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Supporting Information

Supplementary methodology, reults, and limitations

This appendix was part of the submitted manuscript and has been peer reviewed.
It is posted as supplied by the authors.

Appendix to: Morgan DJR, Harris T, Gidgup R, Whitely M. Identifying the cultural heritage of patients during clinical handover and in hospital medical records. *Med J Aust* 2019; doi: 10.5694/mja2.12107.

Identifying the cultural heritage of patients during clinical handover and in hospital medical records

1. Methodology: supplementary details

Doctor staffing

- Acute care unit (ACU): is independently staffed by dedicated resident medical officers (RMOs), registrars (both training and service) and consultants.
    - Weekdays: 4 consultants, 4 registrars and 3 RMOs.
    - Nights: 2 consultants, 5 registrars and 2 RMOs.
    - Weekends: 2 consultants, 4 registrars and 2 RMOs.
- Hospital wide: a 783-bed tertiary hospital with an emergency department, general and sub-specialty medical and surgical, obstetric, psychiatric and rehabilitation services, all of which may refer patients to the ACU. The hospital employs approximately 470 junior doctors (residents and registrars) and 630 clinical and academic specialists.

Study inclusions and exclusions

The following conditions were included for this study:

- By acute care unit doctors during clinical handover
    - All verbal references to cultural heritage.
    - All written references to cultural heritage displayed on the patient journey board.
- By ward-based doctors
    - All written references to cultural heritage in the progress medical notes by primary or secondary medical or surgical teams involved in the patients care.
    - All written references to cultural heritage in the patient's final hospital discharge summary.

The following conditions were excluded from this study:

- Patients less than 18 years of age.
- Any reference to cultural heritage included in a governmental or administrational database.
- Patient demographic references pertaining to Australian states, regions or towns of origin or residence.
- Verbal references to cultural heritage occurring outside the ACU clinical handover period.
- Verbal references to cultural heritage made by non-medical staff, and doctors not attached to the ACU.
- Written references to cultural heritage by non-ward-based doctors, including staff other than doctors, operating theatre-based references by anaesthetic, recovery nurses or operation reports.

- Written references to cultural heritage from previous hospitalisations.
- Written references to cultural heritage in hospital transfers to the tertiary hospital involved in this study.
- Written references to cultural heritage in outpatient clinics.

Ethical considerations: covert observation

As the primary aim of this study was to identify the nature and prevalence of a patient's ethnicity, national heritage and / or religion is identified during clinical handover, covert observation was utilised to minimises the Hawthorne effect.[1] The Hawthorne effect is a well-documented consequence whereby subject's being studied alter their behaviour as a direct result of the subject becoming aware that they are being observed. In this study, it was believed that awareness of observation would significantly influence the participant's behaviour. An ethical disadvantage is that the researcher must deceive the group and invade their privacy. Therefore, considerable and careful thought was given to the ethical implications of using covert observation in this study with several measures considered prior to undertaking this study. These included enhanced privacy by not identifying individual staff members, the department or the hospital at which the study was undertaken in the final published manuscript. The departmental setting of the study is deliberately referred to as an 'acute care unit' as the authors believe the daily practices of the study's department reflect that of any acute care medical or surgical unit, coronary care unit, emergency department or an intensive care unit in Western Australia. Secondly, full disclosure of the study and its purposes occurred at the conclusion of the observational period with the opportunity for staff members to provide feedback in a post-observation survey. Finally, full permission to conduct this study was sought and gained from the responsible Human Research Ethics Committees. Collection of data from the integrated hospital electronic medical record was done retrospectively and therefore not subject to the same ethical issues as the clinical handover. The exit question from the Phase 4 staff survey also confirmed that only 5.4% of the doctors were either 'unsettled' or 'not comfortable' with the methodology of this study after receiving a de-briefing letter.

For the purposes of this study, clinical handover was chosen to assess not only for the occurrence but also for the repetition and propagation of cultural heritage variables in a multidisciplinary setting, while the ward-based outcomes permitted for the breadth of cultural identification across an institutional level to be assessed.

