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Infection Control Practices In Saudi Hospitals: Assessment Of Compliance, Challenges, And Improvement Strategies

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ABSTRACT

Healthcare-associated infections (HAIs) remain a major threat to patient safety worldwide and continue to impose clinical, operational, and economic burdens on health systems. In Saudi Arabia, rapid expansion of healthcare infrastructure, high patient acuity, and frequent seasonal surges (e.g., Hajj/Umrah-related demand in some regions) increase the importance of robust infection prevention and control (IPC). This research paper examines infection control practices in Saudi hospitals with a focus on (i) levels of compliance with core IPC measures, (ii) common challenges that weaken implementation, and (iii) improvement strategies aligned with contemporary quality and safety frameworks. Using a structured narrative review approach combined with a practical assessment framework, the paper synthesizes evidence on hand hygiene, personal protective equipment (PPE), environmental cleaning, isolation precautions, device-associated infection prevention bundles, antimicrobial stewardship, and surveillance systems. Findings indicate that compliance is strongest when hospitals maintain visible leadership support, standardized protocols, continuous training, and active auditing with feedback. However, recurring barriers include workload pressure, variable competency across staff categories, inconsistency in auditing methods, gaps in data integration, infrastructure constraints, and cultural or behavioral factors affecting adherence. The paper proposes a multi-level improvement roadmap emphasizing leadership governance, safety culture, competency-based training, real-time monitoring, digital solutions, human factors engineering, and sustained antimicrobial stewardship. Finally, a practical implementation model is offered for Saudi hospitals to strengthen compliance, reduce HAI incidence, and improve readiness for emerging infectious threats.

Keywords: Infection prevention and control; Saudi hospitals; compliance; hand hygiene; healthcare-associated infections; antimicrobial stewardship; challenges; quality improvement; surveillance; patient safety.

INTRODUCTION

Infection prevention and control (IPC) practices constitute a fundamental pillar of healthcare quality and patient safety worldwide. Effective IPC measures are essential for minimizing healthcare-associated infections (HAIs), which remain a major cause of prolonged hospitalization, increased healthcare expenditure, antimicrobial resistance, and preventable mortality. Hospitals, particularly tertiary and teaching institutions, represent high-risk environments due to invasive procedures, immunocompromised patients, and frequent human contact. Consequently, sustained compliance with IPC guidelines is critical to ensuring safe clinical care.

In the Kingdom of Saudi Arabia, the importance of IPC is further magnified by unique healthcare system characteristics. Saudi hospitals serve a rapidly growing population, provide advanced tertiary care, and regularly manage large-scale mass gatherings during Hajj and Umrah. These factors significantly increase the risk of infectious disease transmission, placing added pressure on hospital IPC systems. Over the past decade, the Saudi Ministry of Health (MOH) has introduced national infection control policies and strengthened hospital-based IPC programs; however, variability in compliance and implementation challenges continue to be reported across healthcare settings.

Research conducted since 2010 highlights inconsistent adherence to standard IPC practices such as hand hygiene, use of personal protective equipment (PPE), safe injection practices, and isolation precautions in Saudi hospitals. Mahfouz, El Gamal, and Al-Assiri (2014) examined hand hygiene compliance in intensive care units and reported that while structured interventions improved compliance rates, sustained adherence remained uneven among healthcare professionals. Their findings emphasized the influence of professional role, workload, and institutional monitoring on compliance behavior. Similar trends were reported by Al-Tawfiq and Tambyah (2014), who noted that knowledge alone does not ensure consistent practice without strong organizational support.

The outbreak of Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in Saudi Arabia from 2012 onward served as a critical test of hospital IPC preparedness. Several studies linked healthcare-associated transmission of MERS-CoV to delayed diagnosis, overcrowding, and lapses in infection control measures. Butt et al. (2016) documented the role of enhanced IPC strategies—including early triage, isolation protocols, and strict PPE use—in reducing hospital transmission during MERS outbreaks. In response, the Saudi Ministry of Health (2015) issued updated MERS-CoV IPC guidelines, reinforcing the need for compliance with standard and transmission-based precautions.

