPE:EX

Subject: RE: CBC Follow up re: Fetal Sex Determination by Ultrasound - new ministry policy

We will get the story transcribed from tonight and let you know what the minister actually commits to

Michelle Stewart, Communications Director Ministry of Health, Government Communications & Public Engagement

Phone: 250-952-1889 Cell:

S17

Fax: 250-952-1883 Michelle.Stewart@gov.bc.ca

Pages 31 through 35 redacted for the following reasons:

S13

```
> ----Original Message----
> From: Stewart, Michelle GCPE:EX
> Sent: Wednesday, June 13, 2012 11:57 AM
> To: Stewart, Michelle GCPE:EX; Manning, John HLTH:EX; Miniaci, Mario HLTH:EX; Maksymetz, Richard HLTH:EX; Whitmarsh, Graham HLTH:EX; Korabek, Barbara HLTH:EX; Manning, Nichola HLTH:EX; Power, Stephanie A HLTH:EX
> Cc: Jabs, Ryan GCPE:EX; May, Stephen GCPE:EX; Belanger, Matthew GCPE:EX; Gleeson, Kelly T GCPE:EX
> Subject: RE: CBC Follow up re: Fetal Sex Determination by Ultrasound - new ministry policy
> And this is the latest on the CBC web site:
```

```
>
> Michelle Stewart, Communications Director
> Ministry of Health, Government Communications & Public Engagement
                                         Fax: 250-952-1883
> Phone: 250-952-1889 Cell:
                                 S17
> Michelle.Stewart@gov.bc.ca
>
>
>
> ----Original Message-----
> From: Stewart, Michelle GCPE:EX
> Sent: Wednesday, June 13, 2012 11:52 AM
> To: Stewart, Michelle GCPE:EX; Manning, John HLTH:EX; Miniaci, Mario HLTH:EX; Maksymetz,
Richard HLTH:EX; Whitmarsh, Graham HLTH:EX; Korabek, Barbara HLTH:EX; Manning, Nichola
HLTH:EX; Power, Stephanie A HLTH:EX
> Cc: Jabs, Ryan GCPE:EX; May, Stephen GCPE:EX; Belanger, Matthew GCPE:EX; Gleeson, Kelly
T GCPE:EX
> Subject: RE: CBC Follow up re: Fetal Sex Determination by Ultrasound - new ministry
policy
> Importance: High
> Reporter: Eric Rankin
> Outlet: CBC TV
                                                                              HTH-2012-00136
> Deadline: 230 pm.....300 pm at the ABSOLUTE latest
                                                                              Page 24
```

Page 25

Withheld pursuant to/removed as

Copyright

```
>
> Michelle Stewart, Communications Director
> Ministry of Health, Government Communications & Public Engagement
                                         Fax: 250-952-1883
> Phone: 250-952-1889 Cell:
                                 S17
> Michelle.Stewart@gov.bc.ca
>
>
>
> ----Original Message----
> From: Stewart, Michelle GCPE:EX
> Sent: Wednesday, June 13, 2012 5:44 AM
> To: Manning, John HLTH:EX; Miniaci, Mario HLTH:EX; Maksymetz, Richard HLTH:EX
> Cc: Jabs, Ryan GCPE:EX
> Subject: FW: Fetal Sex Determination by Ultrasound - new ministry policy
                                                               S13
> john....ryan sent this to you yesterday.....
                                          S13
> From: Jabs, Ryan GCPE:EX
> Sent: Tuesday, June 12, 2012 3:48 PM
> To: Maksymetz, Richard HLTH:EX; Manning, John HLTH:EX; Miniaci, Mario HLTH:EX
> Cc: Whitmarsh, Graham HLTH:EX; Anderson, Kristy GCPE:EX; Belanger, Matthew GCPE:EX;
MacDougall, Cindy GCPE:EX; May, Stephen GCPE:EX; Porter, Rodney GCPE:EX; Stewart, Michelle
GCPE:EX
> Subject: Fetal Sex Determination by Ultrasound - new ministry policy
> The ministry has developed a new policy with your folks, docs and others on fetal sex
determination. This has been widely covered by media, particularly in regards to sex-
selected abortions.
                                             S13
> I've also attached our IN.
> Please give me a call if you'd like to discuss.
> Ryan Jabs
> Manager, Media Relations and Issues Management Ministry of Health Communications
Government Communications and Public Engagement
> (250) 952-3387
> Cell:
> Ryan.Jabs@gov.bc.ca<mailto:Ryan.Jabs@gov.bc.ca>
> From: Stevens, Valerie HLTH:EX
> Sent: Tuesday, June 12, 2012 3:41 PM
> To: Jabs, Ryan GCPE:EX; Stewart, Michelle GCPE:EX
> Cc: Anderson, Kristy GCPE:EX; Duesterwald, Meghan HLTH:EX
> Subject: RE: Fetal Sex Determination by Ultrasound (Cliff 929416 x ref 929454, 929435)
> Policy communiqué finally went out this afternoon, attached here fyi.
```

> From: Jabs, Ryan GCPE:EX

HTH-2012-00136 Page 26

```
> Sent: Monday, June 11, 2012 11:44 AM
> To: Duesterwald, Meghan HLTH:EX
> Cc: Hart, Miles HLTH:EX; Stevens, Valerie HLTH:EX; Stewart, Michelle GCPE:EX; Anderson,
Kristy GCPE:EX
> Subject: RE: Fetal Sex Determination by Ultrasound (Cliff 929416 x ref 929454, 929435)
> Thanks for the update!
`>
> Ryan Jabs
> Manager, Media Relations and Issues Management Ministry of Health Communications
Government Communications and Public Engagement
> (250) 952-3387
> Cell:
> Ryan.Jabs@gov.bc.ca<mailto:Ryan.Jabs@gov.bc.ca>
> From: Duesterwald, Meghan HLTH:EX
> Sent: Monday, June 11, 2012 11:40 AM
> To: Jabs, Ryan GCPE:EX
> Cc: Hart, Miles HLTH:EX; Stevens, Valerie HLTH:EX; Stewart, Michelle GCPE:EX; Anderson,
Kristy GCPE:EX
> Subject: RE: Fetal Sex Determination by Ultrasound (Cliff 929416 x ref 929454, 929435)
>
> Hey Ryan,
>
>
> Just FYI - this has not gone out yet. They expect DM to sign off today and will revise
transmittal date on the communiqué.
>
> Thanks,
>
> Meghan
>
> From: Jabs, Ryan GCPE:EX
> Sent: Friday, June 8, 2012 4:41 PM
> To: Stevens, Valerie HLTH:EX; Stewart, Michelle GCPE:EX
> Cc: Hart, Miles HLTH:EX; Duesterwald, Meghan HLTH:EX
> Subject: RE: Fetal Sex Determination by Ultrasound (Cliff 929416 x ref 929454, 929435)
> Okay. Thanks, Val.
> Ryan Jabs
> Manager, Media Relations and Issues Management Ministry of Health Communications
Government Communications and Public Engagement
> (250) 952-3387
> Cell:
              S17
> Ryan.Jabs@gov.bc.ca<mailto:Ryan.Jabs@gov.bc.ca>
> From: Stevens, Valerie HLTH:EX
> Sent: Friday, June 8, 2012 4:41 PM
> To: Jabs, Ryan GCPE:EX; Stewart, Michelle GCPE:EX
> Cc: Hart, Miles HLTH:EX; Duesterwald, Meghan HLTH:EX
> Subject: Re: Fetal Sex Determination by Ultrasound (Cliff 929416 x ref 929454, 929435)
> So did not go today. We'll f/u again Monday and let you know.
```

> Val Stevens

```
> BC Ministry of Health
> From: Stevens, Valerie HLTH: EX
> Sent: Friday, June 08, 2012 04:32 PM
> To: Jabs, Ryan GCPE:EX; Stewart, Michelle GCPE:EX
> Cc: Hart, Miles HLTH:EX
> Subject: Re: Fetal Sex Determination by Ultrasound (Cliff 929416 x ref 929454, 929435)
> Checking
> Val Stevens
> BC Ministry of Health
> From: Jabs, Ryan GCPE:EX
> Sent: Friday, June 08, 2012 04:31 PM
> To: Stevens, Valerie HLTH:EX; Stewart, Michelle GCPE:EX
> Cc: Hart, Miles HLTH:EX
> Subject: RE: Fetal Sex Determination by Ultrasound (Cliff 929416 x ref 929454, 929435)
> Did this go?
> Ryan Jabs
> Manager, Media Relations and Issues Management Ministry of Health Communications
Government Communications and Public Engagement
> (250) 957-3397
> Cell:
> Ryan.Jabs@gov.bc.ca<mailto:Ryan.Jabs@gov.bc.ca>
> From: Stevens, Valerie HLTH:EX
> Sent: Friday, June 8, 2012 8:44 AM
> To: Jabs, Ryan GCPE:EX; Stewart, Michelle GCPE:EX
> Cc: Hart, Miles HLTH:EX
> Subject: Fetal Sex Determination by Ultrasound (Cliff 929416 x ref 929454, 929435)
> Good morning - just a quick update on this one. The DM has approved and will be sending
out to HA CEOs today.
> Thanks.
>
> Val Stevens
> Director, Health Authority Relations and Patient Care Quality Health Authorities
Division BC Ministry of Health
> Phone: (250) 952-1990
> Email: valerie.stevens@gov.bc.ca
>
>
```

From:

Beckett, Daryl K HLTH:EX

Sent:

Wednesday, June 13, 2012 10:05 AM Beckett, Daryl K HLTH:EX

To:

Subject:

CBC investigates "entertainment ultrasound clinics"

CBUT, Tuesday, June 12, 2012 18:03 By C8C News Vancouver

S3

CBCV, Wednesday, June 13, 2012 06:43 By CBC On the Island

S3

From:

Stewart, Michelle GCPE:EX

Sent:

Wednesday, June 13, 2012 9:04 PM

To:

Jabs, Ryan GCPE:EX; May, Stephen GCPE:EX; Anderson, Kristy GCPE:EX; MacDougall,

Cindy GCPE:EX

Subject:

Fw: Briefing request for Minister - "entertainment" ultrasound clinics

Fyi

From: Manning, John HLTH:EX

Sent: Wednesday, June 13, 2012 09:03 PM

To: Casanova, Tamara HLTH:EX

Cc: Maksymetz, Richard HLTH:EX; Miniaci, Mario HLTH:EX; Jukes, Shaina HLTH:EX; Stewart, Michelle GCPE:EX;

Whitmarsh, Graham HLTH:EX

Subject: Briefing request for Minister - "entertainment" ultrasound clinics

Hi Tamara,

Please have a briefing set up for the Minister, as per information below. This should be a priority.

