

all had possible epidemiological links with case 5. **Results:** Our root-cause analysis suggests that the index case came from another general hospital. However, because no screening protocol has been established for *Candida auris*, interventions have not been in place to effectively prevent and control this organism. A strong collaborative outbreak team worked to end this outbreak using the following evidence-based IPC interventions: (1) patient screening and decolonization; (2) environmental screening; (3) enhanced environmental disinfection using peracetic acid wipes, 1% chlorine, and hydrogen peroxide vapor disinfection; (4) prophylactic contact precautions; (5) enhanced hand hygiene with bare below elbows protocol; and (6) a “no white gown” policy. **Conclusions:** The outbreak of *Candida auris* was declared to have been terminated on August 22, 2019. Despite the long period involved in this outbreak, we succeeded in ending it through the concerted efforts of a multidisciplinary team utilizing the latest scientific evidence.

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Poster Presentation

First-Time Use of Clinical Pharmacists to Improve Appropriate Antibiotic Prescribing in a Medical ICU in Viet Nam

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Background: Antibiotic overuse has led to increasing rates of antibiotic resistant infections and unnecessary antibiotic costs. Clinical pharmacists can play a key role in optimizing appropriate use of antimicrobials and reducing antimicrobial resistance. However, the role of clinical pharmacists in antimicrobial stewardship is new and not well established in Viet Nam. **Objective:** We evaluated the use of clinical pharmacists for improved antimicrobial prescribing. **Methods:** We assembled an antibiotic stewardship program (ASP) team consisting of a clinical pharmacist and a specialist in infection prevention and control in a 60-bed medical intensive care unit (MICU) at Hue Central Hospital in central Viet Nam. During January–September 2018, the ASP team collected baseline antibiotic prescribing days of therapy (DOT) for all antibiotics administered in the MICU. Then, from October 2018 through June 2019, the ASP team reviewed daily positive clinical bacterial cultures and susceptibility results for all patients present in the MICU. They reviewed medical charts, including antimicrobial prescriptions, during week days and only if patient was still in the ICU at the time of ASP rounds. The team recommended

changes to antibiotic therapy verbally to physicians and left the decision to change antibiotic therapy to their discretion. The ASP team documented whether their recommendations were accepted or rejected. Statistical significance was determined using the Student *t* test. **Results:** The ASP team reviewed 160 medical charts and made 169 ASP recommendations: 122 (72%) to continue current treatment; 24 (14%) to monitor drug levels or obtain diagnostic tests; 10 (6%) to discontinue therapy; 6 (4%) to de-escalate therapy; 5 (3%) to adjust doses; and 2 (1%) to broaden therapy. Only 8 of the recommended changes (5%) were declined by the clinicians. The average monthly DOT for all types of antibiotics declined significantly from 2,213 to 1,681 (24% decrease; $P = .04$). Reductions in DOT for the most common broad-spectrum antibiotics included colistin from 303 to 276 ($P = .75$); imipenem-cilastatin 434 to 248 ($P = .06$); doripenem 150 to 144 ($P = .85$). Piperacillin-tazobactam increased from 122 to 142 ($P = 0.75$). **Conclusions:** We demonstrated that daily review of cultures and antibiotic use decreased overall antibiotic prescribing. Given that few recommendations included discontinuation of therapy, ASP rounds likely raised awareness for clinicians to optimize antibiotic use.

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Friend or Foe: Perceptions of Infectious Disease Specialists as Stewards and Social Determinants of Antimicrobial Prescribing

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Background: Inappropriate prescribing behavior can be associated with higher rates of antibiotic resistance, calling for detailed studies on how physicians make prescribing decisions. We conducted a mixed-methods study to investigate physician antibiotic prescribing behavior in a 141-bed pediatric hospital. **Methods:** We applied a mixed-methods research design. The quantitative phase was conducted over a 6-month period to identify cases of inappropriate prescribing. The qualitative phase comprised 22 qualitative interviews with clinical teaching units (CTU) and pediatric intensive care unit (PICU) team members (physicians and pharmacists). Two coders analyzed the data deductively using the theoretical domain framework (TDF), as well as the social determinants of antimicrobial prescribing (SDAP). **Results:** In 52.9% of the 36 identified cases in the CTU and 31.4% of the 37 cases in the PICU, an infectious diseases (ID) consultation occurred. Compliance rates with ID recommendations were 79% and 91% in the CTU and PICU, respectively. The CTU and PICU expressed appreciation for ID involvement when ID supported their de-escalation choices in complex cases and in cases in which less commonly known antibiotics were used. However, the ID service involvement was perceived as

