

BMJ Open Healthcare professional perceptions of family-centred rounds in French NICUs: a cross-sectional study

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ABSTRACT

Objective To assess the perceptions of healthcare professionals (HCPs) regarding parental presence at medical rounds in French neonatal intensive care units (NICUs). We hypothesised that HCPs would perceive barriers against allowing parental participation in round discussions.

Methods This cross-sectional study approached 304 HCPs from three groups; group 1: French professionals that attended an annual French-speaking meeting of the Neonatal Individualized Developmental Care and Assessment Program (NIDCAP); group 2: NICU professionals from a tertiary care academic hospital in western France; and group 3: paediatric residents from six French universities. We invited all HCPs to complete a questionnaire about medical round practices and their perceptions towards parent participation in family-centred rounds (FCRs).

Results Of the 176 (58%) questionnaires returned, 159 were included in the analysis. The majority of medical rounds took place at the bedside for groups 1 and 3 (68%, 95% CI 54 to 80 and 71%, 95% CI 56 to 84, respectively) and in a conference room for group 2 (65%, 95% CI 51 to 78). Overall, respondents positively perceived FCR for themselves, parents and students. However, most respondents agreed with the following claims: 'Parental attendance at medical rounds prevents some discussions between health professionals' (66%, 95% CI 57 to 73), 'FCR increases round durations' (63%, 95% CI 55 to 71) and 'Some decisions made during medical rounds may be stressful for parents' (51%, 95% CI 42 to 59). Nevertheless, responses varied significantly according to NIDCAP training and NICU experience and consequently group 1 displayed a significantly more positive attitude than other groups ($p < 0.001$); they expressed less concern about potentially inhibiting discussions between HCPs ($p < 0.001$), the feasibility ($p = 0.02$) and prolonged round durations ($p < 0.001$). Several difficulties and facilitators of FCR implementation were variously reported, but all groups agreed that routine workload was an important difficulty and that medical leadership would be an important facilitator.

Conclusion French HCPs expressed rather positive perceptions towards parental presence in NICU rounds. However, some concerns need to be addressed.

INTRODUCTION

High-risk newborns are hospitalised for many weeks in neonatal intensive care

Strengths and limitations of this study

- This is the first study on family-centred round (FCR) conducted among French healthcare professionals (HCPs), which brings new data on perceptions of HCPs, including physicians, residents and Neonatal Individualized Developmental Care and Assessment Program-trained professionals.
- This study is among the few studies that examined a priori perceptions of parental presence at medical rounds and in the neonatal intensive care unit.
- This study is part of a larger research project that aims to address social psychology theories in FCR development and implementation strategies.
- Despite a few open-ended questions, this cross-sectional study could not address, in detail, professional concerns regarding a parental presence at medical rounds.
- Only bivariate analyses were conducted, which limited our understanding of relationships between perception variables.

units (NICUs). This hospitalisation creates a parent–child separation that can negatively impact the attachment and bonding processes. Separation is also a risk factor for acute and post-traumatic stress disorder in parents.^{1–3} In turn, this traumatic experience can negatively influence the parental presence in the NICU. However, parental presence in the unit appears to be positively influenced by playing an active role in their infant's care and establishing efficient communication with staff members.^{4,5}

A family-centred care approach supports parental involvement in the care of their baby. The core concepts underpinning this approach are respect and dignity, parent participation in the care and decisions concerning the baby, information sharing and collaboration with professionals.⁶ The daily medical round is an important time when healthcare professionals (HCPs) share information and make decisions. It has been suggested that family-centred rounds (FCRs) could provide an opportunity for sharing

Table 1 Sociodemographic characteristics of healthcare professional (HCP) respondents

	Total (n=159)	Group 1 (n=60)	Group 2 (n=53)	Group 3* (n=46)	p Value
Age, years, mean±SD	33±7.7	38±8.6	32±5.3	27±1.7	<0.001†
Female, %	96	95	96	98	0.75‡
Position, %					<0.001§
Nurse	48	63	75	nr	
Medical resident	30	0	0	100	
Physician	13	23	12.5	nr	
Allied health professional	9	13	12.5	nr	
Parent with children, %	57	88	59	15	<0.001§
NICU experience>5 years, %	53	91	53	nr	<0.001§
NIDCAP-trained or in-training, %	48	81	8	nr	<0.001§

Group 1: HCPs were NIDCAP-certified or in-training; group 2: HCPs from one university hospital; group 3: paediatric residents from the western French universities network.