Thanks,

John

CBUT (CBC-TV Vancouver)
CBC News Vancouver

John Manning | Executive Assistant Office of the Honourable Michael de Jong, QC Minister of Health Province of British Columbia

S17

F: 250.356.9587

Campbell, Corrie L HLTH:EX

From:

Stewart, Michelle GCPE:EX

Sent:

Wednesday, June 13, 2012 8:23 PM

To:

Davidson, Heather (ADM) HLTH:EX; Whitmarsh, Graham HLTH:EX; Beckett, Daryl K

HLTH:EX; Campbell, Corrie L HLTH:EX

Cc:

Jabs, Ryan GCPE:EX; May, Stephen GCPE:EX

Subject:

Re: CBUT: De Jong troubled by ultrasound clinic practice

the state of the s

S13

From: Stewart, Michelle GCPE:EX

Sent: Wednesday, June 13, 2012 08:19 PM

To: Davidson, Heather (ADM) HLTH:EX; Whitmarsh, Graham HLTH:EX; Beckett, Daryl K HLTH:EX; Campbell, Corrie L

HLTH:EX

Cc: Jabs, Ryan GCPE:EX; May, Stephen GCPE:EX

Subject: Fw: CBUT: De Jong troubled by ultrasound clinic practice

Transcript below

From: tno@gov.bc.ca [mailto:tno@gov.bc.ca] Sent: Wednesday, June 13, 2012 08:13 PM

Subject: CBUT: De Jong troubled by ultrasound clinic practice

CBUT (CBC-TV Vancouver) CBC News Vancouver 13-Jun-2012 18:10

<u>TNO...</u>

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Campbell, Corrie L HLTH:EX

From:

Jabs, Ryan GCPE:EX

Sent:

Monday, May 14, 2012 4:15 PM

To:

Beckett, Daryl K HLTH:EX; Campbell, Corrie L HLTH:EX; Crickmore, Jane HLTH:EX

Cc:

Stewart, Michelle GCPE:EX; May, Stephen GCPE:EX

Subject:

RE: B.C. Ministry of Health - Private Ultrasound Clinics and

sex-selective abortions

Okay, Thanks,

Ryan Jabs Manager, Media Relations and Issues Management Ministry of Health Communications Government Communications and Public Engagement (250) 952-3387 S17

Cell:

Rvan.Jabs@gov.bc.ca

From: Beckett, Daryl K HLTH: EX Sent: Monday, May 14, 2012 4:03 PM

To: Jabs, Ryan GCPE:EX; Campbell, Corrie L HLTH:EX; Crickmore, Jane HLTH:EX

Cc: Stewart, Michelle GCPE:EX; May, Stephen GCPE:EX

Subject: RE: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

BC does not have a licensing regime. However, the College of Physicians and Surgeons BC prohibits its members from utilizing or practising in a private diagnostic ultrasound clinic unless the clinic is accredited by College's Diagnostic Accreditation Program.

Daryl K. Beckett, JD | Director, Professional Regulation | BC Ministry of Health | 250-952-2303 | Professional Regulation Home

From: Jabs, Ryan GCPE:EX

Sent: Monday, May 14, 2012 3:39 PM

To: Campbell, Corrie L HLTH:EX; Beckett, Daryl K HLTH:EX; Crickmore, Jane HLTH:EX

Cc: Stewart, Michelle GCPE:EX; May, Stephen GCPE:EX

Subject: FW: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

Hi all,

Correct to respond that any ultrasound clinic that is operated by a physician or provides health care services must be licensed by the College of Physicians and Surgeons?

Thanks,

Ryan Jabs Manager, Media Relations and Issues Management Ministry of Health Communications Government Communications and Public Engagement (250) 952-3387 Cell: S17

From: ANNIE BURNS-PIEPER [mailto:ANNIE.BURNS-PIEPER@CBC.CA]

Sent: Monday, May 14, 2012 01:41 PM

Ryan Jabs@gov.bc.ca

HTH-2012-00136 Page 35

To: May, Stephen GCPE:EX

Subject: Re: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

Hi Stephen, Just to follow up on this email. We talked to a few ultrasound clinics which you say are not regulated by the Ministry of Health in BC, which said that they follow some sort of protocol for private clinics. Do you know what they might be referring to? Who might have some jurisdiction over them?

Thanks. Annie

annie.burns-pieper@cbc.ca phone: 416-205-3156 mobile: 416-570-7615 fax: 416-205-6668 205 Wellington Street West Toronto, Ontario M5V 3G7

>>> "May, Stephen GCPE:EX" <Stephen.May@gov.bc.ca> 3/23/2012 5:22 PM >>> Annie,

Good talking to you this afternoon. Here is the background information you were looking for on Private Ultrasound Clinics and sex-selective abortions.

Oversight of Private Ultrasound Clinics:

The Ministry of Health in B.C. does not regulate or pay for non-medical ultrasound services. We understand, however, that Health Canada, Society of Obstetricians and Gynaecologists of Canada, most professional medical bodies, including the College of Physicians and Surgeons of B.C., do not support the use of diagnostic ultrasound for non-medical purposes such as to solely determine the gender of the foetus. Oversight of private clinics is the responsibility of the College of Physicians and Surgeons of BC.

Sex-selective abortions:

Every woman and parent is entitled to information about the health and well being of their foetus including the sex of the foetus if they choose. This is consistent with what the College of Physicians and Surgeons of B.C. policy (https://www.cpsbc.ca/files/u6/Disclosure-of-Fetal-Sex.pdf) which says that pregnant patients have a right to full disclosure of their personal health information, including disclosure of foetal sex upon request.

The timing of obstetrical ultrasounds are clinical decisions between the patient and the physician - not Ministry decisions - however the Ministry, as a matter of principle, does not support the use of elective obstetrical ultrasound for the sole purpose of gender determination of the foetus which results in a pregnancy termination. This is consistent with the Society of Obstetricians and Gynaecologists of Canada.

That being said, Government must ensure that abortion services are available to women in B.C. We recognize that most Canadians are against the practice of sexselection abortion, but women are not required to give their reason for terminating a pregnancy, and it would infringe upon their rights to require them to disclose any information around their decision. HTH-2012-00136

7

36 of 75

Stephen May | Government Communications and Public Engagement

Ministry of Health

P: 250-952-3401

S17

f: 250-952-1883

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Campbell, Corrie L HLTH:EX

From:

May, Stephen GCPE:EX

Sent:

Thursday, April 19, 2012 10:55 AM

To:

Campbell, Corrie L HLTH.EX

Cc: Subject: Massey, Christine HLTH:EX; Wagner, Elisabeth A HLTH:EX RE: IN Ad for gender determination services_Apr 18_DRAFT.docx



IN Ad for gender determination...

Thanks. Final attached

Stephen May | Government Communications and Public Engagement

Ministry of Health P: 250-952-3401

C: S17

F: 250-952-1883

Join the Healthy Families BC community...





From: Campbell, Corrie L HLTH:EX

Sent: Thursday, April 19, 2012 10:49 AM

To: May, Stephen GCPE:EX

Cc: Massey, Christine HLTH:EX; Wagner, Elisabeth A HLTH:EX

Subject: RE: IN_Ad for gender determination services_Apr 18_DRAFT.docx

<< File: IN Ad for gender determination services_Apr 19_FINAL.docx >> see edits

From: May, Stephen GCPE:EX

Sent: Thursday, April 19, 2012 9:47 AM

To: Campbell, Corrie L HLTH:EX

Cc: Massey, Christine HLTH:EX; Wagner, Elisabeth A HLTH:EX

Subject: RE: IN_Ad for gender determination services_Apr 18 DRAFT.docx

Thanks Corrie - I've slightly modified the messaging (so it's more "speak-able" for the Minister). And the Minister has requested changes to the other messaging - so I've included that as well. Let me know if there's something horribly wrong in the wording.

