

Embedding a clinical governance framework within Egypt's health insurance system

Magdy Bakr¹, Riham El-Asady^{2,4}, Naeema Al Qasseer², Ahmed El Sobki¹, Rehab Konsowa¹, Nabil Dowidar³ and Gasser Gad El-Kareem²

¹Egypt Healthcare Authority (Correspondence to Magdy Bakr: magdymbakr@gmail.com). ²WHO Country Office, Egypt. ³Health Governance Unit, Medical Research Institute, Alexandria University. ⁴Faculty of Medicine, Ain Shams University.

Abstract

Background: Since the enactment of the universal health insurance law in 2018, Egypt has undertaken major health system reforms. In 2021, the Egypt Healthcare Authority introduced a clinical governance framework to improve the quality and safety of health care services.

Aim: To describe the implementation, early outcomes and lessons learned from introducing a clinical governance framework in Egypt between 2021 and 2024.

Methods: We implemented the clinical governance framework in 29 hospitals and 301 family health units across 6 governorates, serving approximately 5 million beneficiaries. Activities included training and on-site technical support. Key performance indicators were monitored and analysed to assess implementation outcomes.

Results: A total of 494 treatment protocols were developed across 28 medical specialties and more than 5000 physicians were trained to apply the protocols. There was an increase in the detection and timely correction of adverse events in the majority of cases. In Port Said Governorate, 82% of medication errors were detected and corrected in 2023, 84% in Ismailia Governorate and 70% in South Sinai Governorate. In 2024, the percentage of medication errors decreased by 27% in Port Said Governorate and 11% in Luxor Governorate. Hand hygiene compliance increased to 85% in 2024 from 78% in 2023, and surgical site infections decreased to 0.83 from 5 per 100 surgeries.

Conclusion: Despite certain challenges the introduction of a clinical governance framework contributed to improved safety and clinical outcomes in selected facilities. Political commitment and integration within existing structures were crucial to success.

Keywords: clinical governance, health insurance, treatment protocol, adverse event, medical error, patient safety, Egypt

Citation: Bakr M, El-Asady R, Al Qasseer N, El Sobki A, Konsowa R, Dowidar N, El-Kareem GG. Embedding a clinical governance framework within Egypt's health insurance system. *East Mediterr Health J.* 2025;31(9&10):567–573. <https://doi.org/10.26719/2025.31.10.567>.

Received: 16/12/2024; Accepted: 25/03/2025

Copyright © Authors 2025; Licensee: World Health Organization. EMHJ is an open-access journal. This paper is available under the Creative Commons Attribution Non-Commercial ShareAlike 3.0 IGO licence (CC BY-NC-SA 3.0 IGO; <https://creativecommons.org/licenses/by-nc-sa/3.0/igo>).

Background

Despite global efforts over 2 decades to improve health care quality and patient safety, medical harm remains a major cause of mortality. The World Health Organization (WHO) estimates that 134 million adverse events occur annually in hospitals in low- and middle-income countries (LMICs), resulting in approximately 2.6 million deaths (1). In primary and ambulatory care settings, around 40% of patients experience harm, 80% of which is preventable (2).

In Egypt and other countries of the WHO Eastern Mediterranean Region, adverse events occur in up to 18% of hospital admissions, 60% of which are preventable, and 40% result in death or permanent disability (3). Around two-thirds of all adverse events caused by unsafe care occur in LMICs (4).

Following the adoption of the Universal Health Insurance (UHI) law, Egypt Healthcare Authority (EHA) developed a customised clinical governance framework to support implementation in participating governorates, with technical support from WHO. The framework was

designed to promote the delivery of safe, high-quality care across EHA-affiliated facilities.

A structured framework based on defined pillars was developed by a core team comprising EHA leadership, senior technical staff, WHO technical support team and external consultants. The team engaged governorate- and facility-level managers and providers in promoting awareness and preparation for implementation. An initial situation analysis revealed the strengths, challenges and opportunities, leading to the development of a preliminary action plan.

This paper documents key steps, challenges and lessons learned during implementation of the clinical governance under Egypt's UHI system, introduced to support the country's progress towards Universal Health Coverage (UHC).