Data sources

Parameters regarding a patient's religion, place of birth and Aboriginal status were sourced from the hospital's web-based patient administration system **Webpas** (DXC Technology)**.** The information provided on Webpas is supplied by the patient (or their next-of-kin) at the time of hospital admission. The use of prior identities (especially the unmarried names of married women) was sourced from **iSoft Clinical Manager** (DXC Technology).

Written identification of a patient's religion, ethnicity or national heritage by the doctors was sourced from two separate clinical information systems used within the hospital. The **Metavision** system (iMDsoft) is displayed in a large screen format (electronic patient journey board) during clinical handover and the **BOSSNET** system (CORE Medical Solutions) is used hospital wide by ward-based teams for the communication of doctors, nursing and allied health information.

Definitions: cultural heritage

Ethnicity refers to a 'shared identity or similarity of a group of people on the basis of one or more factors'. National heritage refers to a 'shared geo-political ancestry'. Religion refers to 'a set of beliefs and practices, usually involving acknowledgement of a divine or higher being or power by which people conduct their life both practically and in a moral sense'.

For national heritage and ethnicity, we adapted the nine broad groupings of the Australian Standard Classification of Cultural and Ethnic Groups (ASCCEG) (http://www.abs.gov.au/ausstats/abs@.nsf/mf/1249.0) Based on local demographics, the Western European grouping was further divided into distinct United Kingdom & Ireland and other Western European cohorts while the Oceanian grouping was divided into Aboriginal and Oceanian (Melanesian / Micronesian & Polynesian) groupings. The South East Asian and Far East Asian groupings were combined into one Far and South East Asian grouping giving a total of 10 broad groupings. Religion was assigned according to the seven main denominations assigned by Australian Standard Classification of Religious Groups (http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/1266.0main+features202011) with further division of Christianity into British Protestant, Roman Catholic and remaining Christianity groups to give nine broad denominations.

Definitions: Covariables

Severity of acute illness was assessed using APACHE 3 scores,[2] while chronic health burden was assessed using the Charlson Comorbidity Index.[3] Socio-economics status of place of residence was determined with the Index of Relative Socio-economic Advantage and Disadvantage (IRSAD), one of the Australian Bureau of Statistics' Socio-Economic Indexes for Areas (SEIFA); it is a postcode-based index based on data for several social and economic variables from the 5-yearly Australian national censuses, the most recently available index at the time of the study being for 2011. Using deciles (10% separations) each Australian postcode is ranked with the lowest / most disadvantaged postcodes being allocated a '1' and the most advantaged postcodes being allocated a '10' both within individual states and the country as a whole.[4] Socio-economic comparisons between postcode areas in which Aboriginal patients reside and postcode areas where the remaining cohort reside were based on the mean specific percentages and not deciles. The methodology and resulting indexes have been internally and externally validated.[5]

Statistics: missing data and sample size calculations

Missing data was predominately confined to religious affiliation (3.0%) with all geographical ethnic-national groupings being accounted for and all patient files available. Where a patient's cultural heritage was incorrectly identified, patients were analysed according to their most appropriate heritage (see **Results: supplementary details, Phase 2 – Additional observations**).

Sample size calculations were based on being able to detect a 30% absolute difference (40% vs 10%) between the Aboriginal and the other main groupings. Accepting a 95% confidence interval and 80% power meant a minimum 29 patients per grouping. Based on the 2011 Western Australian census data, 37.9% of Western Australians were born overseas and 3.7%. were Aboriginal. Estimating 4% of the ACU population to be either Aboriginal, Western European, Eastern European or Asian, and allowing for 25% discrepancy in regional population variations meant a minimum 1000 patients.[6]

2. Methodology: research project debriefing statement

Dear Colleague

After obtaining the appropriate ethics approvals, a group of interested investigators have just completed a purely observational study in our unit over the past 12 months.