<< File: IN Ad for gender determination services_Apr 19_FINAL.docx >>

Stephen May | Government Communications and Public Engagement

Ministry of Health P: 250-952-3401

S17 C:

F: 250-952-1883

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HTH-2012-00136

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From: Campbell, Corrie L HLTH:EX Sent: Thursday, April 19, 2012 9:30 AM

To: May, Stephen GCPE:EX

Cc: Massey, Christine HLTH:EX; Wagner, Elisabeth A HLTH:EX

Subject: IN_Ad for gender determination services_Apr 18_DRAFT.docx

<< File: IN Ad for gender determination services_Apr 18_DRAFT.docx >>

See updated info note. Can we get final please?

Campbell, Corrie L HLTH:EX

From:

Massey, Christine HLTH: EX

Sent:

Tuesday, April 17, 2012 2:10 PM

To:

Wagner, Elisabeth A HLTH:EX; Campbell, Corrie L HLTH:EX; Crickmore, Jane HLTH:EX

Subject:

FW: CT V story on Indo-Canadian Voice advert

Attachments:

IN Gender Ultrasounds and Private Tests abortion_UPDATE_Feb_7_12_FINAL.docx

fyi

From: Jabs, Ryan GCPE:EX

Sent: Tuesday, April 17, 2012 2:07 PM

To: Maksymetz, Richard HLTH:EX; Manning, John HLTH:EX; Miniaci, Mario HLTH:EX; Wright, Jenn HLTH:EX

Cc: Gleeson, Kelly T GCPE:EX; Massey, Christine HLTH:EX; Whitmarsh, Graham HLTH:EX; Beckett, Daryl K HLTH:EX; Anderson, Kristy GCPE:EX; Belanger, Matthew GCPE:EX; MacDougall, Cindy GCPE:EX; May, Stephen GCPE:EX; Porter,

Rodney GCPE:EX; Stewart, Michelle GCPE:EX

Subject: CT V story on Indo-Canadian Voice advert

FYI on the story at the link below... Our IN on the general topic is attached.

Ryan Jabs

Manager, Media Relations and Issues Management

Ministry of Health Communications

Government Communications and Public Engagement

(250) 952-3387 Cell: \$17

Ryan.Jabs@gov.bc.ca

From: Anderson, Kristy GCPE:EX

Sent: Tuesday, April 17, 2012 2:02 PM

To: Jabs, Ryan GCPE:EX

Cc: May, Stephen GCPE:EX; MacDougall, Cindy GCPE:EX

Subject: Create the family you want.....

FYI

http://www.ctvbc.ctv.ca/servlet/an/local/CTVNews/20120417/bc_gender_selective_services_newspaper_120417/2 0120417?hub=BritishColumbiaHome

Copyright

Kristy Anderson | Health Communications
Government Communications & Public Engagement
p: 952-3552 | c | S17 | f: 952-1883 | kristy.anderson@gov.bc.ca

Webb, Jennifer HLTH:EX

From:

Sent:

Beckett, Daryl K HLTH:EX Tuesday, April 17, 2012 10:25 AM Beckett, Daryl K HLTH:EX

To:

Subject:

By Derek Abma

Findings raise fears of sex selection via abortion

--- FETAL GENDER SCREENING

top

Findings raise fears of sex selection via abortion National Post Tuesday, April 17, 2012 Page A04

S3

Sex selection under spotlight The Province Tuesday, April 17, 2012 Page A18

S3

Where have the girls gone? Globe and Mail Tuesday, April 17, 2012

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Page LO5 By Carly Weeks

S3

	- FETAL GENDER SCREENING
top	
CHAN, Monday, April 16, 2012 18:33 By Global BC News Hour	
	\$3
top	- FETAL GENDER SCREENING
Indian immigrants' 3rd child more likely t CBC Online Monday, April 16, 2012	o be a boy
8y CBC Online	

S3

Campbell, Corrie L HLTH:EX

From:

Beckett, Daryl K HLTH:EX

Sent:

Wednesday, April 11, 2012 8:52 AM

To:

Massey, Christine HLTH:EX; Crickmore, Jane HLTH:EX

Cc:

Campbell, Corrie L HLTH:EX

Subject:

RE: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

S13

From: Massey, Christine HLTH:EX Sent: Tuesday, April 10, 2012 4:41 PM

To: Beckett, Daryl K HLTH:EX; Crickmore, Jane HLTH:EX

Cc: Campbell, Corrie L HLTH:EX

Subject: RE: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

S13

From: Beckett, Daryl K HLTH:EX Sent: Tuesday, April 10, 2012 3:58 PM

To: Massey, Christine HLTH:EX; Crickmore, Jane HLTH:EX

Cc: Campbell, Corrie L HLTH:EX

Subject: RE: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

S13

From: Massey, Christine HLTH:EX Sent: Tuesday, April 10, 2012 1:15 PM

To: Beckett, Daryl K HLTH:EX; Crickmore, Jane HLTH:EX

Cc: Campbell, Corrie L HLTH:EX

Subject: FW: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

Jane - Background for our meeting later this week.

1

From: May, Stephen GCPE:EX

Sent: Tuesday, April 10, 2012 11:28 AM

To: Beckett, Daryl K HLTH:EX; Massey, Christine HLTH:EX Cc: Jabs, Ryan GCPE:EX; Campbell, Corrie L HLTH:EX

Subject: RE: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

S13

Stephen May | Government Communications and Public Engagement Ministry of Health

P: 250-952-3401

S17

F: 250-952-1883

Join the Healthy Families BC community...



From: Beckett, Daryl K HLTH:EX

Sent: Tuesday, April 10, 2012 11:09 AM

To: May, Stephen GCPE:EX; Massey, Christine HLTH:EX Cc: Jabs, Ryan GCPE:EX; Campbell, Corrie L HLTH:EX

Subject: RE: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

S13

Daryl K. Beckett, JD | Director, Professional Regulation | BC Ministry of Health | 250-952-2303 | Professional Regulation Home

From: May, Stephen GCPE:EX

Sent: Tuesday, April 10, 2012 10:30 AM

To: Massey, Christine HLTH:EX

Cc: Jabs, Ryan GCPE:EX; Beckett, Daryl K HLTH:EX

Subject: FW: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

Another request on this – Ontario media is doing a fair bit of stuff on this.

S13

)

Stephen May | Government Communications and Public Engagement

Ministry of Health

P: 250-952-3401

\$17

F: 250-952-1883

Join the Healthy Families BC community...







From: ANNIE BURNS-PIEPER [mailto:ANNIE.BURNS-PIEPER@CBC.CA]

Sent: Tuesday, April 10, 2012 10:14 AM

To: May, Stephen GCPE:EX

Subject: RE: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

Thanks for this. So generally are the people who perform ultrasounds regulated in BC? I learned they are not in Ontario.

Thanks, Annie

annie.burns-pieper@cbc.ca

phone: 416-205-3156 mobile: 416-570-7615 fax: 416-205-6668

205 Wellington Street West

Toronto, Ontario M5V 3G7

>>> "May, Stephen GCPE:EX" < Stephen. May@gov.bc.ca > 3/27/2012 3:26 PM >>> Hi Annie,

8.C. operates a little differently than Ontario when it comes to this.

We don't have legislation like Ontario's IHF Act. Private diagnostic clinics are overseen through the College's accreditation process (the Diagnostic Accreditation Program or DAP) if the clinic wants College members (accredited and licensed physicians) to work there.

A full list of accredited Diagnostic facilities is available here - http://www.dap.org/Default.aspx?p=90 - there are also lists for accredited laboratory medicine, neurodiagnostics, polysomnography and for pulmonary function. You can access those lists through http://www.dap.org/Default.aspx?p=21

The Mandate for the Diagnostic Accreditation Program is here - http://www.dap.org/Default.aspx?p=14 – it was established through the Health Professions Act.

3

Stephen May | Government Communications and Public Engagement

Ministry of Health

P: 250-952-3401

S17

F: 250-952-1883

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HTH-2012-00136 Page 48

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From: ANNIE BURNS-PIEPER [mailto:ANNIE.BURNS-PIEPER@CBC.CA]

Sent: Tuesday, March 27, 2012 11:19 AM

To: May, Stephen GCPE:EX

Subject: Re: B.C. Ministry of Health - Private Ultrasound Clinics and sex-selective abortions

Hi, Thanks a lot for this. Just to clarify, private ultrasound clinics are not overseen by the ministry of health but rather the college of physicians and surgeons? In Ontario I believe this operates somewhat differently...the Ontario Ministry of health was able to send me a list of the Independent Health Facilities that come under their jurisdiction. Just wanted to confirm that this works differently in BC. Would the college then be able to provide me with a list of IHF's in the province?

Thanks, Annie

annie.burns-pieper@cbc.ca ohone: 416-205-3156 mobile: 416-570-7615 fax: 416-205-6668 205 Wellington Street West Toronto, Ontario M5V 3G7

>>> "May, Stephen GCPE:EX" <Stephen.May@gov.bc.ca> 3/23/2012 5:22 PM >>> Annie.

Good talking to you this afternoon. Here is the background information you were looking for on Private Ultrasound Clinics and sex-selective abortions.

Oversight of Private Ultrasound Clinics:

The Ministry of Health in B.C. does not regulate or pay for non-medical ultrasound services. We understand, however, that Health Canada, Society of Obstetricians and Gynaecologists of Canada, most professional medical bodies, including the College of Physicians and Surgeons of B.C., do not support the use of diagnostic ultrasound for non-medical purposes such as to solely determine the gender of the foetus. Oversight of private clinics is the responsibility of the College of Physicians and Surgeons of BC.