The national health system and key challenges

As the most populous Arab country, Egypt is a lower-middle-income economy with a highly pluralistic healthcare system encompassing public and private providers and different financing mechanisms. The Ministry of Health and Population (MOHP) serves

both as the regulator and major provider of primary, preventive and curative care services.

Key challenges in the health sector have been well documented (9–11). Service delivery, financing and governance are highly fragmented, resulting in significant inefficiencies and undermining the quality of public health services. Inadequate government expenditure on health in recent years has led to out-of-pocket payments accounting for approximately 62% of total health expenditure (12). Patient safety practices are inconsistently applied, with no overarching system to define roles, responsibilities or lines of accountability. Of particular concern is the deviation of clinical practice from standardised clinical pathways. The absence of a unified system for reporting and managing adverse events, coupled with a prevailing punitive culture, further impedes patient safety. Clinical privileges are not consistently aligned with staff credentials due to the lack of regulatory mechanisms. The healthcare system is also characterised by weak medical recordkeeping and fragmented health information systems. Patient and community engagement in healthcare planning and management remains limited (13,14).

Drawing on the experience of the Australian Commission on Safety and Quality in Health Care and incorporating global definitions of clinical governance, EHA developed a comprehensive clinical governance framework. It defines clinical governance as “the set of relationships, responsibilities and accountabilities to ensure that everyone from frontline clinicians to managers and members of governing bodies, is accountable to patients and the community for assuring the delivery of safe, effective and integrated health care to achieve good clinical outcomes” (15–18).

Egypt Healthcare Authority clinical governance framework model

Figure 1 illustrates the clinical governance pillars adopted by EHA. These pillars guide the Authority's efforts to institutionalise leadership commitment, quality improvement and patient-centred service delivery across its network.

A foundational pillar integrates clinical governance into the organisational structure, ensuring effective governance mechanisms and clear lines of accountability. Quality and patient safety form another core pillar, focusing on areas such as surgical safety, medication safety, infection prevention and control (IPC), and related programmes.

The development and regulation of clinical guidelines and standardised treatment protocols, supported by a credentialing and privileging system, constitute a further pillar that promotes evidence-based care delivery. Adverse event management is treated as a distinct pillar, in recognition of its critical role in improving clinical outcomes and fostering a culture of safety.

Real-time clinical case review systems were developed for the management of critically deteriorating patients and the review of mortality cases, which are supported by structured clinical audit programmes implemented in selected areas.

Reporting and information management constitute a separate pillar that emphasises effective medical record management and empowers health care providers to report incidents confidently. A digital health information system (HIS) integrates key indicators and utilisation markers into a structured dashboard to support real-time monitoring, decision-making and continuous quality improvement. The system also includes individual

Figure 1 EHA clinical governance pillars



applications such as digital occurrence variance reporting for adverse events.

Patient and public engagement extends beyond traditional satisfaction measures to active involvement in care delivery processes. Learning and research are promoted through dedicated programmes that support continuous capacity-building, innovation and evidence generation, and transparency and accountability pillars underpin the framework. EHA issues biannual reports to the Office of the President, the Cabinet, Parliament, and MOHP, and ensures public access to information via its website, publications, social media platforms and open data initiatives. Accountability is further reinforced through a national call centre, beneficiary satisfaction offices at the facility level, and formal mechanisms for public inquiry at the parliamentary and presidential levels. Staff performance appraisal is linked to structured assessment tools, with incentives used to recognise achievements in areas such as incident reporting.

Methods

Implementation began in 3 governorates included in the first phase of UHI scheme. As progress was made, three governorates were added. This report covers 2021 to 2024 and includes ongoing activities. Implementation has been carried out in 29 hospitals and 301 family health centres across 6 governorates providing services to approximately 5 million beneficiaries.

The first phase focused on developing a customised clinical governance framework, conducting orientation sessions and establishing commitment within EHA's corporate structure and its network of providers. A technical core team was formed at EHA headquarters, with technical support from WHO. Port Said Governorate was selected as the pilot site, being the first to implement UHI and having strong political support, infrastructure readiness and adequate staffing.

Preparatory activities included field visits by EHA core team to hospitals and branches, where technical and managerial meetings were held with frontline staff. These visits aimed to assess existing systems, practices and challenges, and to engage stakeholders.