This study has centred around the chief investigator (**XXXX**) observing one single aspect at either the 08:00 or 20:00 unit clinical handover while he was rostered on duty. The purpose has been to record whether a patient's national heritage, ethnicity or religion was either mentioned verbally or documented in the electronic handover tool during the clinical handover period and whether any rationale was given as to the medical relevance of including this data in clinical handover. Data points were strictly limited to whether a patient' ethnicity, national heritage or religion was mentioned (yes or no), what the patient' ethnicity, national heritage or religion was, and whether any rationale was provided as to the inclusion of such information in the clinical handover. The aim of this study is to observe whether any particular ethnicity, national heritage or religion is stated more frequently than others and to explore possible reasons for this occurrence and whether the practice is relevant to clinical handover.

After careful deliberation, the investigators believe that it would be impossible to accurately conduct such a study with prior participant informed consent because this would lead to a significant **Hawthorne effect** (individuals modify or improve an aspect of their behaviour in response to their awareness of being observed). To try and obtain unbiased and natural responses, we had to conceal information at the beginning of the study. This methodology is similar to the widespread practice within the hospital of hand washing surveys. The investigators acknowledge that this study therefore involved a degree of participant deception in order to collect the most accurate data. We seek to explain our rationale and re-assure you that as many safe guards have been added to minimise participant concerns.

The investigators have undertaken a series of considered steps to try and minimise the risk to all participants involved.

Privacy: In order to maximise privacy, the identification of individuals undertaking the written or verbal clinical handover has never been recorded, nor has the identification of the group of individuals at each handover been recorded. We hope to provide further privacy by referring to the setting of the study as an 'acute care unit with twice daily clinical handover in a tertiary hospital' with the chief investigator's affiliation being list as **XXXX**MHS rather than using the hospital name in any written manuscript. Given that clinical handover is most commonly undertaken by professionally mobile junior doctors, it is most likely that many of the participating doctors will have moved to another department or hospital by the time any manuscript is published. We further hope to maximise privacy by only collecting a minimum data set during the formal clinical handover period with **all** other conversations excluded from this study.

Confidentiality: all the information involving the healthcare providers will be stored as non-re-identifiable data (i.e. even the investigators will be completely unable to determine who was present on any given clinical handover date nor who gave an individual handover). This data will be stored in a password encrypted computer with only the investigators undertaking the data analysis having access to the data sets.

Investigators' Message: regardless of the outcomes, the investigators believe that any result should be discussed and delivered as a positive message. Where no difference exists, we will seek to re-assure participants as to their current communication practices at clinical handover. Should a difference exist then the investigators believe this will provide an opportunity for explore possible reasons and promote a mutually respectful method of cultural and religious recognition. The aim is not to investigate whether this is a 'bad' practice but rather a 'relevant' clinical practice.

Given our deliberate strategy not to record the identity of the individuals present in clinical handover it is impractical and unfeasible to withdraw any data collected in this study.

The investigators have spent over 12 months in the planning and consultation process when developing the methodology for this study. In particular, we aimed to minimise as-much-as-possible predicted participant concerns. We understand that there will still be questions from some participants and would be only too happy to either receive feedback or have specific concerns raised. For further information please contact **XXXX** (XXXX@health.wa.gov.au). If you have any questions regarding your treatment or your rights as a participant in this research project, please contact either Human Research Ethics and Governance at **XXXX** Metropolitan Health Service (**XXXX** MHS.REG@health.wa.gov.au).

Voluntary Survey: accompanying this debrief is a voluntary survey where the investigators are seeking further information about participant views on this subject. At the end of the survey we are also seeking further participant feedback about the research methodology.

Final Report: the investigators would like to make available a report of this study (or a summary of the findings) when it is completed. If you are interested, please contact the chief investigator **XXXX** (**XXXX**@health.wa.gov.au).

The investigators are deeply appreciative of your participation in this study. You may keep this debriefing form for your future reference.