*Not included in comparisons regarding qualification, experience and NIDCAP.

†Analysis of variance.

‡Kruskal-Wallis test.

§ χ^2 test.

NICU, neonatal intensive care unit; NIDCAP, Newborn Individualized Developmental Care and Assessment Program.

the decision-making process with parents.⁷ The FCR is a multidisciplinary round, which occurs inside or near the patient's room, in the presence of parents. The FCR aims to integrate parent perspectives and preferences into clinical decision-making.⁸ Research from North American paediatric settings has pointed out that FCRs positively impacted family satisfaction and fostered teamwork.^{9–11} Consequently, the American Academy of Paediatrics recommends that FCRs should be a standard practice.¹²

Less is known about the FCR in specific paediatric settings, like the NICU,^{13–15} and in other national and cultural environments. Given the observed national differences in practices involving parents during NICU hospitalisation^{16 17} and cultural differences in communications and relationships between people, the feasibility of implementing FCR in France is unknown. Moreover, little evidence is available on the clinical outcomes of FCR implementation.^{14 18}

To consider both cultural preferences and FCR effectiveness in the process of implementing the FCR in a French NICU, we opted to develop the FCR in France with the Intervention Mapping (IM) protocol.¹⁹ This protocol provides health planners with methodological guidance in developing theory-based and evidence-based programmes. Specifically, it provides tools to select social and behavioural sciences theories, bridge these theories with practice and develop programme activities and materials. The overall perspective of the IM protocol is ecological; that is, it considers the multilevel determinants that influence the health problem. Consistent with this approach, we have recruited multidisciplinary stakeholders (users, multilevel administrators and researchers) to become involved across a six-stage iterative process to develop and plan programme implementation and evaluation. This present study is part of the first stage of the

IM protocol. This stage consists of conducting a detailed needs assessment for users and implementers, based on literature searches and data collection. The purpose of this stage is to gain insight into the health problem (eg, the trouble of parent–infant bonding in the NICU), including the behavioural (eg, parental absence at bedside) and environmental (eg, difficult parental accessibility in the ward) factors that cause the problem and to gain insight into the multilevel determinants of these factors.

The aims of this study were to assess in French NICUs the current practice regarding parental presence at medical round and to survey French HCPs on their perceptions about this presence.

METHODS

This cross-sectional study was conducted between May and October 2014 in France. It involved three groups of HCPs that were selected by availability. Group 1 included 84 French individuals that participated in the annual, French-speaking, Newborn Individualized Developmental Care and Assessment Program (NIDCAP) meeting. Group 2 included the 70 HCPs in the NICU of a tertiary care academic hospital in western France. Group 3 included 150 paediatric residents from the western French universities network (Hôpitaux Universitaires du Grand Ouest).

Participants were invited to complete an anonymous questionnaire, which included a short introduction, with a definition of medical round practices, and a list of items about personal characteristics, daily practices in their own NICUs and personal opinions on FCRs (see online supplementary file). To elicit the personal opinions, the HCPs rated seven statements on a five-point Likert scale that

ranged from strongly disagree to strongly agree, and space was provided to collect comments from respondents. Two additional items were included to explore potential facilitators and barriers of the FCR; these were coded in a checkbox list. The pilot questionnaire was tested with the help of the Hospital Quality Improvement Office on a sample of five HCPs and modified for a better clarity of the question wording.