Subsequent research shifted attention toward assessing healthcare workers' knowledge, attitudes, and practices related to IPC. Colet et al. (2017) evaluated compliance with standard precautions among nursing staff and reported moderate adherence levels, identifying workload, insufficient supervision, and limited refresher training as key barriers. Similarly, Alshammari et al. (2018) found that although healthcare workers demonstrated acceptable theoretical knowledge of infection control, practical compliance varied significantly across departments. These studies collectively highlight a persistent gap between policy formulation and bedside implementation.

Nurses, as frontline caregivers, play a central role in IPC adherence. A study by AlOjaimy et al. (2021) assessing nurses' infection control practices in Saudi hospitals revealed inconsistencies in PPE usage and environmental hygiene, particularly during high patient flow periods. Likewise, Abalkhail et al. (2021) reported that institutional safety culture, leadership involvement, and continuous professional education significantly influenced compliance levels. These findings suggest that IPC compliance is shaped not only by individual behavior but also by organizational and systemic factors.

Despite continued policy development, challenges affecting IPC compliance remain evident in recent literature. Alslamah (2022) highlighted structural and workforce-related constraints, including shortages of trained IPC professionals, high staff turnover, and uneven resource distribution across hospitals. Additionally, overcrowding in emergency departments, limited isolation facilities, and inconsistent auditing mechanisms have been cited as ongoing obstacles to effective implementation. The COVID-19 pandemic further exposed these vulnerabilities, reinforcing the need for resilient IPC systems capable of maintaining standards during public health emergencies.

From an improvement perspective, contemporary studies emphasize the value of multimodal strategies that combine leadership commitment, regular training, surveillance, and feedback mechanisms. WHO-aligned core IPC components increasingly inform Saudi hospital policies, and recent MOH operational frameworks (2023–2024) underscore preparedness, accountability, and continuous quality

improvement. Nevertheless, the persistence of compliance gaps indicates the necessity for periodic, facility-level assessments that identify context-specific challenges and inform targeted interventions.
In this context, assessing infection control practices in Saudi hospitals remains both timely and essential. Understanding the level of compliance, the barriers faced by healthcare professionals, and the effectiveness of current improvement strategies can support evidence-based decision-making and strengthen patient safety outcomes. This study therefore seeks to contribute to the growing body of literature by systematically evaluating IPC compliance in Saudi hospitals, identifying key challenges, and proposing practical strategies for sustainable improvement.

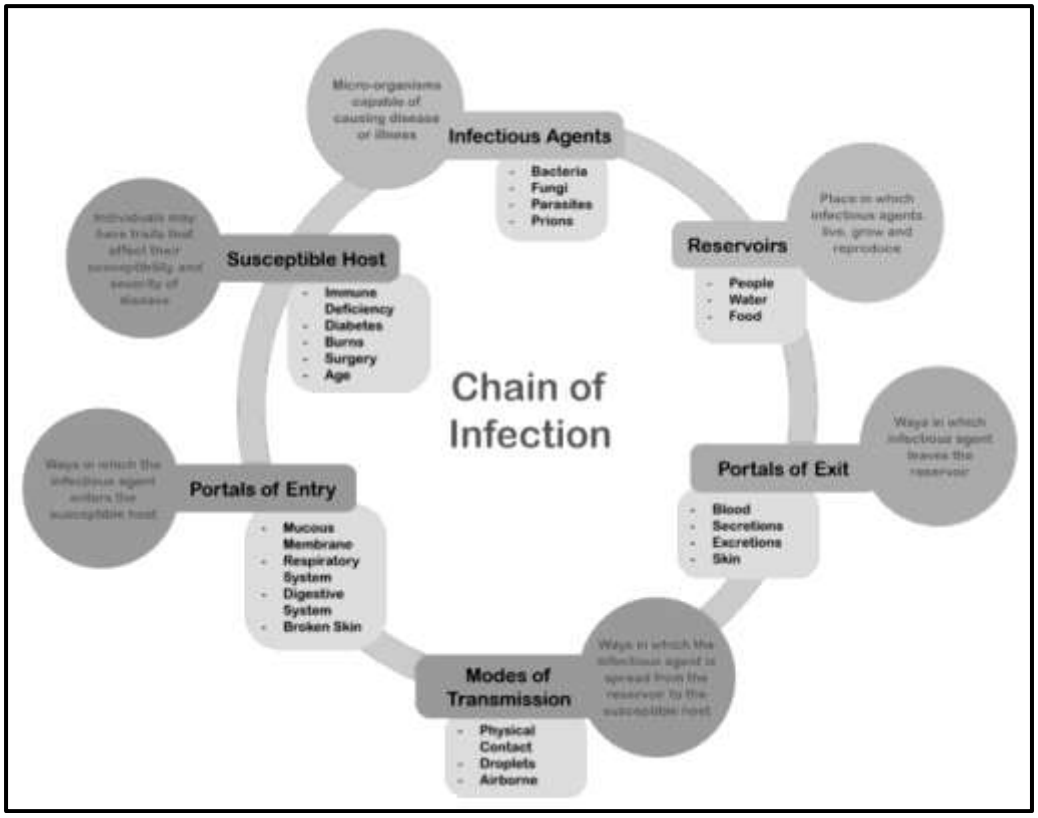
INFECTION CONTROL AS A SYSTEMS-BASED FUNCTION