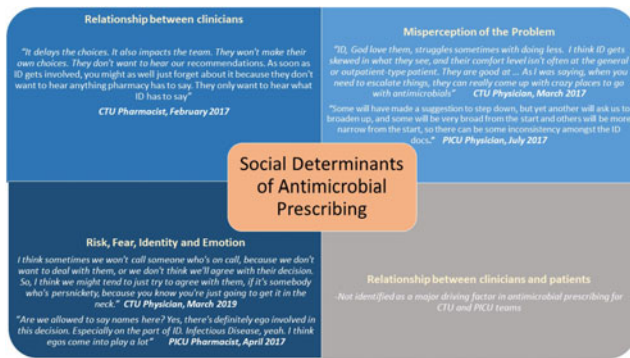


Fig. 1.

detrimental to antimicrobial prescribing decisions for CTU and PICU across 3 of the 4 SDAP domains (Fig. 1, qualitative research quotes). *Relationship between clinicians*: CTU physicians and pharmacists perceived ID involvement as negatively impacting the relationship of the team. Antimicrobial decisions were automatically defaulted to ID, whereas pharmacy involvement was disregarded and the decisions were delayed. *Risk, fear, and emotion*: These were experienced across all respondents' groups that identified ID specialists' egos and personalities as contrary to open collaborative discussion on antimicrobial decisions. *(Mis)perception of the problem*: ID physicians were identified as more conservative in their antimicrobial choices, leading to prolonged duration of treatment, broader choices, and longer hospitalizations. The CTU and pharmacy respondents felt that ID recommendations were inconsistent among physicians and deviated from guidelines with little justification. **Conclusions**: Although CTU and PICU teams tend to comply with ID prescribing recommendations and ID involvement with complicated cases, pharmacists, CTU physicians, and PICU physicians perceived ID consultations to negatively affect collaborative efforts for stewardship. These findings offer novel insights into how an ID service can improve its role to positively affect appropriate prescribing. CTU and PICU respondents called for a supportive and trusting relationship with the ID service as a major driver for behavioral change and enhanced stewardship.

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From Little Things Big Things Grow: The Development of an Auditing Program to Assess the Quality of Antimicrobial Prescribing

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Background: An important aspect of antimicrobial stewardship is the qualitative assessment of antimicrobial prescribing. Owing to lack of standardized tools and resources required to design,

conduct and analyze qualitative audits, these assessments are rarely performed. **Objective**: We designed an audit tool that was appropriate for all Australian hospital types, suited to local user requirements and including an assessment of the appropriateness of antimicrobial prescribing. **Methods**: In 2011, a pilot survey was conducted in 32 Australian hospitals to assess the usability and generalizability of a qualitative audit tool. The tool was revised to reflect the respondents' feedback. A second study was performed in 2012 in 85 hospitals. In 2013, following further feedback and refinement, an online auditing tool, the Hospital National Antimicrobial Prescribing Survey (NAPS), was developed. Early audits demonstrated that surgical prophylaxis had the highest rates of inappropriate prescribing. In 2016, the Surgical NAPS was developed to further investigate reasons for this, and the NAPS program was further expanded to audit antimicrobial prescribing practices in Australian aged-care homes (ie, the Aged Care NAPS). **Results**: Between January 1, 2013, and November 12, 2019, 523 Australian public and private hospitals (53.8%) utilized the Hospital NAPS; 215 (22.1%) have utilized the Surgical NAPS; and 774 of Australian aged-care homes (29.0%) have utilized the Aged Care NAPS. National reporting has identified key target areas for quality improvement initiatives at both local and national levels. The following initiatives have been outlined in 14 public reports: improved documentation; prolonged antimicrobial prophylaxis; compliance with prescribing guidelines; appropriateness of prescribing; access to evidence-based guidelines; and improved microbiology sampling. **Conclusions**: By utilizing the Plan-Do-Study-Act cycle for healthcare improvement and by involving end users in the design and evaluation, we have created a practical and relevant auditing program to assess both quantitative and qualitative aspects of antimicrobial prescribing in a wide range of settings. This voluntary program is now endorsed by the National Strategy for Antimicrobial Resistance Surveillance, partners with the Antimicrobial Use and Resistance in Australian Surveillance System, and is utilized by facilities to meet mandatory national accreditation standard requirements. With the success of the NAPS program in Australia, it has now been implemented in New Zealand, Canada, Malaysia, Fiji, and Bhutan, with plans for other countries to implement the program soon. Current research is being conducted to expand the program to include audits for family physicians, veterinarians, and remote indigenous communities, and for antifungal use.

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Genomic analysis of *Clostridioides difficile* in two regions reveals a diversity of strains and limited transmission

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