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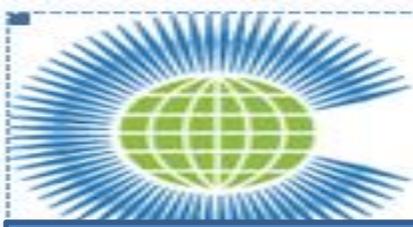
Indwelling urinary catheter use among patients undergoing surgery at one Rwandan referral hospital

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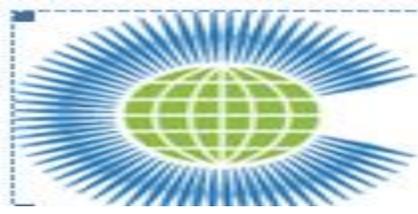
The 4th Commonwealth Nurses and Midwives Conference

Royal College of Physicians, Regent's Park, London, UK
Saturday 10 and Sunday 11 March 2018



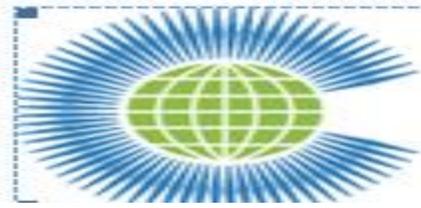
Introduction and background of the study

- Catheter-associated urinary tract infections (CAUTIs) are one of the most challenging health care-associated infections (HCAIs) (1–4).
- Urinary catheters contribute
 - 40% to HCAIs, (3,5,6).
 - 80% to urinary tract infection morbidity among hospitalized patients(7);
 - 48% to antibiotic resistance and sources of epidemics of resistant bacteria in acute care facilities(7),



Introduction and background of the study

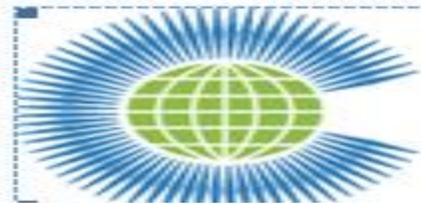
- Up to 86% of operated patients were candidates for routine indwelling urinary catheters (IUC) (8),
- CAUTIs are the 3rd most common post-operative infections,(9).
 - **It should not be used or immediately removed**
- The non-placement and early removal of unnecessary IUCs reduced 17% to 65% of CAUTIs(10),
 - A Very little was known about CAUTIs and IUC use in Rwandan hospitals.



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Aim and Objectives of the study

- **The aim of this study:**
 - To assess the use of indwelling urinary catheters among patients undergoing surgery at Rwandan referral hospital.
- **Specific Objectives:**
 - To determine the prevalence of indwelling urinary catheter use among patients undergoing surgical operation
 - To assess the indications for catheter insertion among patients undergoing surgical operation
 - To assess the removal order of postoperative urinary catheter among patients undergoing surgical operation



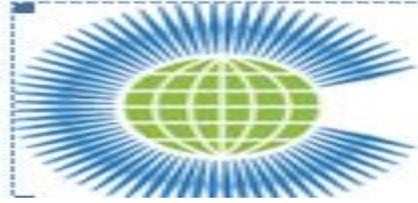
Methods

- A quantitative cross-sectional study was conducted in the operating theatre (OT) of one Rwandan teaching hospital from 1st March to 27th April 2017.
- Two hundred and seven patients admitted to the OT for surgery were recruited.
- The patients admitted with an indwelling urinary catheter in situ that was not inserted for surgical purpose and
- The patients with intermittent catheters which were inserted to empty bladder and removed immediately thereafter were not recruited for this study.



Methods

- Data were collected using an observation checklist adopted from Michigan university catheter out project after getting the consent.
- It was reliable with a Cronbach's alpha coefficient based on standardized items of 0.851.
- Data analysis system of SPSS software version 20 was used to analyze quantitative data by using both descriptive statistics and inferential statistics.
- All ethical principles were respected.