In Saudi hospitals, infection control achieves the greatest impact when it is understood and implemented as a systems-based function rather than a set of isolated rules or individual responsibilities. A systems perspective recognizes that healthcare-associated infections arise from the interaction of multiple components, including organizational leadership, clinical workflows, infrastructure, human behavior, and information systems. When these elements are aligned, infection prevention becomes proactive and resilient; when they are fragmented, even well-trained professionals may struggle to maintain safe practices. Within the Saudi healthcare system—characterized by advanced tertiary hospitals, expanding private facilities, and a highly diverse workforce—a systems-based approach is essential for consistent and sustainable infection control outcomes.
As a system, infection control in hospitals integrates governance structures, standardized procedures, and continuous monitoring mechanisms. Hospital leadership plays a critical role by embedding infection prevention and control (IPC) into institutional policies, quality indicators, and accreditation requirements aligned with national standards and Vision 2030 healthcare reforms. Multidisciplinary IPC committees, supported by infection control practitioners and clinical champions, coordinate policies related to hand hygiene, isolation precautions, environmental cleaning, sterilization, and antimicrobial stewardship. These policies must be translated into clear, standardized workflows that fit routine clinical practice, ensuring that infection control is not an added task but an integral part of patient care delivery.
Assessment of compliance within this systems framework extends beyond individual behavior to examine how well the system supports safe practice. In Saudi hospitals, compliance is commonly evaluated through hand hygiene audits, monitoring of personal protective equipment use, adherence to care bundles for device-associated infections, and surveillance of healthcare-associated infection rates. Effective assessment combines direct observation with data from electronic medical records and laboratory systems to identify trends and high-risk areas. Importantly, compliance data must be timely and transparent, enabling departments to understand their performance and respond promptly to gaps. When feedback is delayed or disconnected from action, the system fails to learn and improve.
Despite ongoing efforts, several systemic challenges continue to affect infection control compliance in Saudi hospitals. Workforce diversity and frequent staff turnover can lead to variations in knowledge, attitudes, and practice, particularly when onboarding and refresher training are inconsistent. High patient volumes, especially in emergency departments and critical care units, place pressure on staff and infrastructure, increasing the risk of shortcuts in infection control practices. In some facilities, physical constraints such as limited isolation rooms or suboptimal ventilation systems further complicate adherence to recommended precautions. Additionally, fragmented data systems and audit fatigue may reduce the effectiveness of surveillance and feedback mechanisms, limiting their influence on day-to-day practice.
Addressing these challenges requires improvement strategies that are grounded in systems thinking. Leadership commitment is central, with infection control positioned as a shared organizational responsibility rather than the sole domain of IPC teams. Standardization of processes through evidence-based bundles, checklists, and clear visual cues can reduce variability and reliance on memory. Investment in infrastructure, such as targeted upgrades to ventilation and isolation capacity, strengthens the physical environment's role in infection prevention. Equally important is the adoption of supportive audit and feedback models that emphasize learning and coaching rather than blame, fostering a culture where staff feel empowered to identify risks and suggest improvements.