Hardcopies of the questionnaire were directly distributed to group 1 and 2 members. Participants were invited

to complete and return the survey. Group 3 members were invited by email to participate in a web-based survey through the Survey Monkey service (Palo Alto, California, USA).

Data were entered, double checked, cleaned, coded and analysed with Epi-Info V.3.5.4 (CDC Atlanta, Georgia, USA). Typical quantitative analyses were performed. For comparing groups, the χ^2 or analysis of variance or Kruskal-Wallis tests were performed. The traditional (two-tailed) 5% level of significance was used

Table 2 Ranking of overall respondent perceptions about family-centred round (FCR)

Statements	Strongly agree/agree (%)	Neutral (%)	Disagree/strongly disagree (%)	p Value*
FCR is beneficial for parents				
Group 1 (n=60)	100	0	0	<0.001
Group 2 (n=52)	67	23	10	
Group 3 (n=39)	84	13	3	
Overall (95% CI)	85 (78 to 90)	11 (7 to 17)	4 (2 to 8)	
FCR is beneficial for HCP				
Group 1 (n=60)	97	3	0	<0.001
Group 2 (n=52)	62	25	13	
Group 3 (n=39)	64	33	3	
Overall (95% CI)	76 (69 to 83)	19 (13 to 26)	5 (2 to 10)	
FCR is beneficial for students				
Group 1 (n=56)	88	12	0	<0.001
Group 2 (n=52)	56	31	13	
Group 3 (n=39)	56	39	5	
Overall (95% CI)	68 (60 to 76)	26 (19 to 34)	6 (3 to 11)	
Parental attendance at medical round inhibits some discussions between HCP				
Group 1 (n=59)	42	34	24	<0.001
Group 2 (n=53)	81	9.5	9.5	
Group 3 (n=39)	79	18	3	
Overall (95 CI)	66 (57 to 73)	21 (15 to 29)	13 (8 to 20)	
FCR is feasible in NICU				
Group 1 (n=60)	78	17	5	0.02
Group 2 (n=53)	55	32	13	
Group 3 (n=39)	59	26	15	
Overall (95 CI)	65 (57 to 73)	24 (18 to 32)	11 (6 to 17)	
FCR increases round duration				
Group 1 (n=58)	40	40	20	<0.001
Group 2 (n=52)	77	21	2	
Group 3 (n=39)	80	13	7	
Overall (95% CI)	63 (55 to 71)	26 (19 to 34)	11 (6 to 17)	
Decision-making in the presence of parents may generate anxiety in parents				
Group 1 (n=58)	34	26	40	<0.01
Group 2 (n=53)	64	23	13	
Group 3 (n=39)	56	21	23	
Overall (95% CI)	51 (42 to 59)	23 (17 to 31)	26 (19 to 34)	

*Kruskal-Wallis test.

HCP, healthcare professional; NICU, neonatal intensive care unit.

