

Trinity College Dublin

The MAMMI Study UI Strand

Maternal health And Maternal Morbidity in Ireland

**Stress Urinary Incontinence (SUI) before and during early pregnancy
the help and advice-seeking behaviour
of primiparous women**

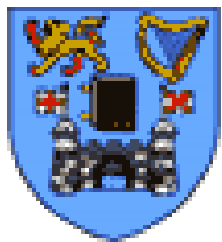
**Optimising Childbirth Across Europe
9th-10th April 2014, Brussels**

Déirdre Daly

Lecturer in Midwifery/HRB Research Fellow, Trinity College Dublin

Supervisors:

Professor Cecily Begley, TCD and Professor Mike Clarke, QUB (Adjunct Professor TCD)

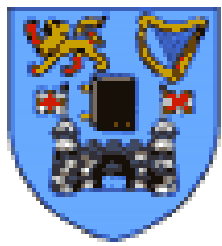


Trinity College Dublin

The MAMMI Study UI Strand

Sincerest thanks to

- **The women** (all women including those who are not taking part but who read the information)
- My colleagues **Margaret Carroll, Deirdre O'Malley, Francesca Wuytack, Sunita Panda, Louise Rafferty**
- **Rebekah Maguire** and **Sophie Clare** who worked with us on the MAMMI study in summer 2012
- The **Health Research Board (HRB)** for funding the MAMMI study (UI) strand
- **Professor Stephanie Brown**, Murdoch Children's Research Institute, Australia for granting permission to use and modify surveys



Trinity College Dublin

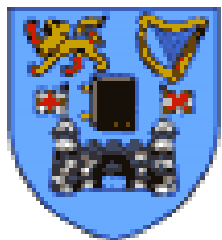
The MAMMI Study UI Strand

A special thanks to

- The **midwives** and **midwifery students**
- The **IT Midwives**
- The **medical records staff**

Administrative and other **colleagues** who are supporting the MAMMI study





Trinity College Dublin

The MAMMI Study UI Strand

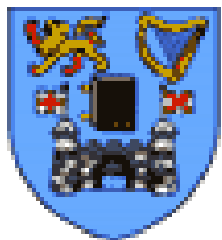
Maternal health And Maternal Morbidity in Ireland

This presentation will focus on

**The help and advice-seeking behaviour of primiparous women
who experience SUI before and during early pregnancy**

(Data from women enrolled up to March 2014, n=1183)

- Women with SUI before pregnancy
 - Women with SUI during pregnancy
- } Qualitative comments
from survey 1, the
antenatal survey



Trinity College Dublin

The MAMMI Study UI Strand

Maternal health And Maternal Morbidity in Ireland

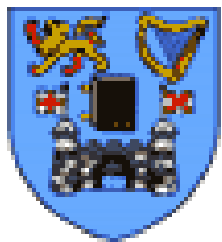
This presentation will focus on

**The help and advice-seeking behaviour of primiparous women
who experience SUI before and during early pregnancy**

(Data from women enrolled up to March 2014, n=1183)

- Women with SUI before pregnancy
 - Women with SUI during pregnancy
- } Qualitative comments
from survey 1, the
antenatal survey

- The presentation will include
 - Overview of study methodology
 - Aim and objectives of the MAMMI Study UI Strand
 - Key *take home* message



Trinity College Dublin

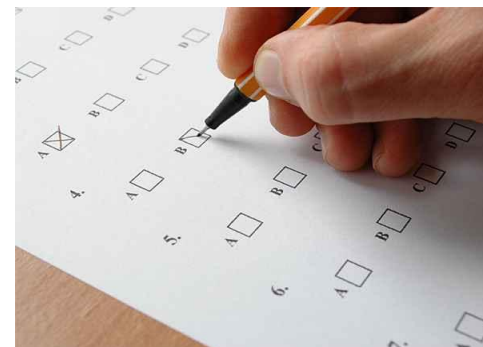
Mixed methods design

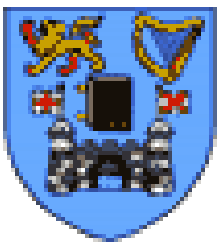
The MAMMI Study

A cohort study with 2,000 first-time mothers: public, private, semi-private – survey.

Women are **recruited at the booking visit** in two large maternity hospitals

(**1600** from **1st site** and **400** from **2nd site**)





Mixed methods design



The MAMMI Study

Trinity College Dublin

Study No

The MAMMI study
Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Survey Booklet One: Antenatal 1

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Please tick here if you do NOT wish to complete this or future surveys ☐

Survey 1
Antenatal
First booking visit

The MAMMI study
Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Survey Booklet Two: 3 Months Postnatal 2

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

If you do not want to complete this or future surveys please tick ☐

Survey 2
3 months
postpartum

The MAMMI study
Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Survey Booklet Three: 6 Months Postnatal 3

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Please tick here if you do not want to complete this or receive future surveys ☐

Survey 3
6 months
postpartum

The MAMMI study
Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Survey Booklet Four: 9 Months Postnatal 4

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Please tick here if you do not want to complete this or receive future surveys ☐

Survey 4
9 months
postpartum

The MAMMI study
Maternal health And Maternal Morbidity in Ireland

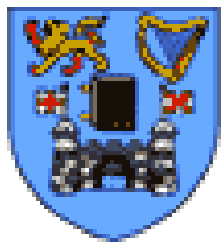
A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Survey Booklet Five: Twelve Months Postnatal 5

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me – Deirdre Daly on 01 88888888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Survey 5
12 months
postpartum



Mixed methods design

Trinity College Dublin

Study No

The MAMMI study Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Survey Booklet One: Antenatal 1

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call 01 856 8888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Please tick here if you do NOT wish to complete this or future surveys ☐

Survey Booklet Two: 3 Months Postnatal 2

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me - Deirdre Daly on 01 856 8888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

If you do not want to complete this or future surveys please tick ☐

Study No

The MAMMI study Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Survey Booklet Three: 6 Months Postnatal 3

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me - Deirdre Daly on 01 856 8888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Please tick here if you do not want to complete this or receive future survey ☐

Study No

The MAMMI study Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Survey Booklet Four: 9 Months Postnatal 4

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me - Deirdre Daly on 01 856 8888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Please tick here if you do not want to complete this or receive future surveys ☐

Study No

The MAMMI study Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Study No

The MAMMI study Maternal health And Maternal Morbidity in Ireland

A research study of 1600 first-time mothers' health during pregnancy and after giving birth.

Survey Booklet Five: Twelve Months Postnatal 5

Thank you for taking the time to complete this survey. It will take you about 30 minutes to complete it and your answers are **confidential**. If you have any questions at all, or need help answering any of the questions, please feel free to call me - Deirdre Daly on 01 856 8888.

