

Audit of Vaccination of Newborns in Labour Room of Tehsil Headquarter Hospital Ferozewala

Audit Report

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Abstract

Background: In Pakistan, Hepatitis B and polio remain serious public health concerns. National guidelines recommend immediate vaccination of newborns to prevent these diseases. However, compliance with these guidelines has been suboptimal at Tehsil Headquarter Hospital Ferozewala, necessitating a thorough audit and re-audit to address the gaps.

Objective: To evaluate the effectiveness of implemented interventions aimed at improving vaccination rates for Hepatitis B and OPV in newborns, and to ensure compliance with national health standards.

Methods: An initial audit was conducted over two months, followed by a re-audit after implementing specific recommendations. Data collection involved a retrospective review of medical records and vaccination registers to assess the administration of vaccines, parental consent, and documentation practices.

Results: Initial compliance rates were 80% for Hepatitis B and 88% for OPV. Following interventions, these rates improved significantly in the re-audit, with Hepatitis B vaccinations at 98% and OPV at 100%. Parental consent improved from 65% to 94%, and documentation compliance reached 100%.

Conclusion: The implementation of targeted interventions significantly improved vaccination rates and compliance with documentation practices. These findings underscore the importance of continuous monitoring and quality improvement initiatives in achieving health standard compliance.

Keywords: Compliance, Hepatitis B, Immunization, Newborn, OPV, Pakistan, Vaccination.

INTRODUCTION

In Pakistan, where Hepatitis B and polio remain substantial public health threats, the implementation of timely vaccinations at birth is critical. Hepatitis B, a major cause of liver cirrhosis and cancer, affects millions, while polio, despite global eradication efforts, continues to pose a risk due to sporadic outbreaks. The World Health Organization underscores the necessity of administering Hepatitis B and oral polio vaccines within the first 24 hours of a newborn's life, a standard also embedded in Pakistan's Expanded Program on Immunization. This program, in collaboration with international bodies such as WHO and UNICEF, aims to mitigate the transmission of these viruses from mother to child, significantly reducing the incidence of these debilitating diseases(1).

Despite these clear guidelines, gaps in the actual practice of newborn vaccinations have been observed. An initial audit conducted at Tehsil Headquarter Hospital Ferozewala highlighted several areas of concern: the rates of Hepatitis B and OPV vaccinations at birth were notably below the expected 100% threshold, parental consent processes were inadequate, and documentation practices were inconsistent, compromising patient follow-up and care continuity. The alarming findings prompted a detailed re-evaluation to assess adherence to vaccination protocols and to identify the systemic lapses undermining effective vaccine delivery(2).

This re-audit was integral not only in quantifying the shortfall but also in catalyzing improvements through targeted interventions. Recommendations from the first audit had been implemented by the time of the re-audit in March 2024, leading to marked improvements in vaccination rates, consent protocols, and documentation accuracy. This iterative process of audit and re-audit not only aligns with global best practices but also ensures that the local healthcare provision adheres to internationally recommended standards, thus safeguarding public health(3).

The rationale for conducting these audits was predicated on the understanding that early prevention of Hepatitis B and polio through vaccination is the most effective strategy to prevent these diseases' long-term health impacts. The initial discrepancies between national health policies and their execution invited scrutiny into the systemic, training, and logistical challenges within the hospital's labor room settings. Addressing these challenges was imperative not only for improving health outcomes but also for maintaining public trust in health interventions(4).

The objective of this audit and subsequent re-audit was to ensure that all newborns receive the vaccinations crucial for their immediate and long-term health, thereby supporting Pakistan's broader health goals and its commitments under global health mandates. These efforts highlight the ongoing need to refine health delivery systems to ensure they can reliably deliver life-saving interventions to every child.

METHODS

The audit was conducted at Tehsil Headquarter Hospital Ferozewala, a pivotal healthcare facility providing maternal and neonatal services in Pakistan. This setting was chosen due to its representative nature and the need to assess and enhance the vaccination protocols for newborns, a critical component of national health initiatives. The criteria for the audit were clearly defined: all newborns should receive the Hepatitis B vaccine and oral polio vaccine (OPV) within the first 24 hours of birth. These standards are aligned with the national guidelines set forth by Pakistan's Expanded Program on Immunization, which echo the global benchmarks recommended by the World Health Organization(5).