Sex-selective abortions:

Every woman and parent is entitled to information about the health and well being of their foetus including the sex of the foetus if they choose. This is consistent with what the College of Physicians and Surgeons of B.C. policy (https://www.cpsbc.ca/files/u6/Disclosure-of-Fetal-Sex.pdf) which says that pregnant patients have a right to full disclosure of their personal health information, including disclosure of foetal sex upon request.

The timing of obstetrical ultrasounds are clinical decisions between the patient and the physician - not Ministry decisions - however the Ministry, as a matter of principle, does not support the use of elective obstetrical ultrasound for the sole purpose of gender determination of the foetus which results in a pregnancy

4

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termination. This is consistent with the Society of Obstetricians and Gynaecologists of Canada.

That being said, Government must ensure that abortion services are available to women in B.C. We recognize that most Canadians are against the practice of sex-selection abortion, but women are not required to give their reason for terminating a pregnancy, and it would infringe upon their rights to require them to disclose any information around their decision.

Stephen May | Government Communications and Public Engagement Ministry of Health P: 250-952-3401 C: S17

F: 250-952-1883

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Pages 65 through 69 redacted for the following reasons:

S13



MINISTRY OF HEALTH

POLICY COMMUNIQUÉ



Health Authorities' CEOs

TRANSMITTAL DATE:

June 8, 2012

COMMUNIQUÉ 2012-08 NUMBER:

CLIFF NUMBER: 929416

SUBJECT: Fetal Sex Determination by Ultrasound

DETAILS: N/A

EFFECTIVE DATE: June 30, 2012

MINISTRY CONTACT: Executive Director, Hospital and Provincial Services Branch

Graham Whitmarsh Deputy Minister Ministry of Health

MINISTRY OF HEALTH POLICY

FETAL SEX DETERMINATION BY ULTRASOUND

POLICY OBJECTIVE

The objective of this policy is to achieve:

- consistency in approach across health authorities to fetal sex determination by ultrasound and disclosure of fetal sex information to patients;
- alignment with the College of Physicians and Surgeons of British Columbia's Guideline on Disclosure of Fetal Sex; and,
- alignment with Canadian clinical practice guidelines.

SCOPE

This policy applies to obstetrical ultrasound services provided by the regional health authorities and the Provincial Health Services Authority.

POLICY

1. In the medical imaging department:

- a. At the time of a routine full fetal anatomical assessment, the patient will be asked if she wishes to know the sex of the fetus and the patient's decision will be documented by the ultrasound technologist in a consistent manner.
- b. The ultrasound technologist will explain that she is not to release any information about the examination directly to the patient, but that findings will be reported and may be obtained from the referring physician.
- c. The ultrasound technologist will explain that there is a small chance of error in ultrasound sex determination.
- d. A reasonable attempt will be made by the ultrasound technologist to assess fetal genitalia, but exam time will not be extended for the sole purpose of determining fetal sex.
- e. The sex of the fetus will be recorded as "male", "female" or "not determined" in the ultrasound technologist's notes.
- f. Repeat exams will not be scheduled for the sole purpose of determining fetal sex.

2. In the radiologist's report:

- a. The report should document whether the patient wishes to know the sex of the fetus.
- b. The report should identify the sex of the fetus, if determined during the exam.

3. In the physician's office:

- a. The patient may request fetal sex information from her referring physician.
- b. The referring physician should provide this information to the patient upon request and without delay (i.e., do not withhold this information until later in the pregnancy).

REVIEW

This policy is subject to review by December 31, 2014.

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MINISTRY OF HEALTH DECISION BRIEFING NOTE

Cliff #929454 (xRef: 929416 and 929435)

PREPARED FOR: Graham Whitmarsh, Deputy Minister of Health - FOR DECISION

TITLE: Provincial policy on Fetal Sex Determination by Ultrasound

PURPOSE: To obtain approval for the Policy Communiqué, Fetal Sex Determination by

Ultrasound

BACKGROUND:

Health authorities currently have policies on fetal sex determination by ultrasound that are inconsistent on two fronts:

- a) whether or not to assess fetal genitalia as part of a routine full anatomical assessment; and,
- b) if, when and how fetal sex information should be disclosed to patients.

In January 2012, the College of Physicians and Surgeons of British Columbia (CPSBC) released a new guideline on disclosure of fetal sex, which states:

Pregnant patients have a right to full disclosure of their personal health information, including disclosure of fetal sex upon request. Accordingly, if information regarding fetal sex is available from the medically indicated diagnostic procedures performed, it should be disclosed to the pregnant patient upon request.

The objective of the provincial policy is to achieve:

- a) consistency in approach across health authorities to fetal sex determination by ultrasound and disclosure of fetal sex information to patients;
- b) alignment with the new CPSBC guideline on disclosure of fetal sex; and,
- c) alignment with Canadian clinical practice guidelines.

The policy was developed in collaboration with physicians, health authorities, the Medical Imaging Advisory Committee (MIAC), and Perinatal Services BC.

DISCUSSION:

The attached Policy Communiqué has been prepared to inform health authorities of the new policy expectations. The policy is as follows:

1. In the medical imaging department:

- a. At the time of a routine full fetal anatomical assessment, the patient will be asked if she wishes to know the sex of the fetus and the patient's decision will be documented by the ultrasound technologist in a consistent manner.
- b. The ultrasound technologist will explain that she is not to release any information about the examination directly to the patient, but that findings will be reported and may be obtained from the referring physician.
- c. The ultrasound technologist will explain that there is a small chance of error in ultrasound sex determination.
- d. A reasonable attempt will be made by the ultrasound technologist to assess fetal genitalia, but exam time will not be extended for the sole purpose of determining fetal sex.

- e. 'The sex of the fetus will be recorded as "male", "female" or "not determined" in the ultrasound technologist's notes.
- f. Repeat exams will not be scheduled for the sole purpose of determining fetal sex.

2. In the radiologist's report:

- a. The report should document whether the patient wishes to know the sex of the fetus.
- b. The report should identify the sex of the fetus, if determined during the exam.

3. In the physician's office:

- a. The patient may request fetal sex information from her referring physician.
- b. The referring physician should provide this information to the patient upon.

The policy is to be fully implemented by the health authorities by June 30, 2012, and applied to all routine full fetal anatomical assessment by ultrasound occurring on or after that date.

FINANCIAL IMPLICATIONS:

n/a

PRIOR CONSULTATION

On February 10, 2012, Health Operations Committee (HOC) approved a recommendation to develop a consistent provincial approach to fetal sex determination by ultrasound and disclosure of fetal sex information to patients.

On April 19, 2012, MIAC recommended a provincial approach that was submitted to HOC for approval. The following experts were consulted and involved in the MIAC deliberations:

- Dr. Ken Seethram, ObGyn and Co-Chair, Specialist Services Committee
- Alice Hawkins, Clinical Ethicist, University of British Columbia and Providence Health Care
- Dr. Gerry Marquette, Medical Director, Perinatology, Perinatal Services BC
- Dr. Ken Lim, Medical Director, Diagnostic/Ambulatory Program, BC Children's and Women's Hospital
- Dr. Alain Gagnon, Sr. Medical Director, BC Children's and Women's Hospital

On May 11, 2012, HOC approved the approach recommended by MIAC.

Approved/Not Approved	Date Signed
Graham Whitmarsh	
Deputy Minister	

Program ADM/Division: Barbara Korabek, Health Authorities Division

Telephone: 250 952-1049

Program Contact (for content): Effie Henry, Executive Director, Hospital and Provincial Services

Date: May 24, 2012
File Name with Path: Z:\HAD General\Briefing Notes\2012\Communiques\Communique 2012-08 Fetal

Sex Determination by Ultrasound 929454 Fetal Sex Determination by Ultrasound BN 2012-08.docx

Cliff#929416

Fetal Sex Determination by Ultrasound Policy Communique transmission

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929435

All Health Authority Chief Executive Officers:

Attached for your action is Policy Communiqué 2012-08, entitled, *Fetal Sex Determination by Ultrasound*. This policy was developed in collaboration with physicians, health authorities, the Medical Imaging Advisory Committee, Perinatal Services British Columbia, and the Health Operations Committee.

The objective of this policy is to achieve:

- consistency in approach across health authorities to fetal sex determination by ultrasound and disclosure of fetal sex information to patients;
- alignment with the College of Physicians and Surgeons of BC's Guideline on Disclosure of Fetal Sex; and,
- alignment with Canadian clinical practice guidelines.

The effective date of this policy is June 30, 2012. Please ensure that your medical imaging departments are in compliance with this policy by that date.

If you have any questions, please contact Effie Henry, Executive Director, Hospital and Provincial Services, by telephone at: 250 952-1514, or by email at: Effie.Henry@gov.bc.ca.

Thank you for your ongoing work to improve health care services to British Columbians.

Sincerely,

Graham Whitmarsh Deputy Minister

Attachment

Campbell, Corrie L HLTH: EX

May, Stephen GCPE:EX From:

Wednesday, April 18, 2012 3:37 PM Sent:

Campbell, Corrie L HLTH:EX To: Jabs, Ryan GCPE:EX Cc:

IN_Ad for gender determination services_Apr 18_DRAFT Subject: IN Ad for gender determination services_Apr 18_DRAFT.docx Attachments:

HAD has asked me to run this note past you for review

S13

S13

Can you confirm? Thanks.