The MAMMI survey has been approved by the Research Ethics Committees of the Rotunda Hospital and the Faculty of Health Sciences, Trinity College Dublin.

Survey 1
Antenatal
First booking visit

Survey 2
3 months
postpartum

Survey 3
6 months
postpartum

Survey 4
9 months
postpartum

Survey 5
12 months
postpartum

Identify factors
amenable to
modification and
trialling in future
studies

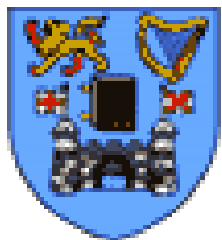
Data
collection
from
women's
records



Interviews
with women
experiencing
a morbidity



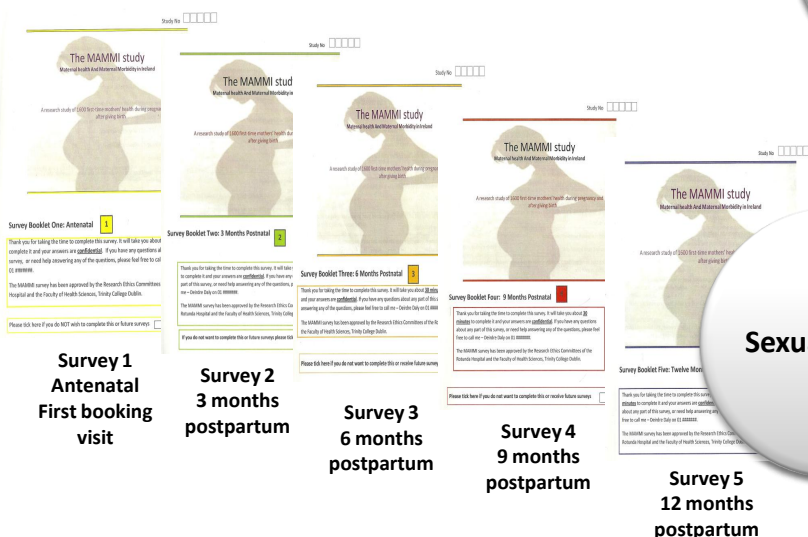
To ascertain
health service
and self-help
seeking
behaviour



The MAMMI Study

Trinity College Dublin

Each of the surveys asks women about...



Intimate partner violence

General health

Mental health

2000 primiparous women
(A/N, 3, 6, 9 and 12 months postpartum)

Data collection from women's records

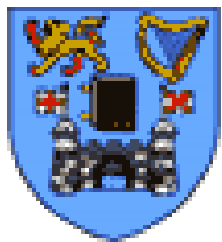
One-to-one interviews with women experiencing a morbidity
(n=20-30)

Pain

Urinary incontinence (UI)

Faecal incontinence

Sexual health

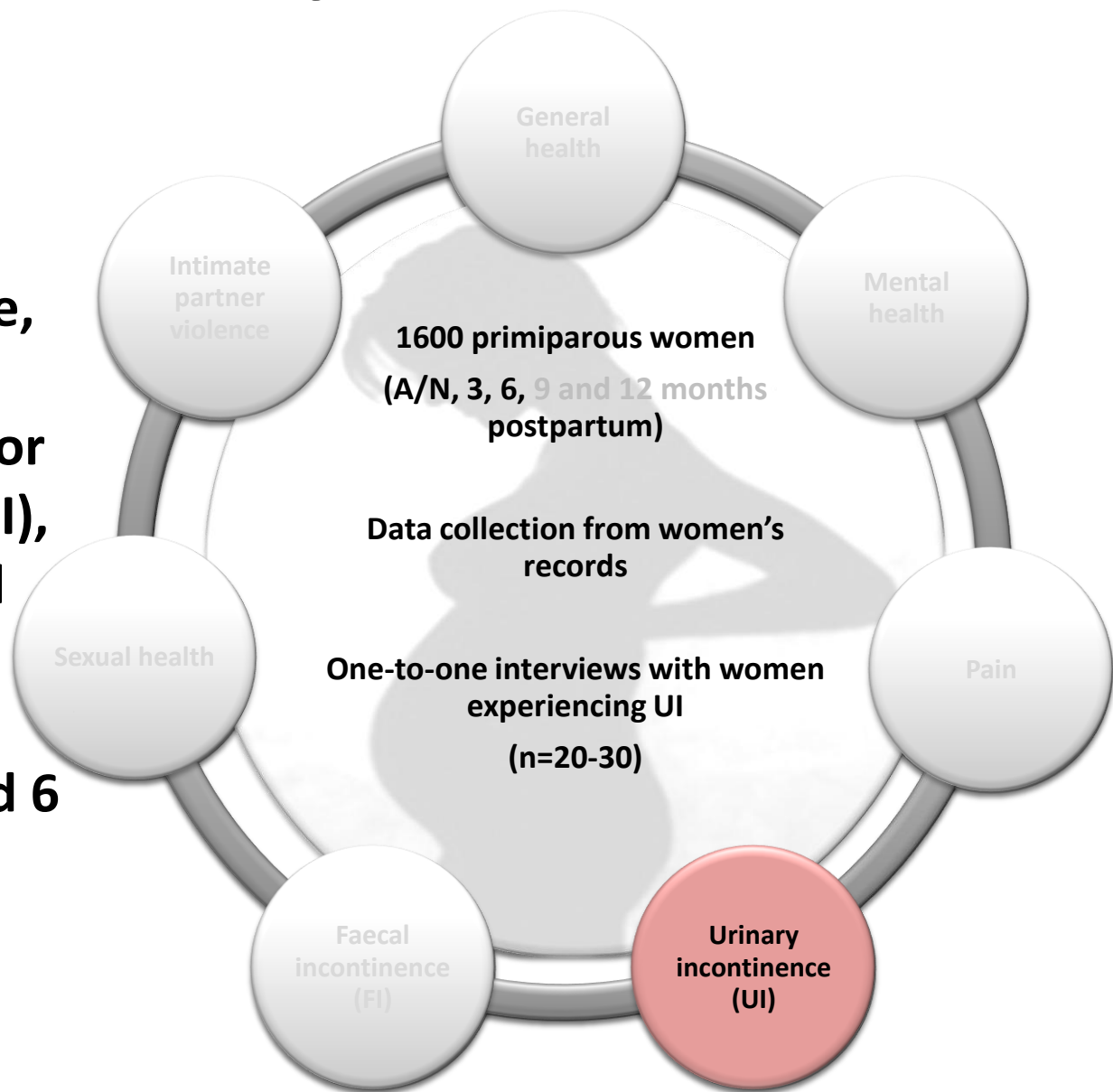


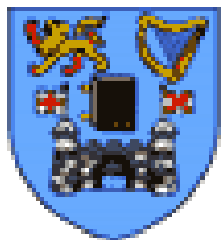
Trinity College Dublin

The MAMMI Study UI Strand

Aim:

To identify the existence, extent, prevalence and associated risk factors for urinary incontinence (UI), one marker of maternal morbidity, in 1600 primiparous women antenatally and at 3 and 6 months postpartum.