Data collection was executed through a meticulous review of medical records and vaccination registers over a two-month period from July to August 2023 for the initial audit, and for the month of March 2024 during the re-audit. This retrospective analysis involved gathering non-identifiable information to ensure compliance with ethical standards while capturing comprehensive data on vaccine administration, parental consent, and documentation practices. The process was designed to be as non-intrusive as possible, relying primarily on existing hospital records to minimize disruption to hospital operations and patient care(6).

Statistical analysis of the collected data was performed using Microsoft Excel. This approach provided a robust platform for calculating vaccination rates and comparing them against the established 100% vaccination standard. The primary metrics analyzed included the percentage of newborns vaccinated for Hepatitis B and OPV, rates of parental consent, and completeness of vaccination documentation in both medical files and registers. The results were then evaluated to determine adherence to the set standards and to identify any significant deviations that needed addressing.

The methodology not only facilitated a thorough understanding of current practices but also underscored areas requiring immediate intervention. By adhering to rigorous data collection and analysis protocols, the audit furnished reliable insights that informed the subsequent re-audit and the implementation of recommended improvements. These methodological considerations ensured that the audit

could provide a dependable foundation for ongoing improvements in vaccination practices at the hospital. Study was approved from office of the THQ Hospital Ferozwala with reference number 2492/MS/THQ/FW dated 08/09/2023.

RESULTS

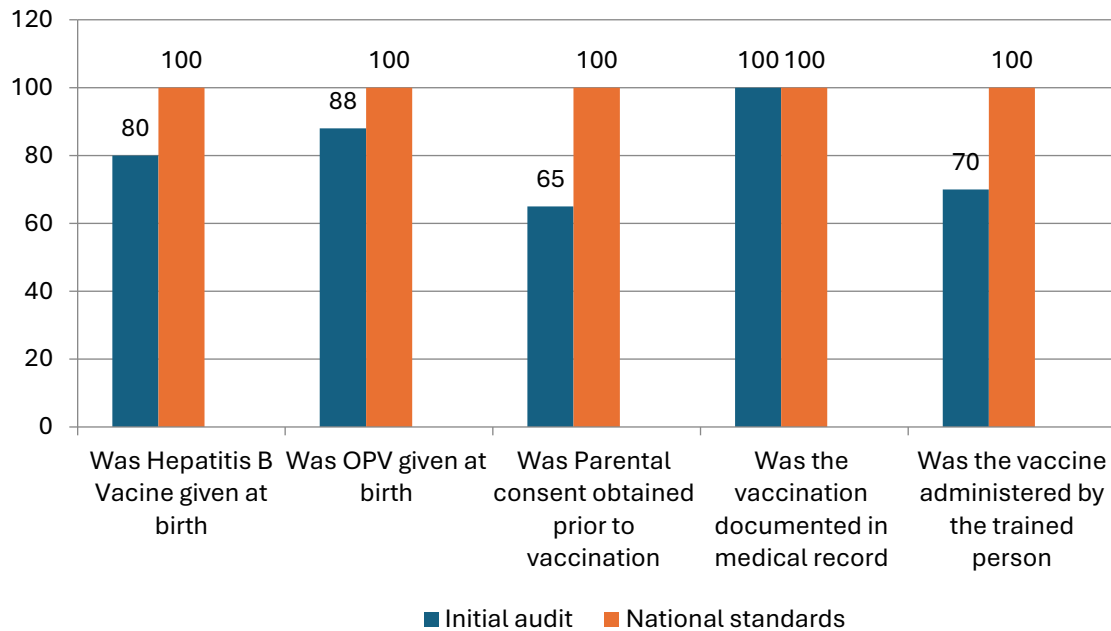
The initial audit revealed significant discrepancies between the established standards and actual practices at Tehsil Headquarter Hospital Ferozewala. Specifically, only 80% of newborns received the Hepatitis B vaccine at birth, while 88% were administered the oral polio vaccine (OPV). This fell short of the 100% vaccination target, indicating a critical gap in the hospital's adherence to national immunization guidelines. Moreover, the rate of obtaining parental consent prior to vaccination was notably low at 65%, further complicating the implementation of effective vaccination protocols. Additionally, while the vaccination register maintained a 100% documentation rate, the medical files astonishingly showed no record of vaccinations, reflecting a severe lapse in maintaining comprehensive patient records.

