

Donor Notification and Counselling: Problems and Prospects - An Institutional Study

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Abstract.

Background: Donor screening, pre and post donation counselling along with reactive donor notification contributes to safe blood transfusions. However, the notification and follow-up rates in India remains low or obscure.

Objectives: To determine the incidence of Transfusion Transmitted Infections (TTIs) among blood donors and assess response rate among the notified donors at a rural South Indian tertiary care.

Methods: 10,200 donations were screened and reactive donors were quarantined. The donors were contacted via a structured algorithm for notification and counselled. Outcomes of demographics, high risk behaviours and disease-wise contact / counselling were analysed.

Results: Seroreactivity of 2.79%, predominantly in older, married, male donors were noted. Response rate follows an inverse trend with age 53.3% in 26-35 age and vs 9.01% in 36 and above. HCV was more common followed by HBV, syphilis and HIV. While syphilis reactors were more easily traceable the counselling success was low in this group. HIV reactors though low in number had the highest counselling success. No risk factors could be identified in 18.9% of the donors.

Conclusion: Disease specific stigma, age and referral strength determines the success of the notification process, which highlights the need for individualization and disease specific counselling strategies.

Keywords: Donor Notification, reactive donors, TTIs.

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Introduction

The supportive care of medical or surgical patients significantly depends on the blood transfusion services. In spite of mandatory rigorous screening procedure for donor screening and testing methods, algorithms and modalities, ensuring safe transfusion remains a challenge. Unsafe transfusion practices predispose recipients to the risk of acquiring Transfusion Transmitted Infections (TTIs) [1,2].

The WHO states safe blood to be a universal right, and in the Indian scenario, the Drugs and Cosmetics Act (D&C Act), 1945, mandates all blood and blood products be screened for TTIs [1,3]. Eligible donors counselling and subsequent notification, wherever applicable, as per the current common guidelines [4,3]. It covers informing the serological status of the donor, transmission status, providing emotional support, and provisions for further assistance with respect to lifestyle modifications, treatment or investigations, and access to the required health care support [3].

A proper, efficient and targeted counselling can remove a reactive donor from an existing donor pool, thereby abridging the gap left by routine donor screening and counselling [5,6]. The current data in

India presents pointers to a low notification rate [1,2,7], while the aftermath of the notified donors and their treatment remain obscure [4,8].

Objectives

1. To study the incidence of TTIs among blood donors
2. To assess the response rate among notified reactive donors

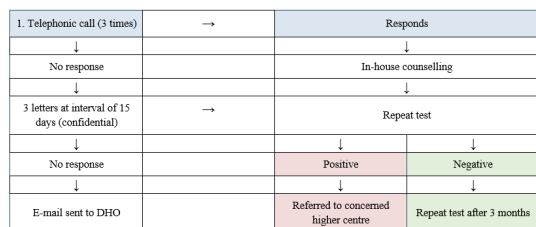
Materials and Methods

The study was carried out in our NABH accredited blood centre associated with NBEMS recognized teaching hospital. A trained counsellor or medical officer conducted pre-donation counselling aiming to screen for high-risk behaviours. The self-exclusionary section of the donor questionnaire encouraged the donors to opt for self-exclusion. Donors were explained that all donations were legally mandated for testing of five TTIs, namely HIV 1 & 2, HBV, HCV, Syphilis and Malaria, and a consent was taken for notifying abnormal results. Each step was done ensuring donor confidentiality. Post donor screening and Hb estimation, the donations were tested as follows:

1. HIV, HBV, HCV and Syphilis — CLIA

2. Reactive Malaria — Rapid Card
3. Donations reactive for Syphilis — TPHA or RPR (Reverse algorithm)
4. All donations for HIV, HBV, HCV — NAT — RBTC, Karnataka

Donations that came reactive at any stage were quarantined and discarded, as well as donors were contacted to be notified. The algorithm (Figure:1) followed for donor notification was as follows:



Referred to concerned higher centre, based on the reactive marker:

HIV	HBV / HCV	Syphilis	Malaria
↓	↓	↓	↓
ICTC	NVHCP	STD Clinics	Physician

Figure 1: Donor Notification algorithm.

Results

Out of the 10,200 blood donations screened during the study period, 285 donations (2.79%) (Table 1) were found transfusion-transmissible infections (TTIs), majority of the reactive donors were in the older age group and amongst married donors. (Table 1 and Table 2) while the response rate showed an inverse trend with middle age followed by younger age groups than older age groups at 53.3%, 31.6% and 9.01% respectively. (Table 2).

Table 1: Donor Demographics

Total Donors	male	female
10200	9050	1150
Reactive Donors		
285	200	85
Marital Status		
Married	165	
Unmarried	120	

Table 2 : Donor Responsiveness

Age	No of Reactive Donors	No of responders
18-25	60 (21%)	19 (31.6%)
26-35	103 (36.1%)	55 (53.3%)
36-60	122 (42.8%)	11 (9.01%)

In many donors the source of infection remained unknown (18.9%). The high-risk behaviours identified in included, multiple sexual partners in 51 (17.8%), intravenous drug abuse in 43 (15.1%), partner-acquired sexually transmitted disease in 34

(11.9%), and unsafe tattooing practices in 29 (10.1%) (Table 3).