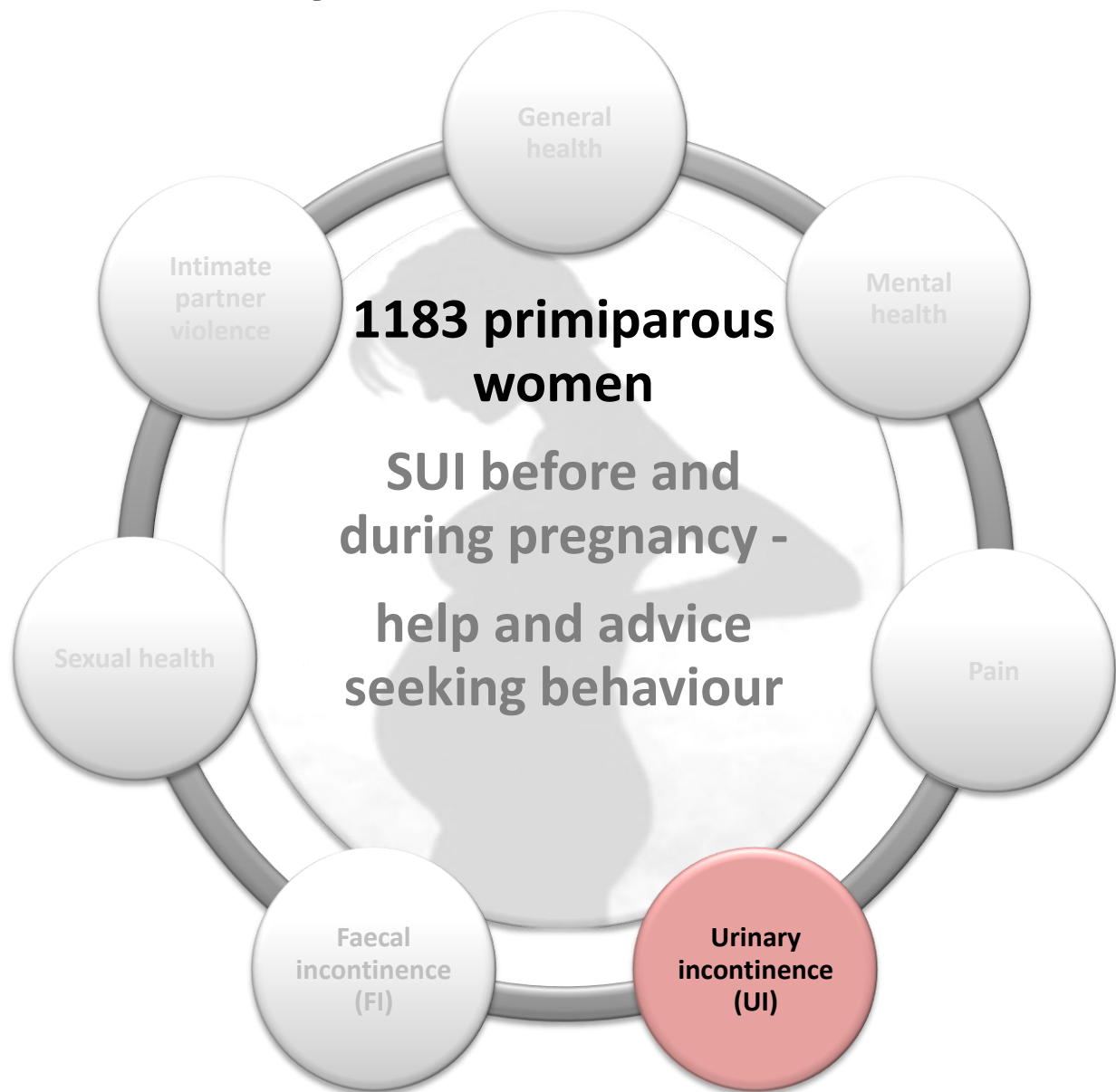


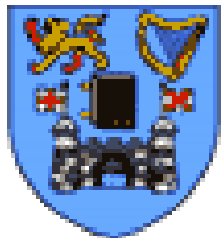
Trinity College Dublin

The MAMMI Study UI Strand

**Today's presentation
focuses on
objective (3)**

**The help and
advice-seeking
behaviour of women
with SUI before and
during pregnancy**





Definition - Urinary Incontinence (UI)

Trinity College Dublin

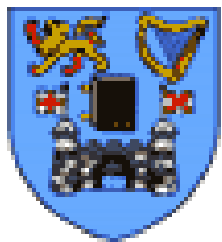
- The complaint of any involuntary leakage of urine
 - **Stress Urinary Incontinence (SUI)**
 - Involuntary leakage on effort or exertion, or on sneezing or coughing
 - Urge Urinary Incontinence (UUI)
 - Involuntary leakage accompanied by or immediately preceded by urgency.
 - Mixed Urinary Incontinence (MUI)
 - Involuntary leakage associated with urgency and also with exertion, effort, sneezing or coughing.

Definitions

Abrams et al (2002) 2nd International Consultation on Incontinence 2nd edition.