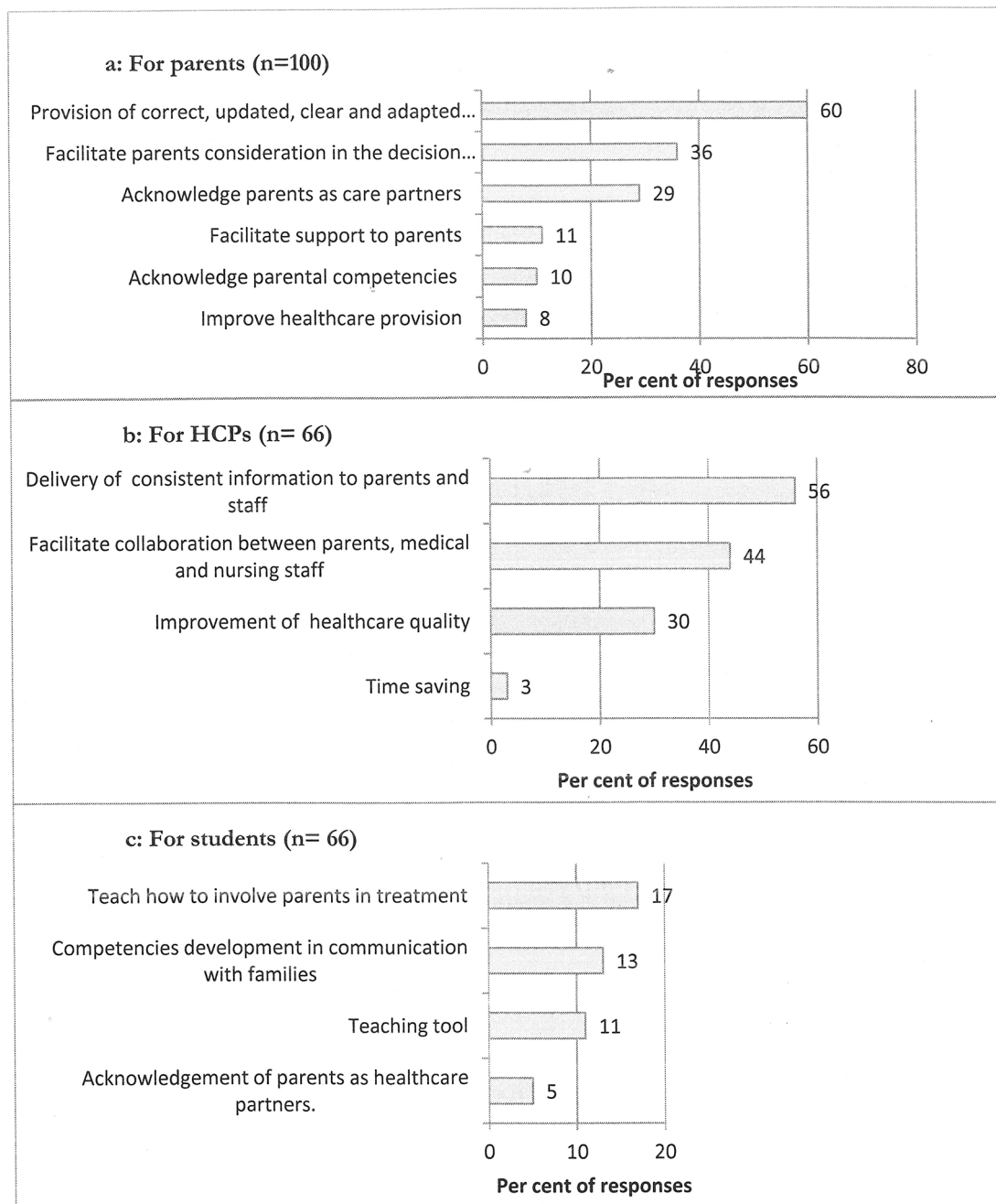


Figure 1 Perceived benefits, reported by respondents (n) in open spaces provided for text. HCPs, healthcare professionals.

to indicate statistically significant differences. Because group 2 included staff from a single hospital, statistical comparisons regarding medical round practices were not considered relevant; hence, these comparisons were not performed. Similarly, group 3 participants were not included in comparisons regarding professional and NIDCAP experiences. Open-ended questions coding consisted first in screening similar sentences by manually colour coding. Keywords from similar sentences were then grouped under a specific theme. A thematic list was obtained with corresponding keywords that were then manually quantified. Whenever the same colour code was repeated for a respondent, the colour code was counted only once.

RESULTS

Of the 304 invited HCPs, 90%, 76% and 31% returned questionnaires in groups 1–3, respectively (n=176). In group 1, 17 participants (22%) were Belgian HCPs. Therefore, consistent with the objectives of this study, only French HCPs (n=159) were included in the following analyses.