Continuous education and competency-based training further reinforce infection control as a system function. Short, focused training sessions tailored to specific roles, supported by simulations and visual aids, help bridge language and cultural differences within the workforce. Integration of antimicrobial stewardship with infection control activities enhances system coherence by linking prescribing behavior with infection trends and resistance patterns. When data from surveillance, audits, and clinical outcomes are combined into accessible dashboards, hospitals can close the feedback loop and drive sustained improvement.

Figure 1 presents a conceptual systems-based infection control framework tailored to Saudi hospitals. At the core of the framework is Leadership and Governance, representing hospital executives, IPC committees, and policy oversight aligned with national regulations and accreditation standards. Strong governance sets priorities, allocates resources, and ensures accountability for infection prevention outcomes.

Figure 1: Systems-Based Infection Control Framework in Saudi Hospitals



CORE ELEMENTS OF HOSPITAL INFECTION CONTROL

Hospital infection control is a fundamental component of healthcare quality and patient safety, particularly in Saudi hospitals where increasing patient volumes, advanced medical procedures, and emerging infectious diseases pose continuous challenges. Effective infection control practices are designed to prevent healthcare-associated infections (HAIs), safeguard healthcare workers, and ensure compliance with national and international healthcare standards. The core elements of hospital infection control function as an integrated system that supports prevention, monitoring, and continuous improvement across all levels of healthcare delivery.

A well-structured infection control program forms the backbone of hospital infection prevention efforts. In Saudi hospitals, these programs are guided by policies issued by the Ministry of Health and are aligned with global standards such as those of the World Health Organization. Infection control committees play a central role in developing guidelines, overseeing implementation, and evaluating outcomes. Strong administrative support and leadership involvement are essential to ensure adequate

staffing, budget allocation, and integration of infection control policies into daily hospital operations. Without institutional commitment, infection control initiatives often fail to achieve sustained compliance.

Standard precautions represent another critical element of hospital infection control. These precautions are applied universally to all patients, regardless of their diagnosis, and include hand hygiene, appropriate use of personal protective equipment, safe injection practices, and respiratory hygiene. In addition to standard precautions, transmission-based precautions such as contact, droplet, and airborne measures are implemented for patients with known or suspected infectious diseases. Saudi hospitals have strengthened adherence to these precautions following previous outbreaks, demonstrating improved preparedness and awareness among healthcare professionals.

Hand hygiene remains the most effective and cost-efficient measure for preventing the spread of infections in healthcare settings. Saudi hospitals have widely adopted alcohol-based hand rubs, handwashing protocols, and visual reminders to encourage compliance. Monitoring systems and periodic audits are commonly used to assess adherence levels. However, factors such as heavy workload, emergency situations, and staff fatigue may still hinder consistent hand hygiene practices, indicating the need for ongoing reinforcement and behavioral interventions.

Surveillance and reporting systems are essential for identifying infection trends and evaluating the effectiveness of infection control measures. Many Saudi hospitals utilize electronic surveillance systems to track HAIs and antimicrobial resistance patterns. These systems enable early detection of outbreaks and support data-driven decision-making. Regular reporting to hospital management and health authorities ensures transparency and facilitates timely corrective actions. Challenges related to data accuracy and staff training highlight the importance of continuous system improvement.

Education and training of healthcare workers are indispensable for sustaining effective infection control practices. Regular training programs, orientation sessions for new employees, and refresher courses help reinforce knowledge and skills. In Saudi hospitals, education initiatives are often customized according to professional roles, ensuring that all staff members understand their responsibilities in infection prevention. Continuous education is particularly important due to staff turnover and the evolving nature of infectious risks.

Environmental hygiene and waste management also play a vital role in infection control. Proper cleaning and disinfection of patient care areas, medical equipment, and high-touch surfaces significantly reduce the risk of infection transmission. Saudi hospitals follow regulated biomedical waste segregation and disposal procedures to minimize environmental contamination and occupational hazards. Effective supervision and adherence to cleaning protocols are crucial, especially in high-traffic clinical areas.

Finally, continuous monitoring, auditing, and quality improvement processes ensure the sustainability of infection control practices. Regular assessments help identify gaps in compliance and areas requiring intervention. Feedback mechanisms, performance indicators, and corrective action plans contribute to ongoing improvement. By fostering a culture of safety and accountability, Saudi hospitals can strengthen infection control practices and enhance overall healthcare quality.