Available at: http://www.ics.org/Publications/ICI_4/book.pdf

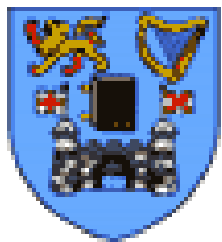




Trinity College Dublin

The MAMMI study

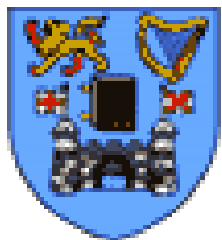
- **Preliminary data**
 - (~40%) of primiparous women are being offered information on the MAMMI study
 - Of those given the information, about two in five complete the survey
 - Response rate (~40%)



Nationality (n=1183)

Trinity College Dublin

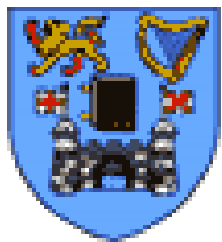
Nationality	The MAMMI Study		Site hospital 2012 (n = 9116) (all women)	
	n	%	n	%
Irish	766	64.8	5957	65.4
EU	291	24.6	1929	21.2
Non-EU	107	9.0	1217	13.3
Not stated	19	1.6	13	0.1



Age groups (n=1182)

Trinity College Dublin

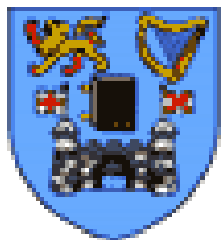
Age group	The MAMMI Study		Site hospital 2012 (n=3928) _(primiparae)	
	n	%	n	%
Up to 24	99	8.4	872	22.2
25 to 29	293	24.8	1031	26.2
30 to 34	493	41.7	1307	33.3
35 to 39	256	21.6	577	14.7
40 and over	41	3.5	141	3.6



BMI categories (n=1085)

Trinity College Dublin

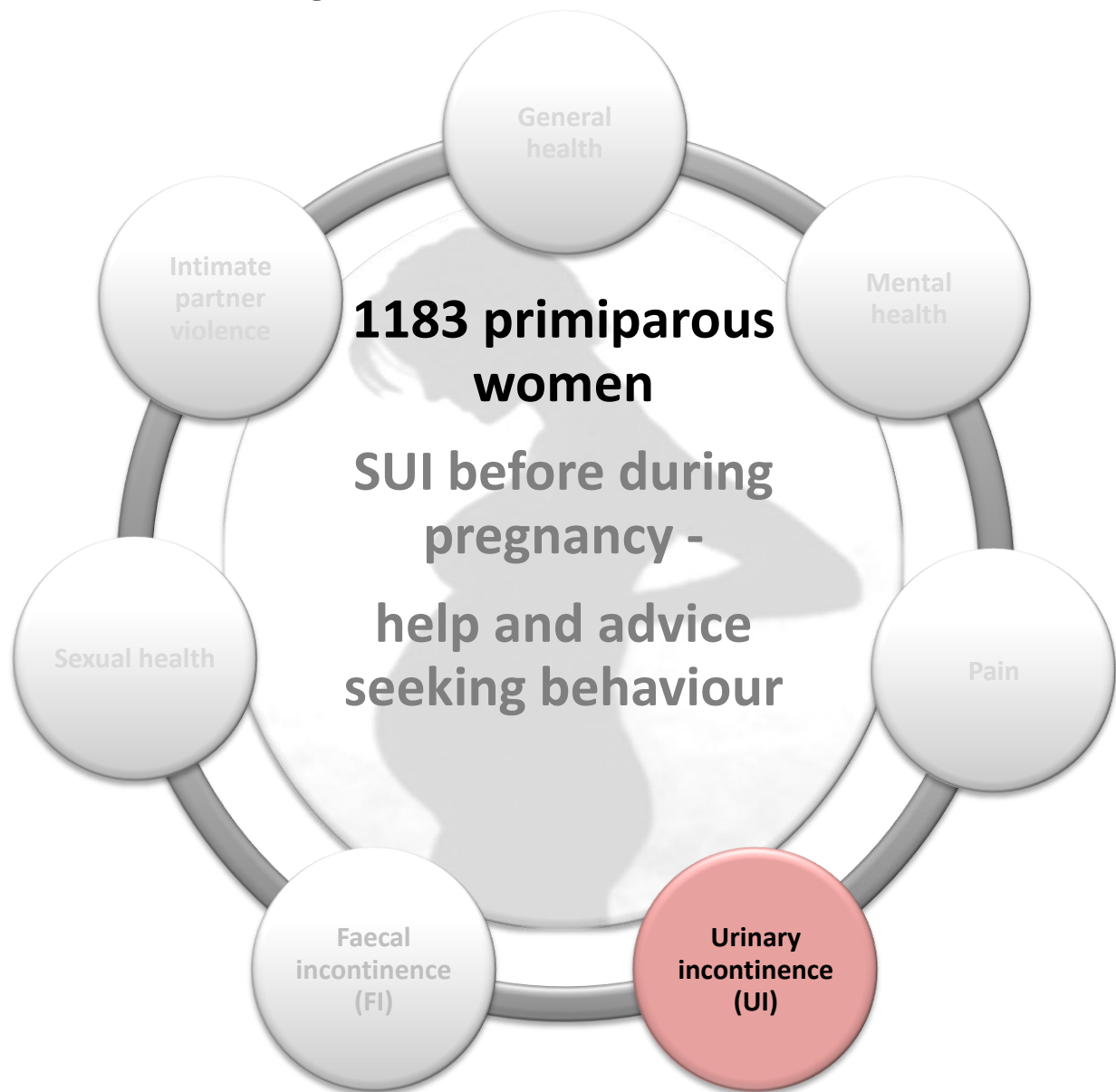
BMI categories		The MAMMI Study		Site hospital	
BMI	n	%	n	%	
Underweight (≤ 18.49)	68	5.7	Not reported		
Ideal (18.5-24.9)	729	61.6			
Overweight (25-29.9)	186	15.7			
Obese (30-34.9)	84	7.1			
Very obese (≥ 35)	18	1.5			
Total	1085	91.7			
Missing	1183	8.3			



Trinity College Dublin

The MAMMI Study UI Strand

**Prevalence of
SUI
before & during
pregnancy**



SUI before pregnancy

	Before pregnancy	
	n = 1183	%
No	922	77.9%
Yes	261	22.1%

SUI before and during pregnancy

	Before pregnancy		During pregnancy	
	n = 1183	%	n = 1180	%
No	922	77.9%	804	68.1%
Yes	261	22.1%	376	31.9%

SUI before and during pregnancy

	Before pregnancy		During pregnancy	
	n = 1183	%	n = 1180	%
No	922	77.9%	804	68.1%
Yes	261	22.1%	376	31.9%
SUI once a month or more frequently	56	4.7%	169	14.3%

SUI, UUI & MUI before and during pregnancy

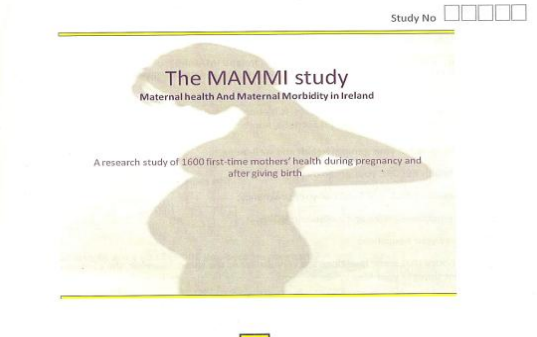
	Before pregnancy		During pregnancy	
	n = 1183	%	n = 1180	%
SUI	261	22.1%	376	31.9%
UUI	290	24.6%	246	21.1%
MUI	149	12.6%	181	15.4%