Respondents' characteristics are shown in [table 1](#). Nearly one-half of participants were nurses. Compared with group 2 respondents, group 1 respondents were significantly more likely to be experienced in neonatology and either NIDCAP-certified or in-training.

Medical rounds were mainly held in a conference room for group 2 respondents (65%, 95% CI 51 to 78) and

Table 3 Respondent perceptions, analysed according to three types of respondent characteristics

Statements	Being parent (n=146)		NIDCAP-trained* (n=110)		NICU experience* (n=106)	
	Yes	No	Yes	No	<5years	>5years
Parental attendance at medical round inhibits some discussions between HCP						
Strongly agree/agree	45 (52%)	50 (83%)	22 (44%)	71 (76%)	54 (83%)	40 (50%)
Neutral	23 (27%)	8 (13%)	16 (32%)	15 (16%)	7 (11%)	24 (30%)
Disagree/strongly disagree	18 (21%)	2 (3%)	12 (24%)	8 (8%)	4 (6%)	16 (20%)
p Value†	<0.001		<0.001		<0.001	
FCR increases round duration						
Strongly agree/agree	Not tested		18 (37%)	71 (76%)	48 (76%)	41 (51%)
Neutral	Not tested		19 (39%)	18 (19%)	12 (19%)	26 (33%)
Disagree/strongly disagree	Not tested		12 (25%)	4 (4%)	3 (5%)	13 (16%)
p Value†			<0.001		<0.01	
Decision-making in the presence of parents may generate anxiety in parents						
Strongly agree/agree	39 (46%)	35 (58%)	13 (26%)	60 (64%)	43 (66%)	31 (39%)
Neutral	21 (25%)	12 (20%)	14 (29%)	18 (19%)	12 (19%)	21 (27%)
Disagree/strongly disagree	25 (29%)	13 (22%)	22 (45%)	16 (17%)	22 (15%)	27 (34%)
p Value†	0.33		<0.001		<0.01	

*Group 3 was excluded from this analysis.

† χ^2 test.

FCR, family-centred round; HCP, healthcare professional; NICU, neonatal intensive care unit; NIDCAP, Neonatal Individualized Developmental Care and Assessment Program.

mainly at the bedside for groups 1 and 3 (68%, 95% CI 54 to 80 and 71%, 95% CI 56 to 84, respectively). Up to 94% of respondents from each group reported that parents had 24-hour ward access, including during nursing care periods.

Table 2 shows the ranking of perceptions and differences between groups. Overall, FCR was perceived as beneficial and feasible for parents, HCPs and students. Group 1 reported a significantly more positive perception of the benefits of FCR and anticipated fewer limitations than groups 2 and 3.

Figure 1 summarises the results of the content analyses; it shows the perceived benefits of FCR for parents, staff and medical students. The main perceived benefit for HCPs and parents was providing better information to parents and staff. The main perceived benefit for students was better liaising with parents.

Table 3 shows the variations in perceptions, according to the personal characteristics of respondents. Compared with other respondents, respondents that had children, were NIDCAP-trained or had NICU experience >5 years were more likely to perceive benefits and less likely to harbour reservations about implementing FCRs.

Table 4 summarises the perceived barriers and facilitators to implementing FCRs. These items were selected by respondents from a list of suggested items. Perceptions of barriers varied across groups, except for NICU routine (ranked first), parent reluctance (ranked last) and the complexity of the infant's medical condition. Perceived facilitators were similar across groups, except for the extent to which establishing a planning group was

necessary. Financial resources were never selected as a potential facilitator.

Among the 30 respondents that used the open space to comment on the suggested list of barriers, 20 insisted on organisational issues. Specifically, they raised concerns about FCR feasibility in the context of limited staff numbers; room sharing (which could preclude patient confidentiality); parental availability and compliance with some NIDCAP principles, such as noise reduction. Seven respondents also pointed out that a lack of communication skills and a reluctance to change the medical hierarchy may cause problems in the FCR. Lastly, six respondents had concerns about addressing specific topics with parents, such as death or poor social conditions. Similarly, 24 respondents made final comments, which confirmed that important issues for HCPs were organisation (14/24), staff compliance (6/24) and, to a lesser extent, parental availability (2/24).