The implementation phase was inaugurated in Luxor Governorate at a high-level event that convened key stakeholders and authorities. The event witnessed high-level political commitment and signing of the Luxor Declaration on Clinical Governance, affirming shared commitment to implementation. Field activities followed, including training workshops for multidisciplinary teams from health facilities.

Implementation is ongoing and includes the following steps:

- 1. Development and operationalisation of the organisational structure.** A clearly defined organisational structure was developed at EHA headquarters, branches and hospitals, with detailed job descriptions for all clinical governance roles.
- 2. Establishment of implementation teams at governorate level.** Each EHA branch formed an implementation team, supported by a designated focal person at headquarters.
- 3. Training of trainers programme.** A condensed course, certified by WHO and EHA, was delivered to 35 participants. The course focused on clinical governance principles and aimed to develop a nucleus of trained focal persons who would serve as core trainers to support sustainable scale-up.
- 4. Streamlining of quality and patient safety initiatives under the clinical governance framework.** Efforts are ongoing to align and integrate various existing initiatives under the clinical governance umbrella in order to enhance coherence and efficiency.
- 5. Field support for hands-on training, supervision and coaching.** Frequent field missions were conducted by EHA and WHO experts to provide technical support, discuss challenges with designated staff and support the establishment of organisational structures and the implementation of clinical governance pillars.
- 6. Production and dissemination of technical materials.** Implementation documents such as guidelines, flowcharts, standard operating procedures, job descriptions and presentations were developed and distributed.
- 7. Cascade training at local level.** Graduates of the training of trainers programme conducted cascade training at the governorate and facility levels.
- 8. Financial implications.** Implementation incurred both direct and indirect costs. WHO supported training activities and hosted key events, while EHA contributed staff time, infrastructure improvements, and tools, equipment and incentives to encourage compliance.
- 9. Ongoing activities.** The team is currently focused on consolidating organisational structures, finalising a comprehensive monitoring framework, and continuing hands-on training in all 6 UHI governorates, with emphasis on adverse events management and reporting, infection prevention and control (IPC), surgical and medication safety, and clinical review.

Results

A key pillar of clinical governance implementation is the standardisation of clinical pathways. To date, 494 treatment protocols have been developed across 28 medical specialties, and more than 5000 physicians have been trained in their application. This work has covered 29 hospitals in 6 governorates. Fifteen clinical guidelines in the specialties of paediatrics and neonatology, dentistry, rheumatology and immunology, and 7 guidelines addressing priority diseases and pharmacological interventions have been developed and approved by the Medical Advisory Board of the EHA.

One of the core objectives of clinical governance is the delivery of safe health care services. Results measured to date reflect an increased detection of adverse events and timely intervention in the majority of cases, following the introduction of a reporting system. In Port Said Governorate, 69 849 medication errors were detected in 2023, with 57 261 corrected, yielding a correction rate of 82%. In 2024, the percentage of medication errors decreased by 27% compared to 2023. In Luxor Governorate, 20 180 medication errors were detected in 2023, and the error rate decreased by 11% in 2024. In Ismailia Governorate, 46 520 medication errors were recorded in 2023, with 39 270 corrected, yielding a correction rate of 84%. In the same year, 3696 medication errors were recorded in South Sinai Governorate, with 2577 corrected, reflecting a correction rate of 70%.

As a follow-up to these results, 10 medication usage protocols were developed and disseminated, alongside other corrective actions during the first 3 quarters of 2024. In 2024, 71 022 adverse events were reported across all governorates, with corrective actions taken in 70 285 cases, at a rate of 99%. This reflects a positive change in reporting culture and the institutionalisation of timely intervention mechanisms (Table 1).

Several IPC indicators were assessed. Hand hygiene compliance reached 85% in 2024, an improvement over the benchmark rate of 78%. This compliance rate has steadily improved over time. Catheter-associated urinary tract infections (CAUTIs) decreased to 1.07 per 1000 bed days in 2024, compared to 3.4 at baseline and 2.1 in 2022. Surgical site infections decreased to 0.83 per 100 surgeries in 2024, from a benchmark of 5 per 100 surgeries. Infections caused by multidrug-resistant organisms (MDROs) were recorded at 1.88% in 2024, compared to a benchmark of 4.4% (Table 2).