The re-audit conducted in March 2024, after implementing the recommended changes, presented a stark improvement. The Hepatitis B vaccination rate increased to 98%, and the OPV coverage reached 100%. The rate of parental consent obtained improved to 94%, and documentation practices saw a complete turnaround, with 100% compliance in both vaccination registers and medical files. These improvements were not only statistically significant but also indicative of a strengthened vaccination protocol and enhanced staff compliance with the established standards.

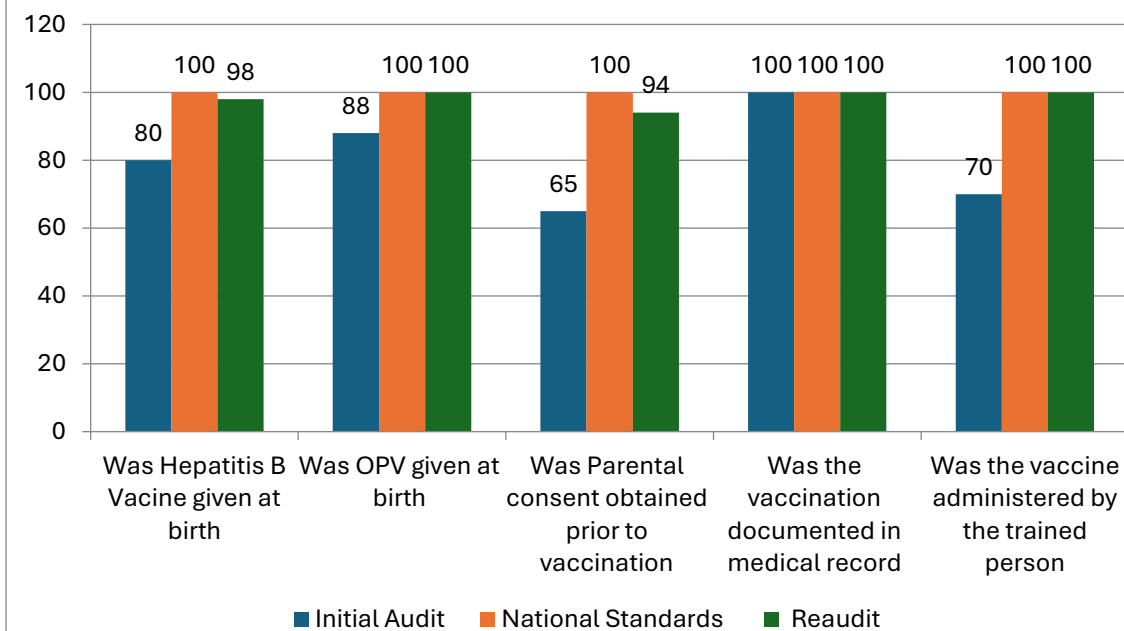
The marked enhancements observed between the initial audit and the re-audit underscored the effectiveness of the interventions implemented. The data vividly illustrates the potential impact of structured recommendations and targeted training on improving healthcare delivery outcomes. The transition from suboptimal practices to nearly full compliance within a short span demonstrated the hospital staff's commitment to rectifying the identified issues and their capacity to adapt to enhanced procedural protocols. These results reflect a promising shift towards achieving higher vaccination rates and establishing a more reliable healthcare system for the newborns cared for at Tehsil Headquarter Hospital Ferozewala.