DISCUSSION

In this study, we investigated the daily practice of medical rounds and the perceptions of French NICU HCPs about FCRs. Our results suggested that medical rounds are mainly conducted in French NICUs at the bedside, without active participation of parents, even when families had 24-hour access to the unit. Most respondents believed that the FCR could have a positive impact on parents, staff and students. Perceptions of the potential benefits, barriers and facilitators were highly associated with the amounts of NICU experience, NIDCAP training and personal experience as a parent.

Table 4 Overall ranking of perceived barriers and facilitators for family-centred rounds and group differences

	Overall (n=159)	Group 1 (n=60)	Group 2 (n=53)	Group3 (n=46)	p Value*
Barriers					
Workflow	94 (59%)	38 (63%)	30 (57%)	26 (57%)	0.71
Medical staff reluctance	81 (51%)	46 (77%)	15 (28%)	20 (44%)	<0.001
Lack of time	66 (42%)	13 (22%)	27 (51%)	26 (57%)	<0.001
Medical condition complexity	54 (34%)	16 (27%)	22 (42%)	16 (35%)	0.25
Nursing staff reluctance	52 (33%)	28 (47%)	17 (32%)	7 (15%)	0.003
Patient confidentiality	50 (32%)	22 (37%)	23 (43%)	50 (11%)	0.001
Parental stress	43 (27%)	11 (18%)	24 (45%)	8 (17%)	0.001
Parental reluctance	10 (6%)	3 (5%)	6 (11%)	1 (2%)	0.15
Facilitators					
Medical leadership	88 (55%)	38 (63%)	25 (47%)	25 (54%)	0.22
Working group	80 (50%)	40 (67%)	27 (51%)	13 (28%)	<0.001
Training	63 (40%)	19 (32%)	20 (38%)	24 (52%)	0.09
Visiting units that have implemented family-centred rounds	39 (25%)	13 (22%)	16 (30%)	10 (22%)	0.5
Supplementary staff	13 (8%)	2 (3%)	5 (9%)	6 (13%)	0.17
Financial resource	0 (0%)	0 (0%)	0 (0%)	0 (0%)	-

* χ^2 test.

This was the first study to investigate FCRs in French-speaking European settings; we reported new data on the perceptions of HCPs, including physicians and residents. This study was also the first to examine NIDCAP training in relation to professional perceptions towards FCR. Response rates were high (90% and 76%), except for the group of residents (31%) that received questionnaires by email. A similar low rate of return was previously reported by Rappaport *et al.*²⁰ for an online questionnaire for residents. Questionnaires included open-ended items to allow participants to express unlisted concerns. Nevertheless, this study had some limitations. First, our sample was not representative of all French NICUs; hence, we did not assess the prevalence of French FCR practices. Second, questionnaires were based on themes that were previously reported in the literature. These themes might have guided responses and limited exhaustive expression of perceptions in the open-ended questions. Third, due to the small sample, no correlation analyses were performed to explore relationships between responses to items that may be linked, such as workflow and time challenges.

In considering our results, it is worth noting that few previous authors have reported on HCP perceptions prior to FCR implementation in the NICU, and few reported results with CIs.^{21 22} Thus, we could only compare our study with a limited number of previous studies.