Sincerely

David Morgan (chief investigator) on behalf of **Tania Harris** (co-investigator), **Ron Gidgup** (co-investigator) and **Martin Whitely** (co-investigator)

3. Results: supplementary details

Phases 1 & 2: ethnicity

Individual patient ethnicity was infrequently mentioned during ACU clinical handover with only 84 (written + verbal) recorded identifications in 2727 separate clinical patient handovers **(Box 3)**. The identification of Aboriginal patients was significantly more common than the remaining cohort accounting for 75 of 84 ethic identifications (rate=370 identifications per 1000 handovers, 95%CI 293–460) in clinical handover with 46% (34 of 74) of all Aboriginal patients being ethnically identified on at least one occasion during clinical handover **(Box 2)**. This equated to an unadjusted OR=199 (95%CI, 67.6–590; *P*<0.001) for an Aboriginal patient to have their ethnicity identified in an ACU clinical handover compared to the remaining cohort.

The written hospital EMR identification of a patient's ethnicity by ward-based doctors similarly identified Aboriginal patients (49 of 74 Aboriginal patients; rate=176 [95%CI, 152–203] identifications per 1000 pages of EMR) significantly more often than all other ethnicities **(Boxes 2, 3, 5)**. This equated to an unadjusted OR=77.8 (95%CI, 41.5–146; *P*<0.001) for an Aboriginal patient to have their ethnicity identified in the integrated hospital EMR compared to the remaining cohort.

Phases 1 & 2: nationality

Individual patient national heritage was identified less frequently than patient ethnicity during clinical handover in the ACU with only 41 (written + verbal) recorded identifications in 2727 patient handovers **(see Box 3)**. Identification of Far-East and South-East Asian nationalities was the most common comprising 15 of 100 (150 identifications per 1000 handovers, 95%CI 87.2–241.9) identified national identities in clinical handovers with 28% (11 of 40) **(see Box 2)** of all Far-East and South-East Asian patients being identified on at least one occasion during ACU clinical handover. This equated to an unadjusted OR=16.4 (95%CI, 6.8–40; *P*<0.001) for a Far and South-East Asian patient to have their nationality identified in clinical handover compared to the remaining cohort.

The identification of a patient's nationality by ward-based doctors in the integrated hospital EMR was again more common with Far-East and South-East Asian patients (18%, 7 of 40 patients) being identified more often than all other nationality. This equated to an unadjusted OR=7.8 (95%CI, 3.2–19; *P*<0.001) for a Far-East and South-East Asian patient to have their nationality identified in the integrated hospital EMR compared to the remaining cohort **(see Boxes 2, 5)**.

Phases 2: additional observations

Additional observations of interest included that all ACU clinical handover identifications of Caucasian nationalities were only ever verbal and predominately (6 out of 7) occurred at the end of the clinical handover as compared to Aboriginal and Far & South East Asian

identifications that invariably occurred in the opening sentence of handover. Furthermore, 5 of 97 patients identified for ethnicity (3 incorrectly identified as Aboriginal) and 4 of 49 patients identified for nationality were identified incorrectly. In each incorrectly identified nationality the patient was still identified from the correct geographic region.

Phases 1 & 2: Aboriginal **patient-specific analyses**

Aboriginal and non-Aboriginal patients had similar severity of acute illness (mean APACHE III score, 60.2 [SD, 28.1] *v* 59.7 [SD, 28.5]; *P* = 0.88), but Aboriginal patients had statistically higher chronic comorbidity scores (mean Charlson Comorbidity Index score, 2.57 [SD, 2.29] *v* 1.96 [SD, 1.87]; *P* = 0.009).

Phase 3: Hawthorne effect

In a retrospective analysis of 200 separate patients admitted through the ACU on dates prior to the commencement of Phase 1, written ethnic–national identification rates were not statistically significantly different from phase 1: the proportions of ACU patients with at least one electronic journey board identification (phase 3, 4.5% *v* phase 1, 2.6%, *P* = 0.16) and the subsequent rate of written identifications by the ward-based doctors (phase 3, 31.1 *v* phase 2, 25.9 identifications per 1000 pages of EMR; difference, 5.2 [95% CI, –3.0 to 13.3] identifications per 1000 pages of EMR; *P* = 0.19). Prior to the completion of Phase 1, no investigator was approached by a doctor of the ACU or ward-based medical staff participants about the study.