Link to the Act is here: http://laws-lois.justice.gc.ca/eng/acts/A-13.4/

Stephen May | Government Communications and Public Engagement

Ministry of Health

P: 250-952-3401

C: **S17**

F: 250-952-1883

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Pages 77 through 90 redacted for the following reasons:

S13

"KEEPSAKE" OR "ENTERTAINMENT" PRENATAL ULTRASOUNDS

REVIEW OF THE EVIDENCE

Submitted to:

Jane Crickmore

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March 16, 2010

Vicki Foerster, MD MSc

EXECUTIVE SUMMARY

Background: One or two ultrasound (US) examinations in an uncomplicated pregnancy are recommended by clinical practice guidelines in British Columbia and Canada, respectively. Some women are opting for additional private-pay (\$100 to \$300) "keepsake" US scans in the second or third trimesters through "store-front" operators using advanced 3-dimensional (3D) / 4D technology. Objectives are to bond with the unborn baby and share the experience with others. On the basis of safety, many professional bodies and regulators have expressed concern about the use of US for entertainment purposes with no medical indication.

Objective: To review the available literature on keepsake prenatal US, with a focus on safety.

Methods: A literature search (2005-2010) was conducted in February 2010 and included PubMed, The Cochrane Library, and the UK Centre for Reviews and Dissemination databases. Additional references were identified through an Internet search of relevant websites.

Results: Three recent systematic reviews (SRs) were located reporting on at least 40 studies that examined outcomes following prenatal US. The authors' conclusions were consistent, i.e., overall there has been essentially no measurable impact of US on maternal or perinatal outcomes; childhood growth, neurological development, or school performance; childhood malignancy; and intellectual performance and mental diseases after childhood. However, important themes emerged:

- Research was generally conducted using US technology with lower acoustic potency than what is
 available today; feral exposure using current equipment can be almost eight times greater than
 that used previously and the effects of this increased intensity are unknown.
- The study milieu were medically necessary services provided by licensed sonographers or physicians and did not explore US effects as provided by less skilled providers in commercial venues where quality assurance may not be in-built.
- Given the unknowns with keepsake US and the potential jeopardy to fetal health, there is little support for US examinations that are not deemed medically necessary.

Interpretation: Keepsake US is filling a niche for pregnant women in Canada who are willing to pay privately to view their unborn baby in a relaxed environment, and to share this with friends and family. However, professional organizations and regulators have unanimously condemned keepsake US as a safety hazard for unborn babies, adhering to the principles that "absence of evidence of harm is not evidence that no harm is possible"; testing should follow the ALARA principle (as low as reasonably achievable) to ensure good fetal outcomes; and there is no justification for exposing a fetus to a potentially hazardous technology for "entertainment" purposes. Beyond safety there are other health system concerns to consider with respect to keepsake US:

- Women could be falsely reassured and neglect to seek suitable prenatal care.
- Staff at keepsake US facilities may not be trained to interpret images accurately meaning that
 false negatives and false positives are possible.
- The current shortage of skilled US technicians could be exacerbated by commercial uptake.

Keepsake US is currently outside regulated practice, although at least four states in the United States (USA) have limited its use via legislation.

ACRONYMS AND ABBREVIATIONS

ACOG American College of Obstetricians and Gynecologists

AIUM American Institute of Ultrasound in Medicine

ALARA "As low as reasonably achievable"

ARDMS American Registry of Diagnostic Medical Sonographers

BMUS British Medical Ultrasound Society
CAR Canadian Association of Radiologists

CD compact disc

CPSBC College of Physicians & Surgeons of BC
CPSO College of Physicians & Surgeons of Ontario

CSDMS Canadian Society of Diagnostic Medical Sonographers ECMUS European Committee of Medical Ultrasound Safety

FDA United States Food and Drug Administration

SDMS Society of Diagnostic Medical Sonography [United States]
SOGC Society of Obstetricians and Gynecologists of Canada

SR systematic review UK United Kingdom

US ultrasound

USA United States of America
WHO World Health Organization

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THE ISSUE

Guidelines in Canada recommend that two ultrasound (US) examinations be performed in an uncomplicated pregnancy, one in each of the first two trimesters (Abuhamad, 2008; You et al., 2010). Currently in BC, guidelines recommend a detailed US at 18 to 20 weeks for uncomplicated pregnancies in women under age 35 (plus a first trimester US for women over age 35) (MOH, 2005; PHSA, 2010). However, some expectant women / couples are opting for an additional private-pay option, i.e., fetal US imaging conducted for "keepsake" images. These keepsake or "enterrainment" or "boutique" US (henceforth called keepsake US) are performed in non-medical settings (in Canada), ideally in the second and third trimesters (26 to 32 weeks gestation), without required regulation of facilities, staff, or services. They are specifically promoted as being for non-diagnostic purposes. Many professional associations, such as the Society of Obstetricians and Gynecologists of Canada (SOGC), Canadian Association of Radiologists (CAR), American College of Obstetricians and Gynecologists (ACOG), and the American Institute of Ultrasound in Medicine (AIUM), have expressed concern, basing their reservations primarily on issues of safety for mother and fetus.

REPORT PURPOSE

To review the literature available on keepsake US with a focus on issues related to safety, as well as other health system concerns.

BACKGROUND

US technology

First introduced about 40 years ago, prenatal US creates images of a fetus in the uterus using short bursts of sound vibrations that travel as waves through the body in a series of focused beams. US beams are a form of mechanical energy (Deutchman, 2005). Echoes from the beams are converted into real-time images that show the movement, surface features, internal organs and, using Doppler, even the blood flow of the fetus. The images are viewed on a monitor and can be stored on compact discs (CDs). US transducers are applied trans-abdominally or trans-vaginally. Important applications are determination of fetal age, multiple pregnancies, and certain fetal anomalies. (Health Canada, 2003; Government of Saskatchewan, 2007).

3D / 4D US

The current standard of care is 2-dimensional (2D) US with an image made up of a series of thin slices, viewing one slice at a time. Introduced in the 1980s but seeing increasing uptake, 3D US exams capture a volume of echoes that can be stored digitally and processed to produce life-like images of a fetus. With 4D these images can be seen to move in real-time, similar to a video (Topfer

A recent analysis in Ontario examined the use of prenatal US over the decade from 1996 to 2006 and showed a 55% increase in utilization for no apparent clinical reason. A third of women underwent three or more US and nearly one in five underwent four or more. The authors pondered the influence of non-clinical factors such as "the practice of defensive medicine, the desire to reassure a patient that her pregnancy is progressing normally, patient demand, and even the 'entertainment' value of seeing one's fews." (You et al., 2010)

& Hailey, 2002; Yagel et al., 2009). 3D/4D US therefore has an ability to evaluate anatomical structures and pathological findings with multi-planar and surface-rendered images (Lapaire et al., 2007).

One area where 3D/4D has received a great deal of attention is in the scanning of the fetal face (including facial expressions). The face was the first image to be successfully rendered and remains the most studied and documented fetal feature (Timor-Tritsch & Monteagudo, 2007; Yagel et al., 2009). Imaging of the face is employed not only for anatomical assessment (e.g., detection of cleft lip/palate) but also for the effect on parents and caregivers (Topfer & Hailey, 2002).

However, despite its increased technical sophistication (and cost), it is not clear that 3D/4D prenatal US is superior to 2D scanning with respect to accuracy (Topfer & Hailey, 2002; Lapaire et al., 2007; Abuhamad, 2008; Yagel et al., 2009). The most common technology appears to be General Electric's Voluson 730[®] which was also the first to market and is capable of 2D scanning as well (Topfer & Hailey, 2002).

Some believe that 3D/4D can improve parent-child bonding due to the lifelike appearance of the face, although this has not been consistently proven to be true. For example, a study in Switzerland randomized 60 women in their second or third trimesters to either 2D followed by 3D scanning or the reverse (Lapaire et al., 2007). Although the women were more able to recognize the fetal face with 3D US, and more likely to share their photographs with others, there were no measurable effects on maternal-fetal bonding or on satisfaction with the procedure. The authors concluded that, due to its higher cost, 3D US should only be offered when medically indicated reasons exist. (It should be noted that patient numbers were small and the technology is likely more sophisticated now as the study was performed in 2000-2002.)

Keepsake US

Over the past 10 years, commercial interests in Canada, the USA, and Europe (at least) have established 3D/4D prenatal US for patients to access without a physician's referral for the sole purpose of viewing and then making keepsake pictures and videos of the fetus. The centers are often located in malls and have names such as Little Sprout Imaging, Baby Insight, Bébé's Début, Peekaboobaby, Fetal Fotos, and 3DBabyVu (Zamora, 2004).

Some see this as a way to demystify medical technology and to obtain reassurance that physician care does not provide (Watts, 2007). In fact, it has been suggested that the popularity of keepsake US may represent a failure on the part of the traditional medical system, with patients craving a more open, friendly, and informative experience and that this should be a "wake up call" for physicians with respect to the services they provide (Deutchman, 2005; Simonsen et al., 2008).