In evaluating the perceived benefits for parents, we observed positive, rather than negative attitudes towards parent presence, even though no respondent in our sample had experienced FCR. Our results were similar to those from previous studies that assessed professional

perceptions based on differential responses before and after experiencing the family presence at rounds. For instance, Mittal *et al.*²² surveyed 265 US and Canadian paediatric hospital personnel, mostly attending physicians, and of these, half had had previous experience with FCRs. That study reported a higher proportion of perceived benefits for parents (increased family involvement, improved patient/family understanding of discharge goals) than perceived barriers (round team size, confidentiality). They also reported that professionals that had experienced FCRs perceived higher benefit/barrier ratios than those with no FCR experience. Similarly, a previous cross-sectional study was conducted with 81 parents, 28 residents, 39 senior medical students and 57 nurses, in a Canadian NICU, after parental involvement in the round. In that study, Grzyb *et al.*¹³ reported that nurses perceived an improvement in communication with parents, but students had mixed views on the impact of FCR on parents. Improvement in information sharing was also perceived by HCPs in an Australian crossed-over randomised trial without any significant parents' stress measured by the NICU Parental Stressor Scale.¹⁵ Conversely, our results differed from those of McPherson *et al.*²¹ who surveyed 79 physicians, nurses and allied professionals with no FCR experience, in a US paediatric intensive care unit. They reported perceptions that FCRs would have more negative (harmful, threat to patient confidentiality) than positive (parent benefits) effects on parents.

In evaluating the benefits of FCRs for HCPs, McPherson *et al.*²¹ also reported more perceptions of negative (discussion inhibition, increased round duration) than positive

effects (parents providing knowledge about their child to the staff). Conversely, Mittal *et al*²² reported a higher proportion of positive perceptions (effective team communication, effective discharge/unit workflow, efficient time management for physicians) than negative perceptions (longer round durations, low buy-in from other physicians and hospital staff members, negative impact on nursing and physician workflows). In contrast to those studies, our respondents expressed equal levels of positive and negative perceptions. Specifically, they pointed out a priori concerns similar to those described by Mittal²² and McPherson *et al*,²¹ related to NICU routine, in general, and in particular with longer round durations, inhibited discussions between HCPs and staff reluctance in engaging collectively in FCRs. Nevertheless, there is evidence that most of these a priori concerns may disappear after experiencing the FCR. For instance, Grzyb *et al*¹³ reported that, after FCR implementation, nurses preferred parental presence at rounds, they spent less time explaining the patient's status and care plan, and a majority of nurses perceived that longer round durations were not an issue. However, nurses continued to report that FCRs inhibited discussions among staff. Muething *et al*¹¹ reported that, after 1 year of FCR implementation at the Cincinnati Children's Hospital, the excess time spent in round duration was later compensated with less need to obtain clarification from residents and answer new questions from families. In a before/after cross-sectional study conducted with about 102 NICU staff, Voos *et al*¹⁴ reported that, after 6 months of FCR implementation, satisfaction and collaboration scores improved among nurse practitioners and fellows, but not among other staff.

In evaluating the benefits of FCR for medical students, our results were consistent with those of Mittal *et al*,²² but differed from those of McPherson *et al*.²¹ In particular, parental presence at rounds was overall perceived as a teaching opportunity for students, rather than a barrier to teaching time. However, in our study, residents were less convinced that FCR could be beneficial to them. Grzyb *et al*¹³ also reported mixed views from students after experiencing FCR. These mixed views from a resident's perspective may be explained by the ways that teaching and student duties changed with FCRs. For instance, Rappaport *et al*²⁰ surveyed 28 paediatric residents with 15.5 weeks of multidisciplinary rounds experience; they found that residents appreciated the presence of the attending physician and families at rounds because it improved relationships with staff members. However, they also reported that FCRs improved non-didactic teaching, at the expense of didactic teaching, and that residents feared presenting full cases in front of families. Similarly, in a pre-survey and post-survey at a US university hospital, Cox *et al*²³ reported positive attitudes of residents towards FCRs. They concluded that FCRs provided a real opportunity for teaching, except in developing physical examination skills. Grzyb *et al*¹³ also reported that students felt particularly self-conscious when announcing a difficult diagnosis.

Lastly, as reported by others,^{13 14 21 24–26} in our study, FCR perceptions varied across the ranges of respondent expertise (students vs qualified professionals) and personal profiles (with/without children, extent of experience, with/without NIDCAP training).

