intensive care unit (NICU), to facilitate the procedure of MV and enhance the ventilator-patient synchrony, in addition to pain relief.

Purpose To perform a cost-effectiveness analysis of morphine versus fentanyl in agitated neonates with RDS undergoing MV in the NICU setting.

Material and methods A retrospective cost-effectiveness analysis of critically ill neonates with RDS receiving morphine versus fentanyl at a Women's Wellness and Research Centre. The clinical data of neonates were extracted from the medical records of patients within the 2014–2016 period. A decision analytic model, from the hospital perspective, was constructed to follow the possible consequences of sedation. The primary endpoints were the successful drug sedation rate, based on the Premature Infant Pain Profile (PIPP) scoring scale, and the overall direct medical cost of therapy of managing acute agitation in the neonates. A study population size of 124 neonates was calculated to achieve results with 80% power and P0.05 significance. Sensitivity analyses were conducted to enhance the robustness of conclusions against input uncertainties, and increase the generalisability of results.

Results All baseline demographic characteristics were not significantly different between both groups. A multivariate analysis of covariance model demonstrated that the statistical difference between morphine and fentanyl did not statistically change after accounting for baseline differences of values of PIPP scores, birthweight and gestational age (P-value=1.00). Morphine achieved a sedation success of 68%, versus 43% with fentanyl, risk ratio 1.72, 95% CI 1.16 to 2.56, P-value=0.0075. Morphine was associated with a minimal incremental cost-effectiveness ratio of $135 per additional case of sedation over fentanyl. Based on uncertainty analyses, however, this higher morphine cost was reported in only 2% of patient cases. Sensitivity analyses demonstrated insensitivity of the study model to the study input uncertainties, except for the NICU stay and cost of MV.

Conclusion This is the first cost-effectiveness evaluation of morphine versus fentanyl in a NICU. Morphine significantly improved sedation over fentanyl. There is a 98% probability that morphine is dominant over fentanyl.

REFERENCES AND/OR ACKNOWLEDGEMENTS

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No conflict of interest.

1ISG-017 CLINICAL AND ECONOMIC EVALUATIONS OF MORPHINE AND FENTANYL WITH MECHANICAL VENTILATION IN INTENSIVE CARE SETTINGS: A SYSTEMATIC REVIEW OF METHODOLOGICAL TRENDS AND REPORTING QUALITY

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Background Patients with respiratory disorders, including respiratory distress syndrome (RDS), require mechanical ventilation (MV) to maintain the pulmonary function. MV, however, is an invasive procedure that requires the administration of sedatives to simplify the procedure. Fentanyl and morphine are widely used opioids as sedatives in the intensive care unit (ICU). While there is less potential of morphine to cause tolerance, fentanyl has a faster onset and shorter duration of action.

Purpose To summarise the characteristics and gaps in methods and quality of reports of the comparative clinical and economic evaluations on the use of fentanyl and morphine in patients with respiratory disorders undergoing MV in the ICU settings.

Material and methods The electronic databases Medline, Embase, OVID, Science Direct, Springer Link and EconLit were used to identify comparative studies of either fentanyl or morphine or both, in the management of ventilated patients with respiratory disorders in the ICU. The outcome measures were the trends of methodological characteristics and designs of included studies. Appraisal of studies was performed via the Consolidated Standards of Reporting Trials, Strengthening the Reporting of Observational Studies in Epidemiology and Consolidated Health Economic Evaluation Reporting Standards checklists.

Results Among 1327 found articles, 33 met the inclusion criteria. Twenty-two studies were conducted in adults, eight in neonates and three in paediatrics. No head-to-head morphine versus fentanyl evaluation was explicitly undertaken only in participants with respiratory conditions. Studies relied on various types of scales to measure the sedation level as a primary study outcome, which limits the comparability of conclusions. Economic outcomes were evaluated in seven studies, only in adults and all from the hospital perspective. The same sedation regimen performed differently in various studies based on different endpoints. All of the randomised controlled trials, observational cohort and pharmacoeconomics studies did not meet the majority of assessed reporting quality criteria.

Conclusion Although the use of sedative regimens to manage mechanically ventilated patients with respiratory disorders is very high, the heterogeneity of studies disables the comparison of findings and, consequently, the construction of clear conclusions regarding the most effective and cost-effective sedatives. Evidence generated from poor reported studies may result in uninformed decisions by decision makers.

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1ISG-018 ORGANISATIONAL COMMITMENT OF HOSPITAL PHARMACISTS, RELATING TO THE SUPPORTIVE ORGANISATIONAL ENVIRONMENT

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Background As hospital pharmacists have expanded their role from simple drug dispensing to patient-oriented clinical practice, they have augmented their professionalism (the attitudes and belief as professional (PF)) as hospital pharmacists. Thus it has been important to make them commit to hospital organisation.