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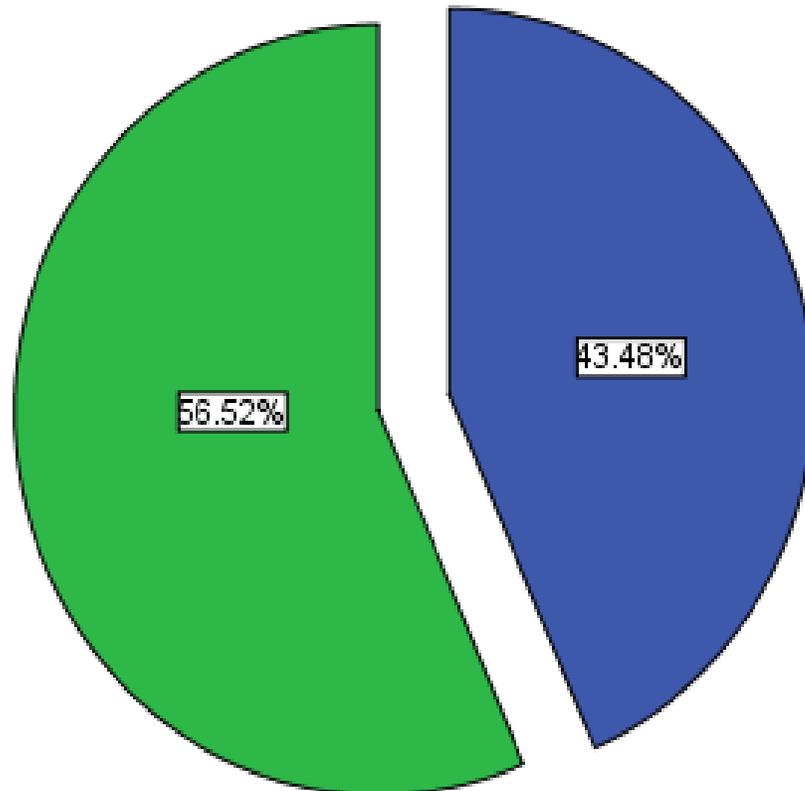
Results

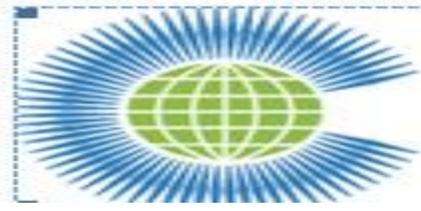
Demographic characteristics of respondents

Variables	Values	Frequencies	Percentages
Age of respondent	<15 years	17	8.2%
	15-25 year	31	15.0%
	26-35 years	83	40.1%
	36-45 years	35	16.9%
	46-56years	13	6.3%
	56years and above	28	13.5%
Sex of respondent	Female	121	58.5%
	Male	86	41.5%
Type of Surgery performed	Urology	6	2.9%
	Obstetric & gyn	65	31.4%
	Orthopedics	34	16.4%
	Laparotomy	35	16.9%
	General	39	18.8%
	ENT	16	7.7%
	Neurology	12	5.8%
	Minor	4	2.5%
Categories of Procedure performed	Major	203	97.5%
	Emergent	119	57.5%
Classification of procedure	Elective	88	42.5%
	Local anesthesia	2	1.0%
Type of anesthesia used	Regional anesthesia	84	40.6%
	General anesthesia	121	58.5%
	Total	207	100%

- Among 207 study participants, 56.5% (N=117) of them were exposed to perioperative IUC.

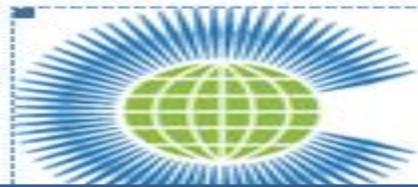
IUC not placed
IUC placed





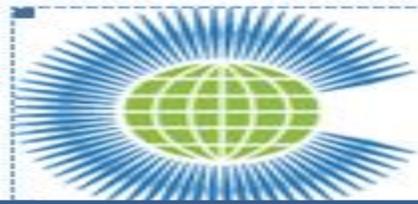
Prevalence of IUC placement

- Predominantly in:
 - Females (74.4%, $p < 0.001$).
 - in 26-35 years old group (55.6%, $P = 0.005$).
- IUC was used as a routine for some surgical procedures.
 - obstetrics and Gynecology surgeries (93.8%, $n = 61$), $P < 0.001$.
 - Laparotomy (85.7%, $n = 30$), $P < 0.001$
 - Emergent procedures (73.1% , $n = 87$), $P < 0.001$
 - Surgeries done under Spinal anesthesia (70.6% , $n = 60$), $P < 0.001$).
- The majority of IUC were placed in operating room (80.3%, $n = 94$).



The indications for IUC insertion

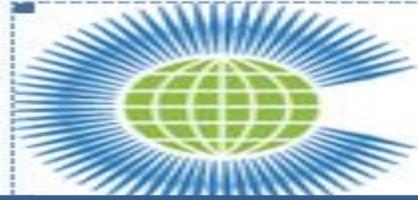
- 95.7% of IUCs were placed for appropriate indications, $p < 0.001$) :
 - ✓ Surgery contiguous to genitourinary track (42.7%, n=50)
 - ✓ emergent surgery with anticipated large fluid resuscitation (19.6%, n=23),
 - ✓ Intraoperative Urine output monitoring (15.3%, n=18)
- 61.5 of them were placed under physician order, $p < 0.001$ (Table 4.8).