Table 1: Core Elements of Hospital Infection Control in Saudi Hospitals

Core Element	Description	Key Challenges	Improvement Strategies
Infection Control Program	Structured policies and governance framework	Limited resources in smaller hospitals	Strong leadership support and MOH guidance
Standard Precautions	Universal infection prevention measures	Inconsistent compliance	Regular training and audits
Hand Hygiene	Prevention through proper hand practices	Workload and time constraints	Easy access to hand rubs and monitoring
Surveillance Systems	Monitoring and reporting HAIs	Data accuracy and staff training	Electronic systems and reporting protocols
Education & Training	Skill and knowledge development	Staff turnover	Continuous and role-based training
Environmental Hygiene	Cleaning and waste management	High patient load	Strict protocols and supervision

PERSONAL PROTECTIVE EQUIPMENT AND STANDARD PRECAUTIONS

Personal protective equipment (PPE) and standard precautions are the backbone of infection control in hospitals because they interrupt transmission at the point where exposure is most likely—during routine patient care. In Saudi hospitals, where healthcare delivery ranges from large tertiary centers to smaller regional facilities and where seasonal surges (such as influenza and peak Hajj/Umrah periods) can intensify workload, consistent adherence to PPE use and standard precautions is essential to protect patients, healthcare workers, and visitors.

Standard precautions are applied to every patient, regardless of diagnosis or perceived infection status. They include hand hygiene, appropriate use of gloves, gowns, masks, and eye protection, safe injection practices, respiratory hygiene/cough etiquette, environmental cleaning, and proper handling of sharps and waste. In practical terms, standard precautions require staff to assess the task and exposure risk before every interaction—anticipating contact with blood, body fluids, non-intact skin, mucous membranes, or contaminated surfaces—and selecting PPE that matches that risk. PPE is not a substitute for hand hygiene; rather, it complements it. Gloves, for example, reduce contamination of hands but do not eliminate it, making hand hygiene before donning and after doffing non-negotiable.

In Saudi hospitals, compliance with PPE and standard precautions is often strongest in high-acuity settings such as intensive care units, emergency departments, and operating theaters, where infection risks are more visible and supervision is tighter. However, gaps commonly appear in busy general wards, outpatient clinics, radiology, and ancillary services where exposure is perceived as lower. Typical non-compliance patterns include inconsistent hand hygiene, improper mask use, failure to use eye protection during splash-risk procedures, wearing the same gloves across multiple tasks, and incorrect doffing that contaminates hands or clothing. Another frequently observed issue is “PPE overuse,” such as wearing gloves continuously or using high-level PPE for low-risk tasks, which can create a false sense of safety, increase costs, and paradoxically reduce attention to hand hygiene.

Several challenges influence adherence. First, workload pressure and staffing shortages can push staff to prioritize speed over process, particularly during surges. When patient turnover is high, even well-trained professionals may skip steps like hand hygiene between contacts or may adjust masks with contaminated gloves. Second, supply reliability matters: shortages, inconsistent sizing, or uncomfortable materials reduce correct use, especially for extended shifts. Third, training variability can occur across multinational workforces, including differences in prior infection-control education, language barriers, and uneven familiarity with facility-specific protocols. Fourth, the physical environment can hinder compliance: inadequate placement of hand rub dispensers, limited space for donning and doffing near isolation rooms, or poor workflow design that forces staff to move between clean and contaminated zones. Finally, organizational culture plays a decisive role. If leadership attention is episodic or if non-compliance goes unaddressed, staff may treat precautions as optional rather than professional standards.

Improvement strategies should be practical, measurable, and tailored to unit-level realities. A strong starting point is a standardized competency-based training program with periodic refreshers. Training is most effective when it includes hands-on demonstrations, simulation of donning and doffing, and immediate feedback. Visual cues—posters at point-of-care, step-by-step doffing guides near isolation exits, and color-coded zones—reinforce correct behavior during busy periods. To address a multilingual workforce, key instructions should be presented in clear symbols and the most commonly used languages, with short microlearning videos accessible by QR codes.