SUI before pregnancy – help and advice-seeking behaviour

	Before pregnancy		During pregnancy	
	n = 1183	%	n = 1180	%
No	922	77.9%	804	68.1%
Yes	261	22.1%	376	31.9%
SUI once a month or more frequently	56	4.7%	169	14.3%

The help and advice-seeking behaviour of women with any, including occasional, UI

SUI before pregnancy – help and advice-seeking behaviour

	Before pregnancy		Had you ever talked to a doctor or other healthcare professional?
	n = 1183	%	
Yes	261	22.1%	
SUI once a month or more frequently	56	4.7%	

The help and advice-seeking behaviour women with SUI before pregnancy

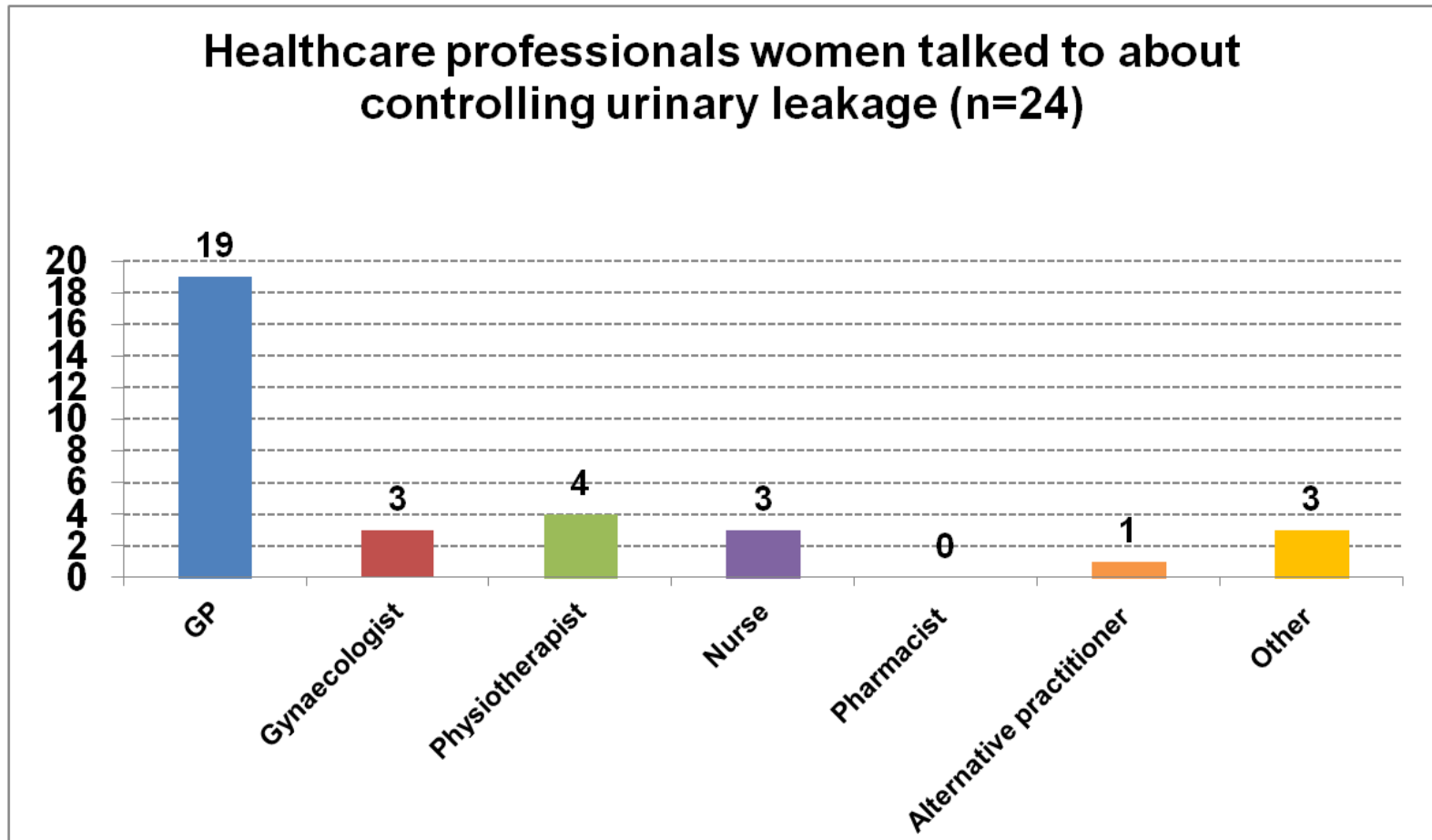
Survey 1
Antenatal
First booking visit

SUI before pregnancy – help and advice-seeking behaviour

	Before pregnancy		Had you ever talked to a doctor or other healthcare professional?
	n = 1183	%	
Yes	261	22.1%	9.2% (n=24)
SUI once a month or more frequently	56	4.7%	

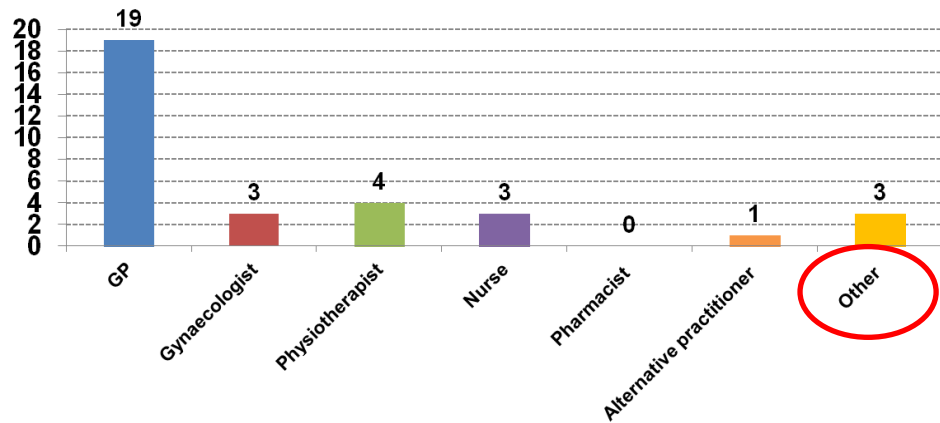
The help and advice-seeking behaviour women with SUI before pregnancy

SUI before pregnancy – help and advice-seeking behaviour



SUI before pregnancy – help and advice-seeking behaviour

Healthcare professionals women talked to about controlling urinary leakage (n=24)



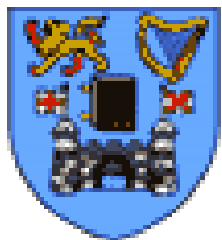
Other

- i. **Urologist** (referred aged 19 years)
- ii. **Back surgeon** (told me there was nothing wrong with me)
- iii. **In hospital** (in Denmark)

Other comments

‘Only leaked...’