Our results had several implications for the development and implementation of FCRs in a French NICU. First, unlimited parental access to the NICU and a rather positive *perception* of the impact of FCRs suggested a positive trend in the acceptance of parents in the units. Second, the facts that this trend was not yet associated with parental acceptance during medical rounds, and that our respondents had mixed perceptions of the advantages and disadvantages of FCRs for themselves, suggested that staffs may not be ready to implement FCRs. Nevertheless, as recommended by the IM protocol, combining a literature search with our data and with behaviour-orientated theories revealed some key elements that might alleviate negative perceptions. Specifically, our observed a priori concerns have been described by others, but have been rarely reported after FCR implementation. This finding suggested that disseminating FCR experiences from others might contribute to changing staff perceptions. This suggestion is consistent with a construct of Social Cognitive Theory (SCT) developed by the social psychologist, Albert Bandura,²⁷ to understand and predict behaviour. SCT proposes that, for people to adopt, implement and maintain a new practice, they must be aware of the innovation, have some expectations about it and have a sufficient sense of self-efficacy and behavioural capabilities. In turn, this theory indicates that, to promote change, constructs other than awareness must be considered. For instance, to alleviate the differing attitudes among staff towards implementing the FCR, it may be critical to address the behavioural capability of students, who foresee their future responsibility of announcing a diagnosis to parents in the presence of other staff. Strategies for addressing capability issues may rely on delivering training designed specifically for different professional categories. Moreover, the variability we observed in perceptions among individuals with different qualifications, NIDCAP training, ages and parenting experience, suggested that any actions taken to modify perceptions should be tailored to specific staff profiles. For instance, NIDCAP-trained professionals are familiar with the necessity of developing a close relationship and partnership between parents and staff members²⁸; therefore, these individuals might not require as much information about FCRs as younger staff; rather, they may be useful ambassadors of an FCR implementation. This suggestion is consistent with recommendations made by Moore *et al*²⁹ for developing the FCR. It is also consistent with the Diffusion Innovation Theory (DIT), an extension of the SCT developed by Rogers³⁰ which acknowledges that people may be at various stages of readiness for a behaviour change.

This study is the first stage of a six-stage iterative process to develop and plan programme implementation and evaluation, based on the IM protocol. Here, we assessed HCP perceptions of FCRs because HCPs are the future

implementers of FCRs. The next steps are to specify the change objectives for professionals and to develop strategies to facilitate HCP adoption and FCR integration into the clinical routine. These strategies will be based on constructs of both the SCT and DIT, which appear appropriate for addressing professional needs. On the other hand, parents are also future users of the FCR. Thus, parental perceptions of FCRs must also be considered in planning a model of FCR implementation that matches the needs of both French parents and professionals. A needs assessment of parents in our NICU is currently under way, and the results will be reported at a later time. Similar to the HCP assessment, the parent assessment will lead to specifications for change objectives and to the strategic development of actions, based on constructs of a behaviour-oriented theory that best fit parental needs.

CONCLUSION

This study added to the paucity of studies on FCRs in French NICUs. This study showed that HCPs appeared to perceive the benefits of FCRs for families; however, they also expressed some concerns with respect to the practical implementation of FCRs into the clinical routine. These mixed perceptions merit attention because professionals are key actors in FCR implementations, and their concerns must be heard to ensure the development of feasible, sustainable and effective FCRs.

Contributors All authors contributed to the preparation of the manuscript. VT and JS contributed to funding applications, interpretation of results and drafting and editing the manuscript. JS conceived the study and design and contributed to data collection for all groups of participants. VT undertook data entry and cleaning, performed the statistical analysis and drafted the 'Methods and results' sections. MLC contributed to the questionnaire design, data collection and analysis and preliminary results diffusion. JMR contributed to data analysis and editing the manuscript.

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