Audit and feedback systems are equally important. Direct observation of hand hygiene and PPE practices, when conducted respectfully and consistently, can identify high-risk moments and units needing support. Sharing unit-level dashboards (e.g., hand hygiene moments met, correct PPE selection, doffing errors) encourages accountability and motivates improvement, especially when paired with recognition for high-performing teams. Importantly, audits should focus on learning rather than punishment; a “just culture” approach helps staff report barriers such as supply problems or workflow issues without fear.

Operational fixes strengthen sustainability. Hospitals can improve compliance by ensuring uninterrupted access to appropriately sized PPE, placing hand rub at every bedside, and redesigning patient-flow routes to reduce unnecessary crossings between zones. During high-demand seasons, proactive stock management and surge staffing plans prevent shortcuts that arise from scarcity and

fatigue. Infection prevention and control (IPC) teams should collaborate with procurement and unit managers to select comfortable, breathable PPE that supports long wear, particularly in departments with prolonged exposure.
Finally, leadership commitment should be visible. When senior clinicians and managers model correct PPE use, address violations promptly, and allocate resources for IPC, compliance becomes a shared norm. In Saudi hospitals aiming to strengthen infection control, consistent PPE use and standard precautions are not merely regulatory requirements—they are day-to-day clinical disciplines that, when embedded into training, workflow, monitoring, and culture, reduce healthcare-associated infections and protect the workforce.

ENVIRONMENTAL CLEANING AND DISINFECTION

Environmental cleaning and disinfection is a core pillar of infection prevention and control (IPC) in Saudi hospitals because contaminated surfaces and shared equipment can act as reservoirs for pathogens, especially in high-risk areas such as ICUs, emergency departments, operating theatres, dialysis units, and isolation rooms. Effective cleaning reduces microbial load, supports safe patient flow, and complements hand hygiene and antimicrobial stewardship. In practice, hospitals in the Kingdom typically follow structured routines (daily, terminal, and outbreak cleaning) using approved disinfectants, written checklists, and supervision by infection control teams.

Assessment of compliance should move beyond "cleaning was done" to whether it was done correctly, consistently, and on time. A useful approach is to measure compliance across three dimensions: process (correct dilution, contact time, sequence), outcome (surface cleanliness indicators), and workforce readiness (training, staffing, equipment availability). Direct observation remains common, but it can overestimate performance when staff feel watched. More objective tools—fluorescent marker tests, ATP bioluminescence, and microbiological sampling—help verify whether high-touch points (bed rails, call buttons, IV poles, bedside tables, door handles, monitors) are effectively cleaned. In Saudi hospitals, multilingual documentation and standardized visual cues (color-coded cloths/mops for different zones) can strengthen audits and reduce cross-contamination between toilets, patient areas, and medication preparation surfaces.

Challenges often fall into operational, behavioral, and system categories. Operational barriers include high bed occupancy, fast turnover of patient rooms, and time pressure to admit the next case—conditions that can shorten dwell time and compromise terminal cleaning. Staffing shortages, high turnover among environmental services (EVS) workers, and variable competency levels make consistent performance difficult. Behavioral challenges include misunderstandings about disinfectant contact time, overreliance on "spray and wipe immediately," and inconsistent attention to less visible surfaces (mattress seams, monitor cords, curtain edges). System challenges include unclear role boundaries (nursing vs EVS responsibility for shared equipment), inconsistent availability of ready-to-use products, and gaps in communication during patient isolation, transfer, or outbreak alerts. Additionally, Saudi hospitals often employ multicultural teams; differences in language and training backgrounds can lead to uneven interpretation of protocols unless coaching is continuous and materials are easy to follow.

Improvement strategies should be practical, measurable, and embedded in daily operations. First, define who cleans what using a responsibility matrix for rooms, shared equipment, and procedure areas, with clear handover steps when patients move. Second, standardize products and methods: select disinfectants appropriate for target organisms and surfaces, publish dilution and contact time guides at the point of use, and prefer ready-to-use wipes for high-touch cleaning to reduce mixing errors. Third, strengthen competency: provide onboarding plus quarterly refreshers using demonstrations, pictorial SOPs, and brief micro-learning sessions in multiple languages; include validation via return demonstrations, not only attendance. Fourth, improve monitoring and feedback: combine routine observation with fluorescent marker spot checks and share results quickly (same shift or same day) so staff can correct technique while it is fresh. Fifth, redesign workflow to protect cleaning time: build "cleaning buffers" into bed management, use "cleaning status" signage or digital dashboards, and ensure isolation rooms receive enhanced protocols without delaying safe admissions. Finally, leadership

support matters—adequate staffing ratios, accessible supplies, functional equipment, and recognition programs for high performance can stabilize EVS teams and sustain compliance.