Phase 4: post-study survey

Please see **section 4 (Results: the acute care unit doctor survey)**.

Table 1. The incidence at which a patient's religious affiliation was identified by doctors during scheduled, twice daily, multidisciplinary, clinical handovers in an ACU of a tertiary hospital

Religious grouping	Number of patients	Number of ACU handovers	Number of patients identified	Religion: written identification*	Religion: verbal identification	Religion: total identifications
British Protestant†	221	594	0	0	0	0
Catholic	216	591	0	0	0	0
Jehovah's Witness	9	15	6	8	9	17
Other Christian based beliefs‡	112	288	0	0	0	0
Muslim	14	34	0	0	0	0
Hindu	10	20	0	0	0	0
Buddhist	10	23	0	0	0	0
Other religious beliefs§	2	2	0	0	0	0
Secular and spiritual beliefs¶	5	15	0	0	0	0
Atheist	5	11	0	0	0	0
No religion	383	1064	0	0	0	0
Unknown or missing	31	70	NA	NA	NA	NA
Total	1018	2727	6	8	9	17

ACU=acute care unit; NA=not applicable

***** As displayed on a regularly updated electronic patient journey board used during clinical handover. † Includes Anglican, Methodist, Presbyterian and Uniting denominations. ‡ Includes Greek, Serbian and Russian Orthodox, Lutheran, Quaker, Apostolic, Pentecostal, Salvation Army, Baptist, Seventh Day Adventist, Church of Christ, Peoples Church, Assembly of God, Mormon and other Christian denominations. § Includes Sikhism and the Bahai faith. ¶ Includes Indigenous and spiritualist beliefs.

4. Results: the acute care unit doctors' survey

Conducted without the respondents having prior knowledge of the study findings.

Question 1 - What is/was your most senior position while working in the department?

• Resident medical officer	[Total 87 RMOs in 2016-17]	34 (45%)
• Registrar (not in training)	[Total 41 Registrars in 2016-17]	10 (13%)
• Registrar (in training)		5 (7%)
• Senior registrar	[Total 23 Senior registrars in 2016-17]	14 (19%)
• Consultant	[Total 18 Consultants in 2016-17]	12 (16%)
All doctors working in ACU between 2016-17. Where a doctor has worked in more than one position only the higher appointment is counted.		

Question 2 - How old are you?

• Less than 30 years old	34 (45%)
• 30 to 39 years old	27 (36%)
• 40 to 49 years old	9 (12%)
• Greater than 50 years old	5 (7%)

Question 3 - What is your sex?

• Female	32 (43%)
• Male	43 (57%)

Question 4 – Where were you born?

• Australia	29 (39%)
• New Zealand or Oceania	2 (3%)
• United Kingdom or Ireland	16 (21%)
• Western Europe (European countries not mentioned below)	4 (5%)
• Middle East, North Africa (Egypt, Tunisia, Libya, Algeria, Morocco, Turkey, Israel or Iran)	1 (1%)
• The Subcontinent (Afghanistan, Pakistan, India, Nepal, or Bangladesh)	7 (9%)
• Central, South-East or Far-East Asia (includes former Soviet Central Asian Countries)	14 (19%)
• Sub-Saharan Africa (excludes Egypt, Tunisia, Libya, Algeria, Morocco)	2 (3%)

Question 5 - Which of the following regional groups best incorporates your ethnicity or cultural heritage (ethnicity is defined as a social group that shares a common and distinctive cultural, religious, and language similarities)?

• Anglo-Celtic-Gaelic (British and/or Irish)	31 (41%)
• European (other than British and/or Irish)	8 (11%)
• Arabic or Persian (Middle East, North Africa and Iran)	3 (4%)
• The Subcontinent	9 (12%)
• Central, South-East or Far-East Asia	13 (17%)
• Mixed heritage	9 (12%)
• I would prefer not to answer	2 (3%)

Question 6 – Where was your primary medical degree conducted?