- when no toilet nearby
 - when I was unwell
 - after hot bath
 - during physical exercise
 - with kidney infection
-
- drink less coffee & tea now (...saw it on TV)



Trinity College Dublin

MRC

Hubs for Trials
Methodology Research

All-Ireland Hub

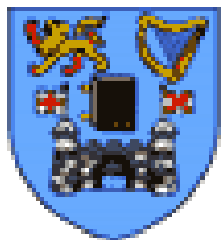
This information is important because...

- Women ***reporting occasional UI before pregnancy*** have ***raised odds*** of developing UI during pregnancy

Brown et al 2010

SUI before pregnancy & persisting during pregnancy

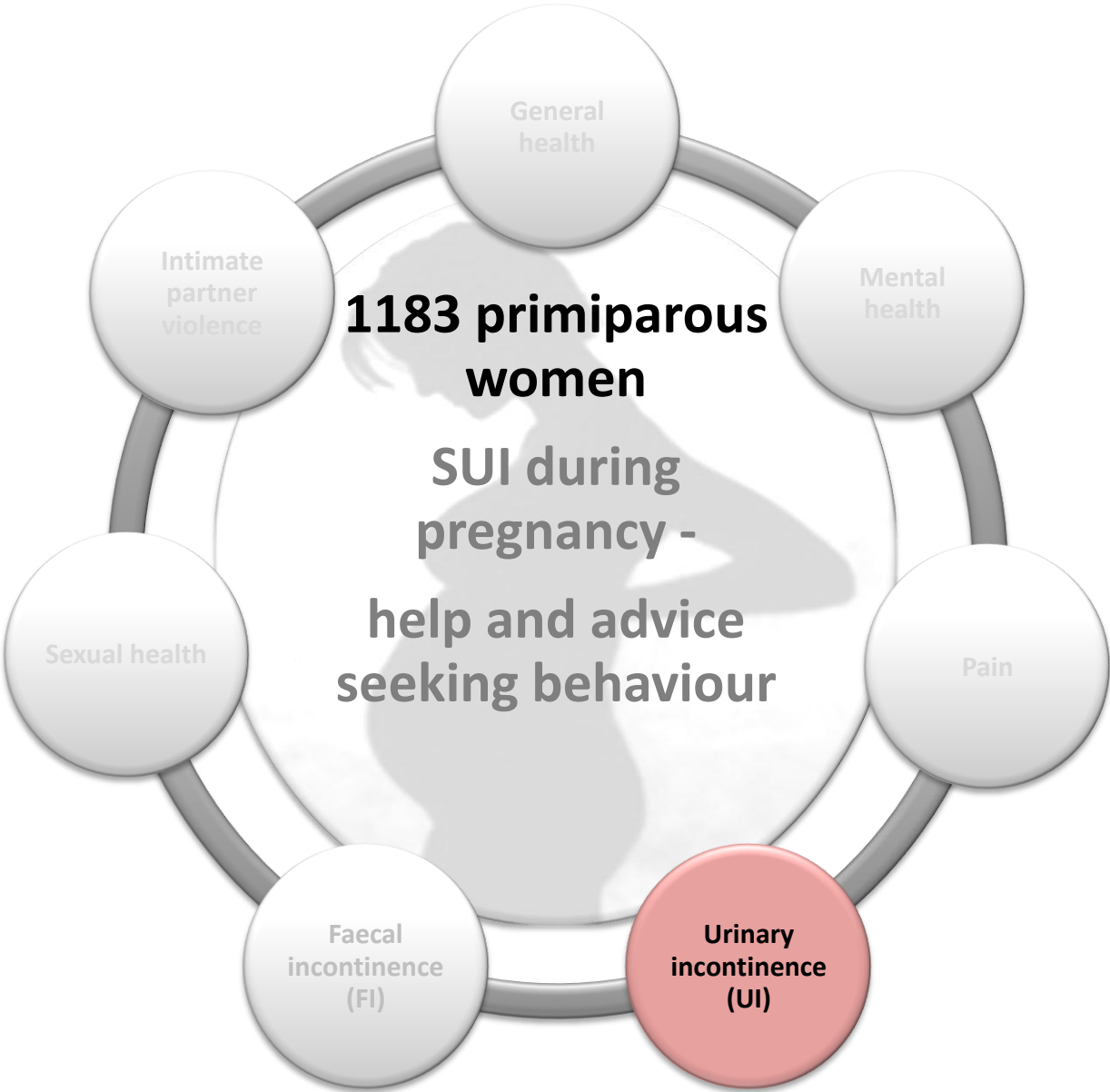
	Before pregnancy		SUI persisting in pregnancy	
	n = 261	%	n = 193	%
No			68	26.1%
Yes	261	22.1%	193	73.9%
SUI once a month or more frequently	56	4.7%	89	14.3%



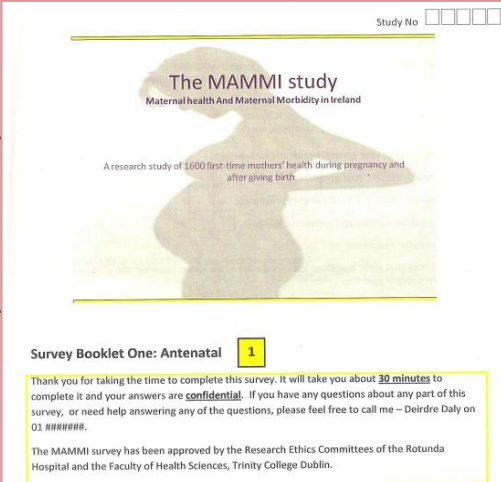
Trinity College Dublin

The MAMMI Study UI Strand

SUI during pregnancy



SUI during pregnancy – help and advice-seeking behaviour

	During pregnancy		Have you talked to a doctor, midwife or other healthcare professional?
	n = 1180	%	
No	804	68.1%	
Yes	376	31.9%	
SUI once a month or more frequently	169	14.3%	