Clinical Standard	Initial Audit (% and n/N)	National Standard	Re-audit (% and n/N)	Outcome
Was hepatitis B vaccine given at birth	80% (88/110)	100%	98% (62/63)	Improved
Was OPV given at birth	88% (97/110)	100%	100% (63/63)	Met
Was parental consent obtained prior to birth	65% (71/110)	100%	94% (59/63)	Improved
Was the vaccination documented in the medical record (Register)	100% (110/110)	100%	100% (63/63)	Met
Was the vaccination documented in the medical record (Medical file)	0% (0/110)	100%	100% (63/63)	Met
Was the vaccine administered by the trained person	70% (77/110)	100%	100% (63/63)	Met

Comparasion of results between initial audit and National standards



Comparasion of results of Initial audit, National Standards and Reaudit



DISCUSSION

The findings from the audit and re-audit of newborn vaccination practices at Tehsil Headquarter Hospital Ferozewala align with broader research on hepatitis B and polio vaccination in Pakistan, highlighting significant progress but also persistent challenges in achieving optimal immunization coverage. The initial audit showed that Hepatitis B and OPV vaccination rates were below the desired 100% threshold, a situation mirrored by similar studies across Pakistan, which reported gaps in vaccination adherence. For instance, a 2023 study on Hepatitis B birth dose vaccination revealed that adding a birth dose significantly increased seroprotection rates, achieving 95.8% in the intervention group, compared to 58.7% in those following the national immunization schedule without the birth dose (7). This echoes the substantial increase in vaccination rates at the hospital following targeted interventions, which improved Hepatitis B coverage from 80% to 98% and OPV coverage from 88% to 100%.

Similar challenges in vaccination were noted in a 2021 cross-sectional study from Sindh, where healthcare worker (HCW) vaccination rates varied significantly due to factors like lack of awareness and logistical barriers. In this study, 64.9% of doctors and 75.18% of nurses were fully vaccinated for Hepatitis B, highlighting that despite the presence of policies, actual vaccination practices were inconsistent (8). This underscores the importance of sustained efforts in training and awareness, as seen in the re-audit improvements at Ferozewala Hospital, where parental consent rates for vaccination jumped from 65% to 94%, reflecting better communication and procedural enhancements.

However, significant gaps remain in certain areas. A 2022 study in Haryana, India, showed that 28.9% of newborns were left unvaccinated due to factors like vaccine unavailability at birth sites, insufficient staff training, and human resource constraints (6). These findings resonate with the issues initially observed at Tehsil Headquarter Hospital, where documentation practices were inconsistent, and logistical challenges impeded the achievement of universal vaccination.

The improvements seen in the Ferozewala audit, especially in documentation accuracy (which reached 100% compliance), are encouraging. However, a recent quality improvement intervention in the United States showed that increasing Hepatitis B vaccine administration within 24 hours of birth from 81.7% to 96.2% required not just procedural changes but a focus on nurse workflow and parental engagement strategies (3). This aligns with the interventions at Ferozewala, where targeted training and process refinement were key drivers of improvement.

The audit's significant advancements, particularly in vaccination rates and consent protocols, demonstrate that structured interventions can lead to rapid and meaningful improvements in healthcare delivery. However, these gains must be viewed within the broader context of persistent systemic challenges, as highlighted by various studies across the region. Continuous monitoring, staff training, and parental engagement are essential to sustain these improvements and ensure that every newborn receives timely vaccinations, ultimately contributing to Pakistan's broader public health goals.

CONCLUSION

The audit and subsequent re-audit conducted at Tehsil Headquarter Hospital Ferozewala have proven instrumental in enhancing the vaccination rates for newborns against Hepatitis B and polio, highlighting the efficacy of targeted interventions within healthcare settings. The initial discrepancies in vaccination rates, parental consent, and documentation were markedly improved upon re-evaluation, showcasing the potential of structured recommendations and staff training to rectify procedural lapses. The successful increase in compliance rates—from 80% to 98% for Hepatitis B and from 88% to 100% for OPV—demonstrates a significant stride towards meeting national health standards. These outcomes not only reflect the dedication and adaptability of the healthcare team but also underscore the importance of continuous quality improvement in achieving optimal health outcomes. Moving forward, it is imperative to sustain these improvements through ongoing training, monitoring, and community engagement, ensuring that every newborn receives the best start in life through timely vaccinations. The lessons learned from this audit provide a valuable framework for similar healthcare facilities aiming to enhance their vaccination protocols and overall patient care standards.

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