Not all indicators showed sustained improvement. For example, central line-associated bloodstream infections

(CLABSIs) and ventilator-associated pneumonia (VAP) rates fluctuated, and some infections did not show a clear downward trend. Compliance with antibiotic protocols was reported at 95%. Unauthorised use of restricted antibiotics decreased from 40% to 10%, and preoperative antibiotic administration compliance reached 98%.

It is noteworthy that some indicators did not show consistent improvement over time. Further analysis using structured, validated tools is required to understand these trends and guide corrective action.

Further analysis of ventilator-associated pneumonia rates in the studied facilities prior to clinical governance implementation revealed a gradual decrease over time (Figure 2). While this trend is promising, it cannot be definitively attributed to the intervention, more rigorous research will be required to establish causal links.

One of the most notable areas of progress has been medication safety, as reflected in the volume and value of reported medication errors and the development of policies to prevent and mitigate adverse events, including cost-containment strategies with direct economic impact.

Challenges and lessons learned

A significant challenge encountered was the enormous time and effort required to build consensus among implementation teams. Effective communication and constructive dialogue among teams fostered a shared understanding and facilitated consensus-building.

Establishing an institutional organisational structure for clinical governance was a long and challenging process. Another challenge was the difficulty in integrating clinical governance within existing structures, which was often marked by resistance to change and concerns related to authority and remuneration. Temporary arrangements were introduced as a compromise, while work continued on formalising the permanent structure.

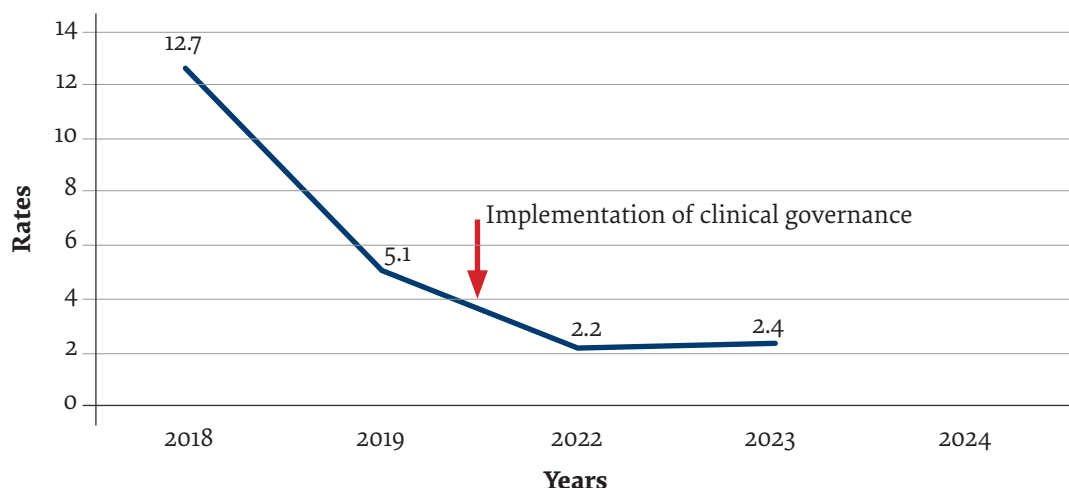
Table 1 Reported adverse events following implementation of a reporting system

Year	Governorate	Reported adverse events	Corrected adverse events	Correction rate (%)
2023	Port Said	69 849	57 261	82
	Ismailia	46 520	39 270	84
	South Sinai	3696	2577	70
2024	All governorates	71 022	70 285	99

Note : Corrected AEs are those intercepted following reporting and addressed through corrective action (e.g. medication adjustments, staff training, etc.).

Table 2 Infection prevention and control indicators following implementation of clinical governance

Indicator	Benchmark	2022	2023	2024
Hand hygiene compliance (%)	78	76	80	8
Central line-associated bloodstream infection (per 1000 bed days)	2.6	3.4	3.2	3.6
Catheter-associated urinary tract infection (per 1000 bed days)	3.4	2.1	1.02	1.07
Ventilator-associated pneumonia (paediatric) (per 1000 bed days)	2.0	5.1	2.2	2.4
Surgical site infections (per 100 surgeries)	5.0	0.7	0.92	0.83
Multidrug-resistant organisms infections (per 1000 bed days)	4.4	0.8	1.42	1.88

Figure 2 Ventilator-associated pneumonia rates in UHI-affiliated facilities, 2018–2024

Hospital staff were often overwhelmed by care delivery responsibilities, while also being expected to manage clinical governance activities, which involve regular rounds, coaching, oversight, monitoring, data collection and reporting, and participation in technical discussions. Staff needed to be formally designated for clinical governance duties, supported by appropriate incentives to manage this additional workload.