The help and advice-seeking behaviour women with SUI during pregnancy

Survey 1
Antenatal
First booking visit

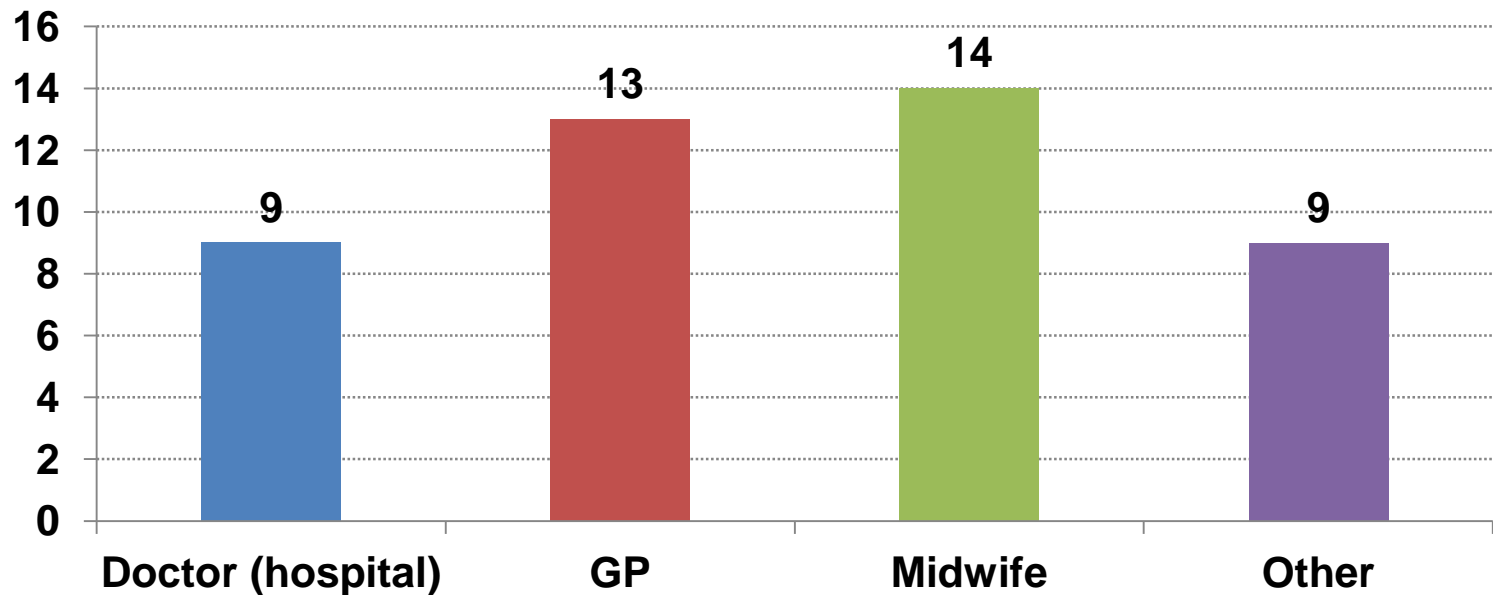
SUI during pregnancy – help and advice-seeking behaviour

	During pregnancy		Have you talked to a doctor, midwife or other healthcare professional?
	n = 1180	%	
No	804	68.1%	12.1% (n=45)
Yes	372	31.9%	
SUI once a month or more frequently	169	14.3%	

The help and advice-seeking behaviour women with SUI during pregnancy

SUI during pregnancy – help and advice-seeking behaviour

Healthcare professionals women talked to about SUI during pregnancy (n=45)



SUI during pregnancy – help and advice-seeking behaviour

Healthcare professionals women talked to about SUI during pregnancy (n=45)



Other

- i. Kidney doctor (in maternity hospital)
- ii. Cousin (Physio)
- iii. Nurse in HARI (infertility clinic)
- iv. Friend
- v. Some mothers
- vi. During booking visit

Other comments

- I take frequent samples to GP
- It's minimal
- Not yet

SUI during pregnancy – help and advice-seeking behaviour

**All women experiencing
SUI during pregnancy
(n=376)**

**127 comments (out of 158
qualitative comments from survey
1, the antenatal survey)**

**Organised into
2 themes**



SUI during pregnancy – help and advice-seeking behaviour - theme (i)

**All women experiencing
SUI during pregnancy
(n=376)**

Recurring theme (i)

It's not...



SUI during pregnancy – help and advice-seeking behaviour - theme (i)

**All women experiencing
SUI during pregnancy
(n=376)**

Recurring theme (i)

It's not...



a problem (119)

an issue (24)

necessary (11)

a big issue (10)

a major problem (9)

a concern (6)

serious (4)

important (4)

a worry (4)

really leaking (3)

SUI during pregnancy – help and advice-seeking behaviour - theme (ii)

**All women experiencing
SUI during pregnancy
(n=376)**

Recurring theme (ii)

It's...



SUI during pregnancy – help and advice-seeking behaviour - theme (ii)

**All women experiencing
SUI during pregnancy
(n=376)**

minor (14)

only...(12)

Recurring theme (ii)

It's...

normal (7)

part of pregnancy (5)



SUI during pregnancy – help and advice-seeking behaviour

Posed as options in surveys

All women experiencing SUI during pregnancy (n=376)

How women felt or what they did about SUI

I...



haven't been able to talk about it (45)

don't want to talk about it (38)

don't think about it

didn't think anything could be done

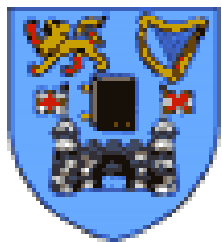
control my fluid intake

felt silly... (talking about it)

have started pelvic floor exercises

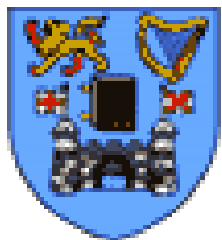
will talk about it if it gets worse

can cope/manage



This information really is important because...

- Women *reporting occasional UI before pregnancy* have *raised odds* of developing UI during pregnancy
 - Brown et al 2010
- Women *who develop UI during the first pregnancy or puerperium* have a *significantly higher risk of UI 5 years later* than women without UI symptoms
 - Viktrup & Lose 2000



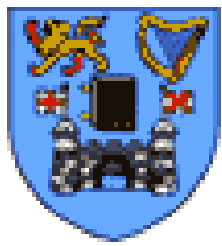
Trinity College Dublin

So what can we learn from these data?

Interpret data with caution as these findings are **preliminary**



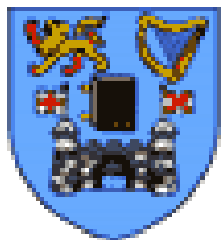
However,
analysis of data from these 1183 women show that...



So what can we learn from these data?