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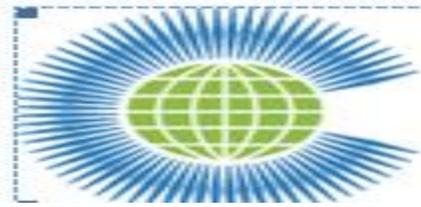
IUC removal and removal instructions

- Before patients left the post anaesthesia care unit
 - only one IUC (0.9%) was removed before the
 - 56.5% of participants with IUC in place did not have documented removal instructions, especially in
 - cases of laparotomy (73.3%),
 - orthopedic surgery (100%),
 - neurologic surgery (100%) and
 - general surgery (100%).



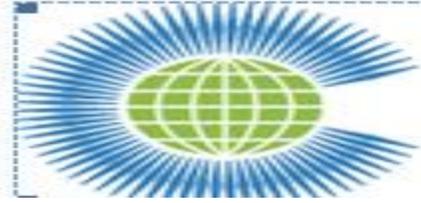
Discussion

- The age and sex of participants ties in closely with the demographics from National Institute of Statistics of Rwanda
- the number of females undergoing surgery was higher than that of males^(8,12,15)
- Rwandan referral hospitals quite often receive category of patients who require major operations and more often referrals.
- Global distribution of surgeries estimated a higher proportion of emergent obstetric surgeries in low income countries, Rwanda included, in relation to caesarean deliveries⁽¹⁶⁾. Similar to EAC⁽¹⁷⁾.
- Used anaesthesia techniques varied depending to types of surgeries and conditions of the patients ^(12,14).



Discussion

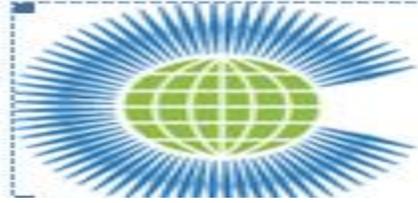
- Prevalence of IUC use was lower than the prevalence revealed by the previous studies (8,11) that were dominated by cardiac surgeries and Higher than that of Brouwer study(12) in which the IUC was placed after assessing the necessity.
- Similar to the previous studies(8,12,13,14) the prevalence IUC use was found statistically significant in relation to the type of surgery, age, category of surgery and anaesthesia technique used and female sex.



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Discussion

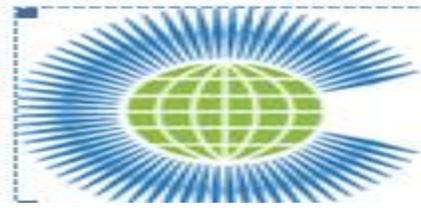
- The immediate removal of IUC after surgery was found to be effective in prevention of postoperative CAUTIs, urethra trauma, voiding related pain and facilitates early ambulation (1,8, 15).



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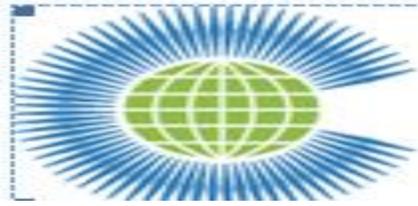
Conclusion

- The study concluded that IUC was routinely used for some procedures.
- The absence of post-operative IUC removal instruction may lead to inappropriate duration of postoperative IUC.



Recommendations

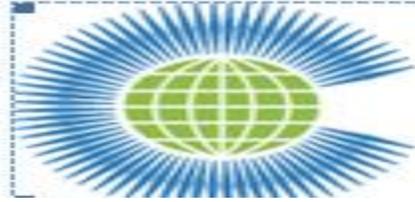
- The study recommended that:
 - The hospital shall conduct a periodic audit of IUC use and CAUTI among surgical patients for surveillance
 - Further research on the duration of postoperative IUC retention and associated factors among patients undergoing surgery.
 - Assessment of the medical condition of patient and the duration of surgery, risk factors for prolonged postoperative IUCs and the feasibilities of IUC alternatives.



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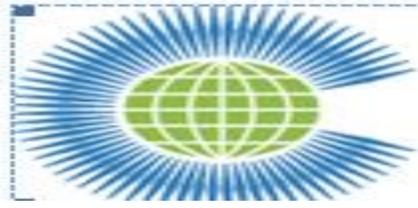
Acknowledgement





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Thank you

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