High staff turnover posed a challenge to sustainability. Resistance, territoriality and conflicts of interest within existing teams also remained areas of concern. WHO engagement and technical participation provided legitimacy and reassurance to all stakeholders.

Recommendations

The early findings presented in this paper suggest that clinical governance has the potential to significantly improve health care outcomes when embedded within the delivery system. The model moves beyond traditional approaches, where quality and patient safety were the responsibility of isolated departments and where efforts to improve care were fragmented and lacked clinician engagement. By promoting integration across clinical, managerial and organisational levels, clinical governance offers a viable mechanism to enhance transparency, accountability, and system-wide performance. We recommend that clinical governance be formally adopted as a national model for health care delivery and serve as a foundation for policy dialogue in Egypt.

Several enabling factors have emerged as critical to effective implementation and should inform future rollout strategies. These include: establishing a formal organisational structure with clearly defined roles and responsibilities, securing high-level leadership commitment, and investing in field-level engagement and capacity-building efforts. Close communication and consistent supervision were found to mitigate resistance and support uptake.

Further research is needed to evaluate the broader impact of clinical governance. Priority areas include the incidence of adverse events, improvements in medication safety, the establishment of a culture of safety, and the economic effects of implementation.

Study limitations

The work presented in this paper reflects a large-scale implementation plan, supported by national policymakers, as outlined in the Luxor Declaration signed by key stakeholders. However, the implementation until date has been limited to 6 governorates affiliated with the UHI system, which represent less than 5% of the national population.

Although key performance indicators have been collected and analysed at various stages of implementation, a validated assessment framework is still being developed. This tool will be essential for conducting more rigorous evaluations of implementation outcomes and informing national scale-up.

Conclusion

The implementation of clinical governance in Egypt has been a cornerstone of the country's ongoing health system transformation. The mandate to deliver quality, safe, equitable and patient-centred services, grounded in provider accountability and integrity, was reinforced through the adoption of the UHI system.

Although the implementation journey has faced several challenges, notable progress has been achieved. Major obstacles included the difficulty in developing an appropriate organisational structure, resistance from health care workers, fragmentation of quality initiatives, a tendency towards vertical implementation, and infrastructure and resource constraints.

Key success factors included adoption of a systems-based approach, enhancement of staff capacity and provision of support during rollout. Integration with

existing initiatives and sustained leadership commitment were essential to overcoming resistance and building momentum.

Looking ahead, further success will depend on institutionalising clinical governance, establishing a validated monitoring framework and scaling implementation

nationally. A gradual but firm change in organisational culture – towards safety, collaboration and patient-centredness – will be essential for long-term sustainability.

Funding: None

Conflict of interest: None declared.

Intégration d'un cadre de gouvernance clinique dans le système d'assurance maladie en Égypte

Résumé

Contexte : Depuis la promulgation de la loi sur l'assurance maladie universelle en 2018, l'Égypte a entrepris d'importantes réformes du système de santé. En 2021, l'Autorité égyptienne des soins de santé a introduit un cadre de gouvernance clinique visant à améliorer la qualité et la sécurité des services de santé.

Objectif : Décrire la mise en œuvre, les résultats préliminaires et les enseignements tirés de l'inclusion d'un cadre de gouvernance clinique en Égypte entre 2021 et 2024.

Méthodes : Nous avons mis en œuvre le cadre de gouvernance clinique dans 29 hôpitaux et 301 unités de santé familiale répartis dans six gouvernorats, desservant environ cinq millions de bénéficiaires. Les activités comprenaient une formation et un appui technique sur site. Les indicateurs clés de performance ont fait l'objet d'un suivi et d'une analyse afin d'évaluer les résultats de la mise en œuvre.