Keepsake US has tremendous appeal for some pregnant women / couples. In the words of one commercial keepsake US business:

'There is no greater miracle than witnessing the beginning of a new life and bringing you and your haby even closer during your pregnancy...[W]e bring families together to witness their own special and life-changing miracles...to allow you and your family to experience the sight, sounds, and movements of your baby as he or she kicks, smiles, turns, yawns, and perhaps even blows a kiss to

you!!! What a moment to remember and revisit as you review your pictures and video DVD for years to come. This experience is dedicated solely for the purpose of promoting bonding between you, your family and your baby. This is an incredible opportunity to see your baby in real life 3D images with keepsake photos and videos we guarantee you will cherish for a lifetime!" (3D Miracles, 2009)

In the USA, keepsake US is offered in some cases through physicians' offices, although many professional groups and regulatory authorities actively discourage the practice (more on this later). One cited example is a maternal-fetal medicine specialist in Colorado Springs whose office provides keepsake imaging in conjunction with, or independent of, a diagnostic exam. This physician has noted that after the experience many women vow to take better care of themselves when it comes to smoking habits and other risky behaviors that may affect their babies (Zamora, 2004).

Businesses offering keepsake US have presumably set up the service through the discovery of loopholes that mean regulation of facilities and staff is not required. They are careful to explain, at least on their websites, that keepsake US is purely for entertainment purposes, not meant to replace medically indicated US or prenatal care, and that clients should ensure they have had their physician-recommended US before attending, e.g., Sneak A Peek in Kelowna (Sneak A Peek, 2010), although this is not universally true, e.g., UC Baby in Vancouver and Surrey (UC baby, 2007).

Additional commercial innovations are also available, such as software that allows production from the fetal 3D ultrasound images of CDs, DVDs, VHS videotapes, and PowerPoint slide shows. The equipment includes a viewing station where pregnant women can select the images they want, make multiple copies, choose scrapbook pages with flowers and other designs, and set videos and DVDs to music (Voelker, 2005).

Availability of keepsake US in British Columbia

An internet search revealed that at least five such facilities are operating in BC in Coquitlam, Kelowna, Langley, Surrey, Vancouver, and Victoria. Services include "real time" US viewing, audio of the fetal heartbeat, gender determination (after 20 weeks gestation), and CDs/DVDs of the US images and session. Costs range from about \$100 to \$300, depending on services provided.

RESEARCH QUESTIONS

- 1. What is the evidence telated to the safety of prenatal US?
- 2. Are there specific safety concerns with keepsake prenatal US?
- 3. Beyond safery issues, are there other reasons to be concerned about keepsake prenatal US?

LITERATURE SEARCH METHODS

A literature search was conducted February 15, 2010, that included PubMed, The Cochrane Library, and the United Kingdom (UK) Centre for Reviews and Dissemination databases (HTA, DARE and NHS EED). Searches were limited to publications from 2005 to February 2010. Additional references were identified through a search of Google and relevant websites, e.g., Guidelines.gov,

the UK Health Evidence portal, Aetna's Clinical Policy Bulletins, the US Food and Drug Administration (FDA), Health Canada, CAR, SOGC, ACOG, and AIUM.

LITERATURE SEARCH RESULTS (SAFETY)

The literature search yielded 597 references of which 35 were selected for more detailed review. From this shortened list, 17 publications were obtained in full text. Additional references were obtained from the websites of relevant professional organizations and a focused Internet search.

Reviews of prenatal safety

Three recent systematic reviews (SRs) were located, one performed by an expert group from WHO (Torloni et al., 2009); a second from Washington University in Missouri (Houston et al., 2009); and a third focussed on the benefits and risks of 3D prenatal US performed by nursing professors in Florida and Kentucky (Wiseman & Kiehl, 2007). Also useful was a comprehensive review of the evolution of safety assurance in prenatal US (Miller, 2008).

- Torloni et al., 2009: On behalf of the WHO, a team of seven researchers from Brazil, Chile, Latvia, Switzerland, and the USA reviewed all the available research related to short- and long-term effects of exposure to US during any period of pregnancy for any number of times.
 Outcome measures of interest included:
 - o Adverse maternal outcomes, e.g., admissions, intrapartum, or postpartum complications.
 - O Adverse perinatal outcomes, e.g., low birth weight, preterm birth, low APGAR scores, need for resuscitation, seizures, congenital malformations, mortality.
 - O Abnormal childhood growth, neurological development, and school performance, e.g., dyslexia, speech development, behavioural scores, hearing and visual impairment, attention deficit, cognitive function, motor skills.
 - Non-right-handedness (lefthandedness or ambidexterity).
 - Childhood malignancy.
 - o Intellectual performance and mental diseases after childhood.

Via an extensive literature search that extended from 1950 to October 2007, as well as contact with experts, 6716 references were screened for relevance and 61 publications reporting on 41 separate studies were ultimately included. Most were deemed to be of regular or good methodological quality. The authors found no association between prenatal US and any of the outcomes listed above, except for a weak association with non-right-handedness in boys. However, the authors identified a number of limitations to their SR including lack of information about the intensity of US exposure in 90% of the studies as well as lack of information about how many scans per patient were performed in 70% of the studies (important if US exposure has a cumulative effect). A key limitation is the fact that most US exposure was before 1995 when the acoustic potency of the equipment was lower than it is today; fetal exposure using current equipment can be almost eight times greater than that used previously. It is therefore not possible to extrapolate previous results to the outcomes of today's technology.

- Houston et al., 2009: This review summarized 57 studies examining prenatal US safety:
 - o 27 non-randomized studies published from 1970 to 2008 (study years 1968-1996)
 - o 30 randomized studies published from 1984 to 2004 (study years 1979-1999)

A variety of outcomes were tested, in large part mirroring those chosen by Torloni et al. (2009). The authors concluded that the safety of obstetrical US is generally supported by the evidence when it is used as medically indicated, although they noted that the study milieu included medically necessary services provided by skilled and/or licensed sonographers or physicians. As was the case for Torloni et al., these authors expressed concerns about evolving US technology and the fact that reassuring results from early studies may not represent the outcomes from the use of today's machines with their higher output, particularly pulsed and Doppler wave scanning.

- Wiseman & Kiehl, 2007: Included were 11 studies on 3D fetal US published between 1993 and 2005. Only four of the earliest studies really focussed on safety (all in medical versus commercial settings); the remainder examined technical superiority of 3D versus 2D imaging. Three of the four studies reported no adverse safety outcomes although the fourth (from Australia) noted a higher incidence of fetal intrauterine growth retardation in infants that received five (versus one) US in utero. The review authors commented that few women are cognizant of any safety issues since US is approached by the medical community as a routine aspect of prenatal care. In contrast, caution is expressed by professional groups that recommend limiting prenatal US to medical necessary services. Also, direct-to-consumer advertising has introduced new challenges such as poor discussions of risks, bypassing of medical providers, and uncertain follow-up.
- Miller, 2008: A review of obstetrical US safety was performed by a research professor in radiology at the University of Michigan School of Medicine, funded in part by the National Institutes of Health. Dr. Douglas Miller reviewed the evolution of US technology over the 40 years since it was first introduced. He noted that, although there is currently an expectation of US safety, "the safety assurance framework has evolved in a haphazard way, leaving room for some doubt about the absolute safety of ultrasound in obstetrics." His underlying principle was that "absence of evidence of harm is not evidence that no harm is possible". Further, he only supported the use of prenatal US by trained professionals for any medically indicated examination. In particular, based on a potential safety issue, he did not support prenatal US for:
 - o Keepsake photos, videos or "good artistic portraits", with no medically useful component
 - o "Bonding" between mother and infant
 - o Sales demonstration purposes, e.g., at conferences and trade shows

Summary of reviews of prenatal safety: Three recent SRs have examined the primary research on the safety of prenatal US, this totalling about 60 publications published between 1970 and 2008. Overall, there has been essentially no measurable impact of the technology on maternal or perinatal outcomes; childhood growth, neurological development, or school performance; childhood malignancy; and intellectual performance and mental diseases after childhood. A review of obstetrical US safety came to the same conclusions. However, important themes among these reviews were:

- Research was generally conducted using US technology with lower acoustic potency than
 what is available today; fetal exposure using current equipment can be almost eight times
 greater than that used previously and the effects of this increased intensity are unknown.
- Study milieu included medically necessary services provided by skilled and/or licensed sonographers or physicians and did not explore US effects as provided by less skilled providers in commercial venues where quality assurance may not be in-built.
- Given the unknowns and the potential jeopardization of fetal health, there is little support for US examinations that are not deemed to be medically necessary.

Safety knowledge of end-users, e.g., physicians and sonographers

Issues related to safety will not be a priority unless those using a technology are knowledgeable about it and committed to safety. With respect to prenatal US and safety, the knowledge and attitudes of end-users (e.g., physicians and sonographers) were examined by researchers from Israel, Sweden, and the USA (Marsál, 2005; Sheiner et al., 2007; Sheiner & Abramowicz, 2008).

A 2006 study in Chicago surveyed end-users attending review courses and grand rounds (n=130). The group included physicians (50% obstetricians, the remainder maternal-fetal specialists and radiologists); sonographers; and nurse practitioners. Those surveyed were experienced, with a mean of 10 years in US (range 1 to 40 years) and a mean of 8 examinations per day (range 1 to 31).

In general, the main US parameters of note are thermal index (TI) and mechanical index (MI). The expresses the potential for a rise in temperature along the US beam (hyperthermia theoretically leads to teratogenicity) and MI expresses the potential for US to induce cavitation in tissues due to air bubbles (theoretically leading to intense local heating and high pressure in the fetal body). The majority of survey respondents were not familiar with the terms (68% not familiar for TI and 78% for MI) and most could not answer questions about TI and MI (82% and 96%, respectively). Eighty percent of respondents did not know where to find these measurements on an US machine (Sheiner et al., 2007). A survey in Europe (n=199) reported similar outcomes (Marsál, 2005).