• Australia	49 (65%)
• New Zealand	2 (3%)
• United Kingdom or Ireland	15 (20%)
• Continental Europe	3 (4%)
• The Subcontinent	3 (4%)
• Central, South-East or Far-East Asia	2 (3%)
• Sub-Saharan Africa	1 (1%)
• The Americas	0

Question 7 - Have you ever worked as a doctor in rural or remote Australia for more than 6 months in total? (i.e. Greater than 150km by road from Canberra, Townsville, Brisbane & The Gold Coast, Newcastle, Sydney, Wollongong, Melbourne, Geelong, Hobart, Launceston, Adelaide and Perth)

• Yes	20 (27%)
• No	55 (73%)
Towns listed – Albany (WA), Balgo (WA), Bunbury (WA), Broome (WA), Cairns (QLD), Derby (WA), Darwin (NT), Echuca (VIC), Gladstone (QLD), Goulburn (NSW), Kalgoorlie (WA), Kununurra (WA), Narrogin (WA), Port Hedland (WA), Rockhampton (QLD), Warragul (VIC), Sale (VIC), Traralgon (VIC).	

Question 8 - Have you ever worked as a doctor outside of Australia for more than 6 months in total?

• Yes	31 (41%)
• No	44 (59%)
Countries listed – Belgium, England, Germany, India, Ireland, Myanmar, New Zealand, Scotland, South Africa, Tanzania, United Kingdom, United States of America.	

Question 9 – Is there ever a role for mentioning a patient's <u>NATIONALITY, NATIONAL HERITAGE OR COUNTRY-OF-BIRTH</u> at clinical handover or in the clinical record?

• Yes	72 (96%)
• No	3 (4%)

Question 10 - Is there ever a role for mentioning a patient's <u>ETHNICITY</u> at clinical handover or in the clinical record? (ethnicity is defined as a social group that shares a common and distinctive cultural, religious, and language similarities)

• Yes	75 (100%)
• No	0

Question 11 - Is there ever a role for mentioning a patient's <u>RELIGION</u> at clinical handover or in the clinical record?

• Yes	65 (87%)
• No	10 (13%)

Question 12 – During a clinical handover, or when writing clinical notes, how often do <u>YOU</u> personally....?

	Never	Occasionally (< 25%)	Regularly (25 – 75%)	Often (> 75%)	Always
Mention a patient's nationality / country of birth?	10 (13%)	60 (80%)	5 (7%)	0	0
Mention a patient's ethnicity?	3 (4%)	60 (80%)	12 (16%)	0	0)
Mention a patient's religion?	16 (21%)	57 (76%)	2 (3%)	0	0

Question 13 - During a clinical handover, or when reading written clinical notes how often do you think <u>OTHER</u> doctors (as a whole community)?

	Never	Occasionally (< 25%)	Regularly (25 – 75%)	Often (> 75%)	Always
Mention a patient's nationality / country of birth?	2 (3%)	64 (85%)	9 (12%)	0	0
Mention a patient's ethnicity?	1 (1%)	56 (75%)	17 (23%)	0	0
Mention a patient's religion?	8 (11%)	65 (87%)	2 (3%)	0)	0

Question 14 - Under what circumstance do YOU think it may be appropriate to mention a person's NATIONALITY, NATIONAL HERITAGE or COUNTRY-OF-BIRTH during clinical handover or in the clinical record? (Can choose more than one answer)

• When there may be a language barrier	75 (100%)
• When there may be repatriation issues (i.e. the patient is a foreign tourist)	68 (91%)
• When there is an increased risk of a medical condition (e.g. thalassaemia)	66 (88%)
• When there may be cultural issues	68 (91%)
• When there may be ritual reasons (as a patient approaches death)	61 (81%)
• There are no circumstances where I would mention a patient's nationality, national heritage or country-of-birth	1 (1%)

Question 15 - Do YOU believe that any NATIONALITY, NATIONAL HERITAGE or COUNTRY-OF-BIRTH is mentioned more frequently than others by the DOCTORS at clinical handover or in the clinical record?

• Yes	5 (7%)
• No	70 (93%)
Nationalities listed – African countries, Italians, Greeks, Chinese, Continental Europeans.	