Purpose This study examines how a supportive organisational environment (SOE) influences organisational commitment (the attitudes and behaviours to devote themselves to their organisation (OC)) of hospital pharmacists in South Korea. In particular, we have analysed the role of professionalism in the relationship.

Material and methods This study included 224 Korean hospital pharmacists, who responded to our survey from August to September 2017. The components having an eigenvalue greater than 1 were attained from the factor analyses for PF, OC and SOE. The effect of each factor of SOE was evaluated by regression analysis, while the mediation effect of PF was ascertained by mediation analysis.

Results Factor analysis (over 0.7 of Cronbach's α) showed that the PF of hospital pharmacists was determined by a 'professional organisation as a major referent (0.722)', 'mission in public service (0.851)' and 'autonomy (0.726)'. The OC of hospital pharmacists to a hospital organisation was decided by the fourth dimensional perspective that comprises 'affective OC (to identify with organisation effectively, 0.861)', 'continuance benefit OC (to commit increased benefits as a result of tenure, 0.759)' and 'normative OC (to commit because it is morally right, 0.741)'. The SOE was determined by 'organisational support (0.870)', 'educational support (0.918)', 'supervisory support (0.908)' and 'colleague support (0.921)'. The result of regression analysis substantiated that organisational support influences affective OC ($p<0.001$) and supervisor support effects both affective ($p<0.01$) and normative ($p<0.05$) OC. It was confirmed that PF concurrently effects affective ($p<0.001$) and normative ($p<0.001$) OC as well as the mediation effect that reinforces organisational commitment ($p<0.05$).

Conclusion The higher the PF, the stronger the OC by hospital pharmacists. Thus, respecting autonomy, reflecting the opinions and providing welfare are necessary in strengthening pharmacist's professionalism. Besides, supervisors should have an interest in the job performance, present distinct goals of hospital pharmacists and help them exert their professionalism. Furthermore, hospital pharmacists' performances should promote public service.

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1ISG-019 INSIGHT INTO PHARMACY AND THERAPEUTICS COMMITTEES' STRUCTURE AND ACTIVITIES AMONG HOSPITALS IN X: MIXED-METHODS APPROACH

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Background The X healthcare system is facing unprecedented challenges to healthcare expenditure that warrants healthcare reform and cost cutting. The pharmacy therapeutic committees (PTC) in hospitals play a pivotal role in a hospital formulary management system to ensure cost containment and to improve quality of care.

Purpose Our study investigates the current PTCs' structures, activities, variations and potential factors that might influence the decision-making of these committees within Saudi Arabian hospitals.

Material and methods The study was conducted in governmental and private hospitals in X from May to July 2018 using a mixed-methods approach consisting of a quantitative, questionnaire-based study followed by a qualitative study with a triangulation technique for data collection that involved observations as well as in-depth semi-structured interviews to generate more robust findings. Ethical approval for the study was obtained from the participating hospitals.

Results One hundred and nine members were invited from seven institutions for the questionnaire: 51.47% responded. For the qualitative interview, 25 members were required to reach data saturation. All PTCs had policies and procedures outlining the committee's activities, and an approved committee formation order. Most of the PTCs (45, 88.2%) conduct their meetings every month, and all their activities complied with CBAHI's accreditation minimum requirements. The greatest challenges reported, were time restraints on PTC activities (seven, 28%), lack of awareness of their function in committee, evidence-based evaluation and budget restraints (five, 20%), and the stock monitoring system and lack of expertise in pharmacoeconomics (three, 12%).

Conclusion Based on our study findings, PTCs in the X health sector need to invest in standardising the functions and processes of PTCs, developing training programmes to support PTCs members in specialised aspects of formulary management, setting minimum standards for committee members' selection and investing in stock monitoring IT solutions. Such changes may improve PTCs' efficiency and cost cuts to align with the vision.

REFERENCE AND/OR ACKNOWLEDGEMENTS

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1ISG-020 CHEMICAL RISK ASSESSEMENT IN A QUALITY CONTROL LABORATORY BY A TOOL USING ACTIVITY ANALYSIS

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Background Chemical risk is the result of occupational exposure to a chemical agent. This exposure can induce several effects that can cause fatal intoxications.

Purpose The purpose is to assess the risks related to the chemical reagents used in the control laboratory and to propose preventive measures to reduce these risks.

Material and methods We used a tool named OPERA 'First Chemical Risk Assessment Tool by Activity Analysis'. It allows to quantify the level of severity of the chemical risk and to guide its reduction.

The quantification of the level of severity is established by giving the information on the label or on the material safety data sheet: the nature of the risk; the nature of the safety; the conditions of use products; and the respect of safety measures.

Two scales of values have been established: the first allows the qualification of the level of severity of the risk and the second prioritises the setting up of an action.

Results Our analysis is established for 85 chemical reagents in the laboratory. Twenty-four per cent of the reagents are classified as non-hazardous, such as calcium carbonate. As for the