The Chicago survey also explored opinions about safety and linked these opinions with safety knowledge. Half the respondents believed there should be limits placed on number of US scans in low-risk pregnancies with an acceptable mean of 2.6 exams (range 1 to 6); 12% believed there were adverse effects of US on a fetus; 64% believed US should only be used when medically indicated; and 69% disapproved of keepsake US. There was a correlation between respondents who were more knowledgeable about safety and those who believed both in US limits and the potential for harm to the fetus (Sheiner et al., 2007).

Summary of safety knowledge of end-users: Surveys of physicians and sonographers who perform prenatal US have revealed surprising gaps in knowledge about safety. End-users in the USA and Europe (n=130 and n=199, respectively), about 50% of whom were obstetricians, generally did not understand the principles related to the fetal damage that can potentially occur from thermal and mechanical interference by US energy. The American study reported that those with more complete understanding about safety were more likely to hold more conservative views about US use, e.g., limiting numbers of scans and restricting US to medical indications.

POSITIONS OF PROFESSIONAL ORGANIZATIONS

A number of professional organizations have published their positions with respect to keepsake prenatal US. Examples are contained in Table 1; all are opposed to the use of keepsake US on the basis of (theoretical) safety concerns. In addition, three states in the USA (Connecticut, New York, and Texas) have enacted legislation to limit performance of prenatal US to exams ordered by a licensed health care professional and required for medical or diagnostic purposes. California has limited sales of US machines to licensed professionals (after Tom Cruise purchased one).

TABLE 1: POSITIONS OF ORGANIZATIONS AND JURISDICTIONS RE KEEPSAKE US (ALL ARE UNSUPPORTIVE) (Note: This list is not exhaustive)

	Organization	Position / statements
1		Endorses the position of the AIUM (see below)
<u> </u>	AIUM (USA)	Strongly discourages the non-medical use of US for psychological or entertainment purposes. Use to view the fetus, obtain a picture of the fetus, or determine fetul gender without a medical indication is inappropriate and contrary to responsible medical practice.
<u> </u>	BMUS / ECMUS (Britain / Europe)	US scans should not be performed solely for producing souvenir mages or recordings of a fetus or embryo (no diagnostic benefit). The production of souvenir images or recordings for the parents to keep is reasonable if they are produced during a diagnostic scan, provided that this does not require US
	CAR	Strongly opposes the use of dagnostic US equipment for non-medical purposes and considers the use of medical US for entertainment to be a misuse of the technology, especially if fetal subjects are involved.
.i	CPSBC (Canada) (same	The use of US for the sole purpose of obtaining a picture or video image of the fetus, or to determine the gender of the fetus without a medical indication,
	position stated by the CPSO)	is inappropriate and contrary to good medical practice. Members offering US for non-medical purposes are cautioned that the offering of such services should not negatively impact access to US for diagnostic purposes (and all costs must be billed to the patient directly).
	CSDMS (Canada)	Entertainment US facilities may operate outside of medical guidelines and without any controls. This may result in a lack of technical safeguards, operator expertise, or governance of eechnical competency. It is essential that women considering this type of non-diagnostic examination be informed of all the potential risks before making the decision to subject thumselves and their fetuses to US for entertainment. Pattents with their health care provider. FURTHER: The CSDMS does not support persons or facilities that participate in US for entertainment activities. Liability insurance purchased through the CSDMS does not cover such activities. CSDMS is seeking legal opinion on the development of a policy to exclude practitioners who participate in entertainment US from the CSDMS membership.
. L	FDA (USA)	The use of US irraging devices for producing fetal keepsake videos is viewed as an unapproved use by the FDA. People who promote, sell or lease US equipment for analing keepsake fetal videos should know that FDA views this as an unapproved use of a medical device. In addition, those who subject individuals to US exposure using a diagnostic US device without a physician's order may be in violation of state or local laws or regulations regarding use of a prescription medical device.
·	Occupational Health & Safety, SK (Canada)	The Radiation Safety Unit of the Ministry of Advanced Education, Employment and Labour in SK recommends that expecting mothers only expuse their fetus to US for approved medical purposes that have been referred by a duly qualified medical practitioner.
<u>-</u> -	Health Canada	Health Canada recommends against exposing unborn babies to fetal US for the purpose of making leepsake videos.
<u> </u>	SOGC (Canada)	SOGC strongly opposes the non-medical use of US to view or photograph the fetus or for the sole purpose of determining fetal sex when there is no medical indication to scar. SOGC recommends that US be used prudently and that energy exposure be limited to the minimum that is medically necessary. The SOGC further recommends a complete han on the non-medical use of fetal US and encourages government to join with the Society to find appropriate means to deal with this potential public health issue.
1,,	USA states California, Connecticut, New York,	California: Restricts use of US machines for personal use, allowing them to be sold only to licensed professionals (after purchase by Tom Cruise). Connections House Bill 5635 limits obsterrical US procedures to those that are ordered by a licensed health care professional and are needed for a medical
HTH- Page	and Texas	or diagnostic purpose. New York: Bill S.6776-A restricts the administration of US on a pregnant woman to those performed pursuant to an order or referral by a licensed physician, nurse practitioner, or licensed midwife, and prohibits the dispensation of US for entertainment purposes. Teas: Requires written prescriptions and doctors' supervision of US technicians.
-2012-00136 -70		KEY: ACOG=American College of Obstetricians & Gynecologists; AUDM= American Institute of Ultrasound in Medicine; BAUS=British Medical Ultrasound Society; CAR=Canadian Association of Raciblogists; CPSC=College of Physicians & Surgeons of BC; CPSC=College of Physicians & Surgeons of Donardo; CSDMS=Canadian Society of Physicians & Surgeons of BC; CPSC=College of Physicians & Surgeons of Donardo; CSDMS=Canadian Society of College of Physicians & Surgeons of Physicians & College of Phys

OTHER ISSUES OF CONCERN WITH KEEPSAKE ULTRASOUND

All experts, organizations, and jurisdictions that discourage use of keepsake US and urge limiting exposure of fetuses to US energy make an argument related to safety. This is not avoidance of established harms, as none have been shown, but avoidance of theoretical harms to an unborn baby's development, senses, intellect, etc. A common query is why a mother / couple would take a risk, even a theoretical one, to harm their fetus when there is no medical requirement for a keepsake US procedure (e.g., FDA, 2008; Leung & Pang, 2009).

The arguments follow several themes:

- Oversight of services, providers, and facilities may be lacking without required regulation including quality standards and processes, and licensure of providers (SOGC, 2007).
- Research to date has been conducted in medical settings with well-qualified staff and quality
 assurance processes, versus unregulated commercial settings with potentially unqualified staff
 where scanning times and intensities that exceed those deemed to be safe (Voelker, 2005;
 Simonsen et al., 2008).
- Research conducted to date employed older US technology with much lower acoustic potency
 than what is available today, meaning that perhaps these reassuring findings cannot be
 extrapolated to outcomes with the newer technologies.
- Prenatal US is now a recommended procedure and sees wide uptake. For ethical reasons, it is
 unlikely that "gold standard" randomized controlled trials can ever be conducted comparing
 outcomes for women who receive prenatal US to those who do not. This means we can never
 know whether current US technology has any impact on maternal or fetal outcomes (By & Van
 den Hof, 2005; Wiseman & Kiehl, 2007).

However, beyond safety concerns, there are other issues to consider:

- Women who have keepsake US could be falsely reassured and inadvertently or deliberately
 neglect to seek suitable prenatal care, including obtaining the clinically indicated US scans
 ordered by their providers. They may believe that the keepsake US is accomplishing the same
 purposes as a diagnostic US would (ACOG, 2004; Simonsen et al., 2008; CSDMS, 2009).
- Errors of omission may occur (i.e., the fetus has an anomaly that is not detected) as can false
 positive results (i.e., concern is expressed when there is nothing wrong, and the patient suffers
 unnecessary anxiety and follow-up testing). Also, how would staff discuss such findings with the
 patients? Announce the had news? Say nothing? (ACOG, 2004; Deutchman, 2005; Watts,
 2007).
- There is currently a shortage of skilled US technicians and the public system will be further strained if qualified providers are "siphoned off" to work for commercial facilities.

DISCUSSION

For several decades US has been an integral part of prenatal care in developed countries with scans recommended in the first and second trimesters for accurate dating, ruling out multiple pregnancies, and detecting some feral anomalies. 2D scanning is the norm, conducted in a medical setting with patients waiting days/weeks for results and perhaps receiving a black and white photo. Facilities and providers are subject to a regulation and quality control.

This lack of user friendliness has created a business opportunity for entrepreneurs who have installed more advanced 3D/4D US technology under private-pay paradigms (often in malls), and packaged it in a "soft and fuzzy" manner. Keepsake US scans are marketed as a chance for parents to bond with their unborn children, with commercial packages (generally \$100 to \$300) including features such as videos / DVDs to share with family and friends.

Professional organizations of physicians and sonographers, as well as regulators like Health Canada and the FDA, have universally condemned the performance of keepsake US, primarily on the basis of safety risks to the fetus. The main arguments are:

 Oversight of services, providers, and facilities may be lacking without required regulation, including quality standards and processes, and licensure of providers.

 Research to date has been conducted in medical settings with qualified staff and in-built quality processes, versus unregulated commercial settings with potentially unqualified staff.

Research conducted to date employed older US technology with much lower acoustic potency
than what is available today and reassuring safety results cannot be seamlessly extrapolated.