Table 3: High Risk Behaviour

IV drug	43 (15.1%)
Multiple Sexual Partners	51 (17.8%)
Tattoos	29 (10.1%)
Unknown	54 (18.9%)
Through partners with STD	34 (11.9%)

Disease-wise, the highest reactivity was found to be HCV (108/10,200; 1.06%), followed by HBsAg (106; 1.04%), syphilis (61; 0.60%), and HIV (10; 0.10%). Most contact could be established with donors reactive for syphilis (96.72%) and HBsAg (92.45%), and lowest for HCV (85.18%). But this contact failed to convert to successful counselling in many with lowest for syphilis (16.9%), with HCV and HBsAg achieving counselling completion in 45.7% and 49.0% of contacted donors, respectively. Despite the low number HIV reactive donors successfully completed their counselling (55.6%). (Table 4).

Table 4 : Disease wise counselling

	Total Reactive	Contacted	Untraceable	Counselled	Nonresponsive
HIV	10 (0.10%)	9 (90%)	1 (10%)	5 (55.6%)	4 (44.4%)
HCV	108 (1.06%)	92 (85.18%)	16 (14.8%)	42 (45.7%)	50 (54.3%)
HBs Ag	106 (1.04%)	98 (92.45%)	8 (5.5%)	48 (49.0%)	50 (51.0%)
SYP HILI S	61 (0.60%)	59 (96.72%)	2 (3.28%)	10 (16.9%)	49 (83.1%)

Discussion

In our study cohort overall TTI seroreactivity rate of 2.79% (285/10,200) was observed with the predominance of reactivity among male, married, and first-time donors, which remains consistent with earlier Indian donor notification studies, [2,5]. The rising reactivity in older age group points more towards cumulative time of exposure to high risk behaviour and screening, while the markedly poor notification response among donors aged 36–60 years (9.01%), compared to the 26–35-year group (53.3%), suggests that older donors may be less accessible by telephone or less willing to engage once contacted. This observation emphasises the need for tailored age, age-appropriate counselling and contact strategies rather than a work for all notification strategies [1,4].

Among high-risk behaviours, it is notable that in nearly one-fifth of reactive donors (18.9%) no definite risk factor could be elicited, a finding that reflects the persistent limitation of self-reported donor history questionnaires in capturing true exposure, either due to stigma, denial, or genuine lack of awareness of risk. Identical findings were noted by Dholakiya et al., regarding intentional non compliance of certain seropositive donors in spite of several sessions of counselling.[3]. Multiple sexual partnerships and partner-acquired infection together accounted for close to 30% of reactive donations, underscoring sexual transmission as the dominant risk pathway in this population, while intravenous drug abuse (15.1%) and unsafe tattooing (10.1%), the latter concentrated among younger donors and often linked to unregulated back-alley parlours or melas, point to an evolving risk landscape that pre-donation counselling protocols must adapt to capture [1,2,3].

The disease-wise notification data reveal an important disconnect between successful donor contact and successful counselling: although syphilis-reactive donors were the most readily contactable (96.72%), fewer than one in five of these donors (16.9%) completed counselling, the lowest completion rate among all four infections. This gap likely reflects the comparatively lower perceived severity and stigma attached to syphilis relative to HIV, for which counselling completion was highest (55.6%) despite the smallest absolute caseload, a pattern consistent with prior Indian audits showing that donor engagement is influenced as much by the perceived gravity of the diagnosis as by the efficiency of the contact mechanism itself [7,6]. Comparable attrition between notification and confirmed follow-up has been reported across Indian centres: Dholakiya et al., studying a stand-alone voluntary-donor blood centre in Western India, found an overall reactivity rate of 0.58% (212/36,162), with 71.7% of reactive donors successfully notified but only 52.8% ultimately following up at the blood centre or referral facility, a

gap that widened further at the disease level, with HIV-reactive donors achieving 100% follow-up compared with only 34.9% for HBV-reactive donors [3]. This mirrors our own finding of markedly variable disease-wise engagement and reinforces that follow-up completion, not just initial contact, is the more meaningful marker of programme effectiveness [7,6,3]. In contrast, more resourced settings such as that described by O'Brien et al. in Canada achieved substantially higher rates of confirmed follow-up through structured donor registries and dedicated notification personnel [9], while Bhasker and Aluri, working in a private multi-specialty Indian setting with closer institutional referral linkages, likewise reported comparatively better outcomes than many public-sector or rural centres [8].

Taken together, these findings suggest that notification success in resource-limited settings is not merely a function of donor traceability but is shaped by disease-specific stigma, donor age, donor education and awareness, and the strength of institutional referral pathways [4,3,8]. As emphasised by Chandrashekar and Kantharaj, notification is inherently a double-edged process that must balance public health benefit against the potential psychological burden on the individual donor [4], while the notification error reported by Kotwal et al. serves as a reminder that robust identity verification and quality checks are indispensable safeguards in this process [10]. Strengthening age- and infection-specific counselling strategies, improving donor traceability, and reinforcing quality assurance at every step of notification are likely to narrow the gap between contact and completed counselling observed in this study.

Conclusion:

Donor notification is an essential but overlooked aspect in blood transfusion. Individualised and disease specific counselling strategies can ensure more responsiveness from the donors. Thereby assuring safe transfusion of blood and blood products.

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