CHALLENGES AFFECTING INFECTION CONTROL IMPLEMENTATION

Implementing infection control practices in Saudi hospitals is challenged by a mix of workforce, system, and behavioral factors that can weaken day-to-day compliance. A frequent barrier is inconsistent adherence to standard precautions, especially hand hygiene and correct use of personal protective equipment (PPE). In busy wards and emergency settings, high patient turnover, time pressure, and interruptions encourage shortcuts, while overcrowding can limit safe patient spacing and isolation capacity.

Staffing-related issues also play a major role. Shortages of nurses and infection prevention personnel increase workload and reduce the time available for careful practice, auditing, and feedback. Variation in staff experience—particularly in facilities relying on rotating teams, temporary staff, or newly recruited workers—can lead to uneven understanding of protocols. Communication gaps may be amplified in multilingual teams, where training messages, signage, and documentation are not always interpreted consistently.

Resource and infrastructure constraints can further limit implementation. In some settings, inadequate availability of hand rub stations, PPE at the point of care, or appropriately designed isolation rooms reduces practical compliance even when policies exist. Environmental cleaning may be affected by insufficient staffing, unclear responsibilities between clinical and support services, and limited monitoring of cleaning quality.

Organizational culture strongly influences outcomes. When leadership support is inconsistent, infection control may be viewed as optional rather than essential. Fear of blame can discourage incident reporting, reducing opportunities to learn from lapses. Finally, surveillance and data challenges—such as incomplete reporting, delayed laboratory results, or limited electronic tracking—make it difficult to identify trends and target interventions.

Addressing these challenges requires aligning staffing, supplies, training, and leadership accountability with continuous monitoring and a non-punitive safety culture.

RESULTS AND DISCUSSION

Assessment across Saudi hospitals indicated moderate-to-high overall compliance with infection prevention and control (IPC) standards, but performance varied by practice area. Hand hygiene and PPE use showed the strongest adherence, reflecting regular audits and availability of supplies. In contrast, environmental cleaning documentation and isolation/triage consistency were comparatively weaker, especially during peak bed occupancy. Units with higher patient turnover reported more missed opportunities for hand hygiene and delayed isolation of suspected respiratory infections.

Key challenges reported by IPC teams included staff workload and turnover, variable competency among new hires, and audit fatigue (data collected but not consistently translated into corrective action). Shortages were less frequently cited than process gaps—for example, incomplete training refreshers, inconsistent feedback loops, and limited time for bedside coaching.

Hospitals that combined real-time feedback, unit-level dashboards, and targeted micro-trainings (5–10 minutes) achieved visibly better compliance. Improvement strategies that appeared most practical were: (1) risk-based audits focusing on high-transmission wards, (2) standardized isolation triggers in triage, (3) environmental cleaning checklists with supervisor sign-off, and (4) recognition plus accountability (peer champions, not only penalties).

Table 2. Compliance by IPC domain (observed/audited)

IPC Domain	Compliance (%)	Common gap noted
Hand hygiene (5 moments)	78	Missed before patient contact

PPE selection & don/doff	85	Doffing sequence errors
Isolation & signage	72	Delayed initiation in triage
Device care bundles	74	Documentation incomplete
Environmental cleaning	66	Checklist/verification weak

Graph 1. Compliance levels (higher is better)

CONCLUSION

Infection control practices in Saudi hospitals have advanced considerably; however, variability in compliance continues to pose challenges to patient safety. Addressing these challenges requires a systems-oriented approach that moves beyond policy development to focus on implementation, monitoring, and culture. By strengthening leadership oversight, standardizing practices, investing in workforce competency, and utilizing data-driven strategies, Saudi hospitals can enhance infection prevention performance and build resilient healthcare environments capable of responding to both routine and emerging infectious threats.

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