Résultats : Un total de 494 protocoles thérapeutiques ont été élaborés dans 28 spécialités médicales et plus de 5000 médecins ont été formés à l'application de ces protocoles. Dans la majorité des cas, nous avons constaté une augmentation du nombre de détections et de corrections des événements indésirables effectuées dans les délais requis. Dans le Gouvernorat de Port-Saïd, 82 % des erreurs médicamenteuses ont été détectées et corrigées en 2023, 84 % dans le Gouvernorat d'Ismaïlia et 70 % dans le Gouvernorat du Sinaï Sud. En 2024, le pourcentage d'erreurs médicamenteuses a diminué de 27 % dans le Gouvernorat de Port-Saïd et de 11 % dans le Gouvernorat de Louxor. Le taux de respect de l'hygiène des mains a atteint 85 % en 2024 contre 78 % en 2023, et le taux d'infections du site opératoire a diminué, passant de 5 à 0,83 pour 100 interventions chirurgicales.

Conclusion : Malgré certains défis, l'introduction d'un cadre de gouvernance clinique a contribué à améliorer la sécurité et les résultats cliniques dans certains établissements. L'engagement politique et l'intégration au sein des structures existantes ont été essentiels à la réussite.

إدماج إطار للحوكمة السريرية في نظام التأمين الصحي الشامل في مصر

مجدي بكر، رحاب قنصوة، أحمد السبكي، ريهام الأسدي، نعيمة القصير، جاسر جاد الكريم، نبيل دويدار

الخلاصة

الخلفية: أجرت مصر إصلاحات كبيرة في النظام الصحي منذ سن قانون التأمين الصحي الشامل في عام 2018. وفي عام 2021، استحدثت الهيئة العامة للرعاية الصحية في مصر إطاراً للحوكمة السريرية من أجل تحسين جودة خدمات الرعاية الصحية ومأمونيتها.

الأهداف: هدفت هذه الدراسة إلى وصف تنفيذ إطار الحوكمة السريرية في مصر بين عامي 2021 و 2024 ومخرجاته المبكرة والدروس المستفادة من استحداثه.

طرق البحث: نفذنا إطار الحوكمة السريرية في 29 مستشفى و 301 وحدة لصحة الأسرة في 6 محافظات مصرية، لخدمة ما يقرب من 5 ملايين مستفيد. وشملت الأنشطة التدريب والدعم التقني في الموقع. وجمعت مؤشرات الأداء الرئيسية وحُللت لتقييم نتائج التنفيذ.

النتائج: وُضع ما مجموعه 494 بروتوكولاً علاجياً في 28 تخصصاً طبياً، ودُرّب أكثر من 5000 طبيب على تطبيق البروتوكولات. وكانت هناك زيادة في الكشف عن الأحداث الضارة وتصحيحها في الوقت المناسب في معظم الحالات. وفي عام 2023، كانت نسبة الأخطاء الدوائية التي كُشف عنها وصُحّحت 82 % في محافظة بورسعيد، و 84 % في محافظة الإسماعيلية، و 70 % في محافظة جنوب سيناء. وفي عام 2024، انخفضت الأخطاء الدوائية بنسبة 27 % في محافظة بورسعيد و 11 % في محافظة الأقصر. وارتفعت نسبة الالتزام بنظافة اليدين إلى 85 % في عام 2024 بعد أن كانت 78 % في عام 2023، وانخفضت التهابات في موضع الجراحة إلى 0.83 لكل 100 عملية جراحية بعد أن كانت 5 لكل 100 عملية جراحية.

الاستنتاجات: أسهم استحداث إطار للحوكمة السريرية في تحسين المأمونية والمخرجات السريرية في مرافق مختارة، على الرغم من بعض التحديات. ولقد مثل الالتزام السياسي وإدماج إطار الحوكمة في الهياكل القائمة أمرين حاسمين للنجاح.