 For ethical reasons, it is unlikely that "gold standard" randomized controlled trials can ever be conducted now, comparing outcomes for women who receive prenatal US to those who do not.

To determine whether safety risks have been reported with prenatal US, a literature review was conducted. Located were three recent SRs covering at least 40 research studies; one was particularly rigorous, conducted for the WHO. In addition, a recent 40-year review of safety assurance for obstetrical US was obtained, sponsored by the National Institutes of Health in the USA. In these documents, no evidence of negative outcomes for mothers or babies was reported. However, experts in this area (e.g., obstetricians, maternal-fetal specialists) believe that there is no justification in exposing a fetus to possible harm for entertainment purposes and that US should only be available upon the referral of a qualified physician or other provider. There is agreement that prenatal US should be limited in numbers of scans performed, and length and intensity of scanning, following the ALARA principle (as low as reasonably achievable).

Lack of regulation in most jurisdictions means that it will not be easy to reverse the trend towards keepsake US, although at least four states in the USA have introduced limiting legislation (California, Connecticut, New York, and Texas). In Canada, the ministries of health in both Saskatchewan and Manitoba are also exploring the situation.

Of interest, there are "devil's advocates", e.g., an American bioethicist has pondered whether the "alarmist strategies used to paint keepsake US as bad science and to elevate the medical use of US" have less to do with concerns about safety and more to do with a medical community fearful that its authority is being usurped (Raucher, 2009).

CONCLUSIONS

Keepsake US is filling a niche for pregnant women / couples in Canada who are willing to pay to gain a clear view of their unborn baby in a relaxed environment, and to share this with friends and family both in the examination room and later via photographs and DVDs. This is occurring despite the fact that most women have at least two prenatal US during their pregnancy on the referral of their health care providers (BC data show an average of 2.4 US).

Professional organizations and regulators have unanimously condemned keepsake US as a safety hazard for unborn babies, although there is currently no evidence of harm resulting from prenatal US. These bodies adhere to the principles that "absence of evidence of harm is not evidence that no harm is possible" and that testing should follow the ALARA principle (as low as reasonably achievable) to ensure good fetal outcomes.

REFERENCES

3D Miracles [website]. 3D baby scans using 3D 4D ultrasound at 3D Miracles. 2009. Available at: http://www.3dmiracles.com/?gclid=CIGNioeTn6ACFQQNDQodtQ6JZQ

Abuhamad AZ; ACOG Committee on Practice Bulletins-Obstetrics. ACOG Practice Bulletin, clinical management guidelines for obstetrician-gynecologists number 98, October 2008. Ultrasonography in pregnancy. Obstet Gynecol. 2008 Oct;112(4):951-61.

American College of Obstetricians and Gynecologists (ACOG), Nonmedical use of obstetric ultrasonography. (Committee Opinion no. 297). Washington (DC): American College of Obstetricians and Gynecologists; 2004 (reaffirmed 2009). Available: http://www.acog.org/from_home/publications/ethics/co297.pdf

Bly S, Van den Hof MC; Diagnostic Imaging Committee, Society of Obstetricians and Gynaecologists of Canada. Obstetric ultrasound biological effects and safety. J Obstet Gynaecol Can. 2005 Jun;27(6):572-80

Canadian Association of Radiologists (CAR). Position on the use of diagnostic ultrasound for non-medical purposes. 1996. Available: http://www.csdms.com/docs/02.pdf

Canadian Society of Diagnostic Medical Sonographers (CSDMS), [Statement]. 2009. Available; http://www.csdms.com/docs/ues.pdf

Deutchman M. Nonmedical ultrasonography during pregnancy. American Family Physician, 2005 Dec; 72(11):2362-4.

Government of Saskatchewan. Occupational Health and Safety, Radiation Safety Unit. Keepsake fetal ultrasound policy. [2007] Available: http://www.labour.gov.sk.ca/keepsake-fetal-ultrasound

Health Canada. Fetal ultrasound for keepsake videos. 2003. Available: http://www.hc-sc.gc.ca/hl-vs/jyh-vsv/med/ultrasound-echographie-eng.php

Houston LE, Odibo AO, Macones GA. The safety of obstetrical ultrasound: a review. Prenat Diagn. 2009 Dec;29(13):1204-12. Available: http://www3.interscience.wiley.com/cgi-bin/fulltext/122677317/PDFSTART

Lapaire O, Alder J, Peukert R, Holzgreve W, Tercanli S. Two-versus three-dimensional ultrasound in the second and third trimester of pregnancy: impact on recognition and maternal-fetal bonding. A prospective pilot study. Arch Gynecol Obstet. 2007 Nov;276(5):475-9.

Leung JL, Pang SM. Ethical analysis of non-medical fetal ultrasound. Nurs Ethics. 2009 Sep;16(5):637-46.

Marsál K. The output display standard: has it missed its target? Ultrasound Obstet Gynecol. 2005 Mar;25(3):211-4.

Miller DL. Safety assurance in obstetrical ultrasound. Semin Ultrasound CT MR. 2008 Apr;29(2):156-64. Available: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2390856/?tool=pubmed

Province of British Columbia, Ministry of Health (MOH). Baby's best chance: Parents' handbook of pregnancy and baby care. Victoria (BC); 2005. Available: http://www.health.gov.bc.ca/library/publications/year/2005/babybestchance.pdf

Provincial Health Services Authority (PHSA), BC Prenatal Genetic Screening Program, Prenatal screening for Down syndrome, trisomy 18 and open neural tube defects. Vancouver (BC); January 2010, Available: http://www.bcprenatalscreening.ca/sites/prenatal2/files/Charts_Algorithms_P.pdf

Raucher MS. What they mean by "good science': the medical community's response to boutique fetal ultrasounds. J Med Philos. 2009 Oct;34(5):528-44.

Sheiner E, Shoham-Vardi I, Abramowicz JS. What do clinical users know regarding safety of ultrasound during pregnancy? J Ultrasound Med. 2007 Mar;26(3):319-25.

Sheiner E, Abramowicz JS. Clinical end users worldwide show poor knowledge regarding safety issues of ultrasound during pregnancy. J Ultrasound Med. 2008 Apr;27(4):499-501.

Simonsen SE, Branch DW, Rose NC. The complexity of fetal imaging: reconciling clinical care with patient entertainment. Obstet Gynecol. 2008 Dec;112(6):1351-4.

Sneek A Peek Ultrasound. Frequently asked questions. 2010. Available at: http://www.sneakapeek.ca/faq.htm

Society of Obstetricians and Gynaecologists of Canada (SOGC). Non-medical use of fetal ultrasound. (SOGC Policy Statement no. 191). J Obstet Gynaecol Can 2007;29(4):364–365. Available: http://www.sogc.org/guidelines/documents/191E-PS-April2007.pdf

Timor-Tritsch IE, Monteagudo A. Three and four-dimensional ultrasound in obstetrics and gynecology. Curr Opin Obstet Gynecol. 2007 Apr;19(2):157-75.

Topfer LA, Hailey D. Four-dimensional ultrasound for prenatal diagnosis. Ottawa: Canadian Coordinating Office for Health Technology Assessment (CCOHTA); 2002. (Emerging Technology List; no. 15) Available: http://www.cadth.ca/media/pdf/152 No15 4dultrasound etcch e.pdf

Torloni MR, Vedmedovska N, Merialdi M, Betrán AP, Allen T, González R, Platt LD; ISUOG-WHO Fetal Growth Study Group. Safety of ultrasonography in pregnancy: WHO systematic review of the literature and mota-analysis. Ultrasound Obstet Gynecol. 2009 May;33(5):599-608.

UC Baby [website]. High quality 3D ultrasound prenatal images & video. Available: http://www.uc-baby.com/en/index.php?gclid=CLO7sZe_o6ACFQQNDQodtQ6JZQ

US Food and Drug Administration (FDA). Avoid fetal "keepsake" images, heartbest monitors. FDA Consumer Health Information. Rockville (MD): FDA; 2008. Available: http://www.fda.gov/downloads/ForConsumers/Consumer-Undates/ucm095602.pdf

US Food and Drug Administration (FDA). Fetal keepsake video. [2009]. Available: http://www.fda.gov/MedicalDevices/Safetv/AlertsandNotices/PatientAlerts/ucm064756.htm

Voelker R. The business of baby pictures: Controversy brews over "keepsake" fetal ultrasounds. JAMA. 2005;293:25-7.

Watts G. First pictures One for the album. BMJ. 2007 Feb 3;334(7587):232-3. Available: http://www.ncbi.nlm.nih.gov/pmc/articles/PMC1790740/?tool=pubmed

Wiseman CS, Kiehl EM. Picture perfect: benefits and risk of fetal 3D ultrasound. MCN Am J Matern Child Nurs. 2007 Mar-Apr;32(2):102-9.

Yagel S, Cohen SM, Messing B, Valsky DV. Three-dimensional and four-dimensional ultrasound applications in fetal medicine. Curr Opin Obstet Gynccol. 2009 Apr;21(2):167-74.

You JJ, Alter DA, Stukel TA, McDonald SD, Laupacis A, Liu Y, Ray JG. Proliferation of prenatal ultrasonography. CMAJ. 2010 Feb 9;182(2):143-51.

Zamora D. Prenatal portraits: Darling or dangerous? WebMD. 2004. Available at: http://www.webmd.com/baby/features/prenatal-portraits-darling-dangerous