Question 16 - Why do YOU believe that ONE PARTICULAR NATIONALITY, NATIONAL HERITAGE or COUNTRY-OF-BIRTH is mentioned by the DOCTORS more often during clinical handover or in the clinical record? (Can choose more than one answer)

• Too few responses based on Question 16 answers.

Question 17 - Under what circumstance do YOU think it may be appropriate to mention a person's ETHNICITY during clinical handover or in the clinical record? (Can choose more than one answer)

• When there may be a language barrier	63 (84%)
• When there is an affiliated medical condition (e.g. sickle cell disease in black sub-Saharan Africans)	66 (88%)
• When there may be repatriation issues (i.e. the patient is a foreign tourist)	51 (68%)
• When there may be cultural issues	65 (80%)
• As a patient approaches death (e.g. for ritual reasons)	60 (80%)
• There are no circumstances where I would • mention a patient's ethnicity	3 (4%)

Question 18 - Do <u>YOU</u> believe that any <u>ONE PARTICULAR ETHNIC GROUP</u> is mentioned more frequently than others by the DOCTORS at clinical handover or in the clinical record?

• Yes	44 (59%)
• No	31 (41%)
Ethnicities listed – Aboriginal Australians (44 times), Asian (1 time), African (1 time).	

Question 19 - Why do <u>YOU</u> believe that <u>ONE PARTICULAR ETHNICITY</u> is mentioned more often by the DOCTORS during clinical handover or in the clinical record? (Can choose more than one answer)

• I do not believe that any one ethnicity is mentioned more often	31 (41%)
• Because it was the method I was taught at university	9 (12%)
• Because of an increased frequency of language barriers	11 (15%)
• Because of an increased frequency of important cultural variations	32 (43%)
• Because of an increased association with particular diseases (e.g. sickle cell disease in black sub-Saharan Africans)	28 (37%)
• Because it directly aids in the patient's medical care	13 (17%)
• It allows for the linking of additional supportive services for the patient	35 (47%)
• Because of government requirements to identify the ethnicity of certain patients in databases	8 (11%)
• Because the patients are possibly being stereotyped (defined as: a commonly held idea about a particular group of people)	29 (39%)
• Because of a possible clinician's implicit biases (defined as: a bias in judgment and/or behaviour that results from subtle cognitive processes that often operates at a level below conscious awareness)	27 (36%)
• Because of possible explicit bias (defined as: a self-reported or self-aware bias in judgement and/or behaviour that are known to the individual)	15 (20%)
When responses to stereotyping, implicit and explicit bias are combined then a total 35 (47%) of respondents believed there a degree of bias behind the identification of Aboriginal patients. When restricted to the 44 respondents who answered that one particular group was identified more commonly, then 35 (80%) believed there was either stereotyping, implicit or explicit bias and 32 (73%) believed identification was important to recognise cultural variations.	

Question 20 - Under what circumstance do <u>YOU</u> think it may be appropriate to mention a person's <u>RELIGION</u> during clinical handover or in the clinical record? (Can choose more than one answer)

• There are no circumstances where I would mention a patient's religion during medical handover or in the medical record?	2 (3%)
• When there are possible restrictions on treatments (e.g. blood transfusions)	72 (97%)
• When there may be restrictions on who can examine the patient (e.g. female doctor can only examine female patient)	56 (75%)
• When there may be specific end-of-life rituals	57 (76%)

Question 21 - Do <u>YOU</u> believe that any <u>ONE PARTICULAR RELIGION</u> is mentioned more frequently than others by the DOCTORS at medical handover or in the medical record?

• Yes	53 (71%)
• No	22 (29%)
Religions listed – Jehovah's Witness (52 times), Islam (2 times), Judaism (1 time).	