References

1. National Academies of Sciences, Engineering, and Medicine. Crossing the global quality chasm: improving health care world-wide. Washington (DC): National Academies Press; 2018. <https://www.nap.edu/catalog/25152/crossing-the-global-quality-chasm-improving-health-care-worldwide>.
2. de Vries EN, Ramrattan MA, Smorenburg SM, Gouma DJ, Boermeester MA. The incidence and nature of in-hospital adverse events: a systematic review. *Qual Saf Health Care*. 2008;17(3):216–23. doi:10.1136/qshc.2007.023622.
3. Wilson R M, Michel P, Olsen S, Gibberd R W, Vincent C, El-Assady R, et al. Patient safety in developing countries: retrospective estimation of scale and nature of harm to patients in hospital. *BMJ*. 2012;344:e832. doi:10.1136/bmj.e832.
4. Jha AK, Larizgoitia I, Audera-Lopez C, Prasopa-Plaizier N, Waters H, Bates DW. The global burden of unsafe medical care: analytic modelling of observational studies. *BMJ Qual Saf*. 2013;22(10):809–815. doi:10.1136/bmjqs-2012-001748.
5. Eleiba Z. Universal health insurance in Egypt: informal workers' perspective. Cairo: Alternative Policy Solutions; 2020. <https://aps.aucegypt.edu/en/articles/452/universal-health-insurance-in-egypt-informal-workers-perspective>.
6. Mathauer I, Khalifa A, Mataria A. Implementing the Universal Health Insurance Law of Egypt: what are the key issues on strategic purchasing and its governance arrangements? Geneva: World Health Organization; 2018 (WHO/UHC/HGF/HFC Case Study/19.13). Licence: CC BY-NC-SA 3.0 IGO. <https://www.who.int/publications/i/item/implementing-the-universal-health-insurance-law-of-egypt-what-are-the-key-issues-on-strategic-purchasing-and-its-governance-arrangements>.
7. Centre for Global Health and Development. Egypt's health care system. 2021. <https://www.cghd.org/index.php/global-health-partnerships-and-solutions/profiles/43-egypts-health-care-system>.
8. The DHS Program. Chapter 2: overview of the health system in Egypt. Demographic and Health Survey Report. 13–19. <https://dhsprogram.com/pubs/pdf/SPA5/02chapter02.pdf>.
9. Thelwell K. 7 facts about healthcare in Egypt. The Borgen Project; 2020. <https://borgenproject.org/healthcare-in-egypt/>.
10. Gericke CA, Britain K, Elmahdawy M, Elsis G. Health system in Egypt. In: van Ginneken E, Busse R, editors. *Health care systems and policies*. New York (NY): Springer; 2018. https://link.springer.com/referenceworkentry/10.1007/978-1-4614-6419-8_7-2.
11. World Health Organization. WHO Country Cooperation Strategy: Egypt. Cairo: WHO Regional Office for the Eastern Mediterranean; 2018. <https://www.who.int/publications/i/item/WHO-CCU-18.02-Egypt>.
12. Khalifa AY, Jabbour JY, Mataria A, Bakr M, Farid M, Mathauer I. Purchasing health services under the Egypt's new Universal Health Insurance Law: what are the implications for universal health coverage? *Int J Health Plann Manage*. 2022;37(2):619–631. doi:10.1002/hpm.3354.
13. Al Bahnasy RA, Mohamed OA, El-Shazly HA, Abdel-Azeem AA, Khedr RM. The successes and the challenges of Egyptian health sector reform program. *Menoufia Med J [Internet]* 2016; 29:979–983. <https://www.menoufia-med-j.com/journal/vol29/iss4/27>.
14. Radwan G, Adawy A. The Egyptian health map: a guide for evidence-based decision making. *East Mediterr Health J*. 2019;25(5). <https://www.emro.who.int/emhj-volume-25-2019/volume-25-issue-5/the-egyptian-health-map-a-guide-for-evidence-based-decisionmaking.html>.
15. Australian Commission on Safety and Quality in Health Care. National safety and quality health service standards. 2nd ed. Sydney: ACSQHC; 2017. <https://www.safetyandquality.gov.au/publications-and-resources/resource-library/national-safety-and-quality-health-service-standards-second-edition>
16. Scally G, Donaldson LJ. The NHS's 50 anniversary. Clinical governance and the drive for quality improvement in the new NHS in England. *BMJ*. 1998;317(7150):61–65. doi:10.1136/bmj.317.7150.61. <https://pubmed.ncbi.nlm.nih.gov/9651278/>.
17. Som C. Clinical governance: a fresh look at its definition. *Clin Gov Int J*. 2004;9:87–90. doi:10.1108/14777270410536358.
18. Macfarlane AJR. What is clinical governance? *BJA Educ*. 2019 Jun;19(6):174–175. doi:10.1016/j.bjae.2019.02.003.