- More than **1 in 5** participants experienced SUI before their first pregnancy
 - **9 out of 10 women did not talk to a healthcare professional**

SUI before pregnancy	
Key points	
➤	261 women (22.1%) experienced SUI before pregnancy
➤	56 (4.7%) women experienced SUI once a month or more frequently
➤	237 women (90.8%) <u>did not talk</u> to a healthcare professional



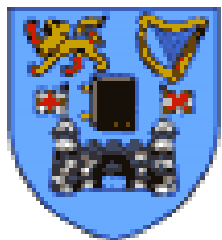
So what can we learn from these data?

- Almost **1 in 3** participants experienced SUI during early pregnancy
 - Almost **9 out of 10 women did not talk to a healthcare professional**

SUI during pregnancy

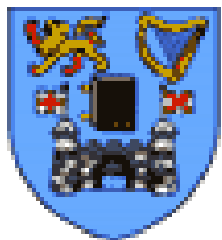
Key points

- **376 women (31.9%) experienced SUI in early pregnancy**
- **169 women (14.3%) experienced SUI once a month or more frequently**
- **331 women (88%) did not talk to a healthcare professional**



This is relevant because...

- Opportunities for continence promotion are being lost (before and during early pregnancy)
 - Women *reporting occasional UI before pregnancy* have *raised odds* of developing UI during pregnancy
 - Brown et al 2010
 - Women *who develop UI during the first pregnancy or puerperium* have a *significantly higher risk of UI 5 years later* than women without UI symptoms
 - Viktrup & Lose 2000



Trinity College Dublin

MRC

Hubs for Trials
Methodology Research

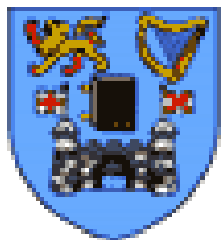
All-Ireland Hub

Key message

Urinary incontinence is not normal and can be treated

Women who have urinary incontinence can become continent

...but the process must start with discussion and enabling disclosure

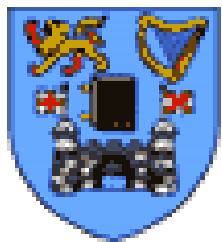


Trinity College Dublin

The MAMMI Study UI Strand

- **Future work**
 - **The MAMMI study** is ongoing
 - Sample size is 1600 (2000 with Galway site)
 - Detailed analyses are required before data are truly understood and statistical significance and associations are ascertained
 - Only then can modifiable factors be identified

<http://www.mammi.ie/>

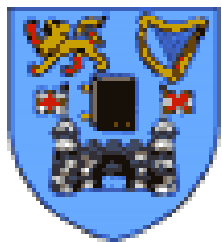


Trinity College Dublin

The MAMMI Study UI Strand

Sincerest thanks to

- **The women** (all women including those who are not taking part but who read the information)
- My colleagues **Margaret Carroll, Deirdre O'Malley, Francesca Wuytack, Sunita Panda, Louise Rafferty**
- **Rebekah Maguire** and **Sophie Clare** who worked with us on the MAMMI study in summer 2012
- The **Health Research Board (HRB)** for funding the MAMMI study (UI) strand
- **Professor Stephanie Brown**, Murdoch Children's Research Institute, Australia for granting permission to use and modify surveys



Trinity College Dublin

The MAMMI Study UI Strand

**Sincerest thanks to my
supervisors**

Professor Cecily Begley

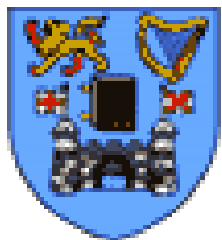
&

Professor Mike Clarke



**Principal
Investigators (PIs)
on the
MAMMI Study**





Trinity College Dublin

The MAMMI Study UI Strand

Thank you

Thanks to the conference organisers and scientific committee for the opportunity to present

<http://www.mammi.ie/>

References and recommended reading

- Abrams, P., Cardozo, L., Fall, M., Griffiths, D., Rosier, P., Ulmsten U Van Kerrebroeck, P., Victor, A., Wein, J. 2002 *The Standardisation of terminology of lower urinary tract infection: report from the standardisation sub-committee of the International Continence Society*. Neurology & Urodyn. 21(12): 167-78.
- Brown, S.J., McDonald, E.A. & Krastev, A.H. (2008) Fear of an intimate partner and women's health in early pregnancy: findings from the Maternal Health Study. *Birth*, **35**(4), 293-302.
- Brown, S.J., Donath, S., MacArthur, C., McDonald, E.A. & Krastev, A.H. (2010) Urinary incontinence in nulliparous women before and during pregnancy: prevalence, incidence, and associated risk factors. *Int Urogynecol J*, **21**(2), 193-202.
- Brown, S.J., Gartland, D., Donath, S. & MacArthur, C. (2011) Effects of prolonged second stage, method of birth, timing of caesarean section and other obstetric risk factors on postnatal urinary incontinence: an Australian nulliparous cohort study. *BJOG*, **118**(8), 991-1000.
- Gartland, D., Donath, S., Macarthur, C. & Brown, S. (2012) The onset, recurrence and associated obstetric risk factors for urinary incontinence in the first 18 months after a first birth: an Australian nulliparous cohort study. *BJOG*, **119**(11), 1361-9.
- MacArthur, C., Glazener, C.M., Wilson, P.D., Lancashire, R.J., Herbison, G.P. & Grant, A.M. (2006) Persistent urinary incontinence and delivery mode history: a six-year longitudinal study. *BJOG*, **113**(2), 218-24.
- MacArthur, C., Glazener, C., Lancashire, R., Herbison, P., Wilson, D. & ProLong Study, G. (2011) Exclusive caesarean section delivery and subsequent urinary and faecal incontinence: a 12-year longitudinal study. *Bjog-an International Journal of Obstetrics and Gynaecology*, **118**(8), 1001-1007.
- Mason, L., Glenn, S., Walton, I. & Hughes, C. (2001) Women's reluctance to seek help for stress incontinence during pregnancy and following childbirth. *Midwifery*, **17**(3), 212-221.
- Schytt, E., Lindmark, G. & Waldenstrom, U. (2004) Symptoms of stress incontinence 1 year after childbirth: prevalence and predictors in a national Swedish sample. *Acta Obstet Gynecol Scand*, **83**(10), 928-936.
- Schytt, E., Lindmark, G. & Waldenstrom, U. (2005) Physical symptoms after childbirth: prevalence and associations with self-rated health. *Bjog-an International Journal of Obstetrics and Gynaecology*, **112**(2), 210-217.
- Viktrup, L. & Lose, G. (2000) Lower urinary tract symptoms 5 years after the first delivery. *Int Urogynecol J Pelvic Floor Dysfunct*, **11**(6), 336-340.