Question 22 - Why do <u>YOU</u> believe that <u>ONE PARTICULAR RELIGION</u> is mentioned more often by the DOCTORS during clinical handover or in the clinical record? (Can choose more than one answer)

• I do not believe that any one religion is mentioned more often	18 (24%)
• Because it was the method I was taught at university	3 (4%)
• Because it directly impacts the patient's medical management	50 (67%)
• Because there is an association with particular diseases	1 (1%)
• Because of an increased frequency in cultural/religious variations	13 (17%)
• Because it allows the linking of the patient to religious supports	4 (5%)
• Because the patients are possibly being stereotyped (defined as: a commonly held idea about a particular group of people that may be either positive, neutral or negative in connotation)	8 (11%)
• Because of possible implicit bias (defined as: a bias in judgement and/or behaviour that results from subtle cognitive processes that often operates at a level below conscious awareness)	3 (4%)
• Because of possible explicit bias (defined as: a self-reported or self-aware bias in judgement and/or behaviour that are known to the individual)	5 (7%)

Question 23 - When a patient's nationality, ethnicity or religion is mentioned at clinical handover or in the clinical records, should this be justified with a brief explanation?

• Yes	26 (35%)
• No	49 (65%)

Question 24 - Is there a role for cultural safety training for doctors? Defined as 'the ability of providers and organizations to effectively deliver health care services that meet the social, cultural, and linguistic needs of patients'. (Can choose more than one answer)

• No - cultural safety training is not relevant	5 (7%)
• Yes - but it should be taught at an undergraduate level	50 (67%)
• Yes - it should be taught at a post graduate level	35 (47%)
• Yes - it should be part of orientation training	34 (45%)
• Yes - it should be incorporated into specialty training	27 (36%)
If all "yes" responses are added, then 70 (93%) respondents felt there was role for cultural safety training in healthcare.	

Question 25 - Is the current Western Australian Department of Health cultural safety training adequate?

Yes	35 (47%)
No	40 (53%)

Question 26 - How agreeable are you to the methodology of using covert (without prior consent) observation in this study given that -> no single participant, the department nor the hospital will be identified in any publication; that full disclosure occurred at the end of the study; and that prior undisclosed covert audits have been previously undertaken in the department (choose one answer only)?

• Not at all comfortable with the methodology	2 (3%)
• Unsettled with the methodology	2 (3%)
• Ambivalent about the methodology	19 (25%)
• Satisfied with the methodology	18 (24%)
• Completely comfortable with the methodology	33 (44%)

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5. Limitations: supplementary details

Assignment of ethnicity

The allocation of ethnicity is a complex subject. Essentially the assignment of ethnicity can be either self-identified or socially-assigned (by someone other than the person being assigned, usually a community) with both elements being required in most ethic definitions.

Self-identification is the preferred method but far from ideal. In one American study using linked internal Census Bureau data from the 2000 and 2010 censuses approximately 9.8 million people (~6%) recorded a different race and/or origin response in 2010 than they did in 2000. Several ethnic groups experienced considerable fluidity in racial identification (https://www.census.gov/srd/carra/Americas_Churning_Races.pdf). Between the 2006 and 2011 censuses the self-identification of Australian Aboriginal or Torres Strait Island people increased by 18.7%, well above the Western Australian growth rate suggesting changing self-identification practices (http://www.abs.gov.au/websitedbs/censushome.nsf/home/wa-58?opendocument&navpos=620). Our research relied on the self-identification of Aboriginal ancestry supplied to the Webpas clinical information system at patient admission.

Social-assignment, while having obvious limitations, has been previously shown to be accurate in at least two separate medical studies. The first, an Israeli study used a similar method proposed in our study (surname and country-of-birth) and showed a high degree of accuracy (Kappa score = 0.96) in differentiating between two separate ethnicities in hospital setting.[7] In a second Canadian study rating inter-observer reliability on several ICU parameters, there was strong agreement (Kappa score 0.81) on race, well above several other variables such as Glasgow Coma Score and chronic health comorbidities.[8] Furthermore, it is social-assignment that is often used when recording the Aboriginal status on separate hospital department designed data collection sheets or when ethnicity is mentioned/recorded in clinical handover.

The investigators acknowledged the limitations on both methods and given their shortcoming believe the social-assignment method for non-Aboriginal patients is reasonably accurate, and less intrusive and confronting to patients for what is an observational study.

6. Supplementary references

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