

# How To Fall Into A New Routine: Factors Influencing The Implementation Of An Admission And Discharge Program In Hospitals And General Practices

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## Research Article

**Keywords:** implementation, admission management, discharge management, hospital, general practice, routine, middle management

**Posted Date:** February 17th, 2022

**DOI:** <https://doi.org/10.21203/rs.3.rs-1343071/v1>

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# Abstract

**Introduction:** The VESPEERA programme is a multifaceted programme to enhance information transfers across the whole process from admission, stay and discharge from the hospital to general practice. It was implemented in 7 hospitals and 72 general practices in Southern Germany. Intervention fidelity was heterogeneous, but overall low. A process evaluation aimed at identifying factors associated with the implementation of the VESPEERA programme.

**Methods:** This was a qualitative study, using semi-structured interviews, in a purposeful sample of health workers in hospitals and general practices in the VESPEERA programme. Qualitative framework analysis using the Consolidated Framework for Implementation Research was performed and revealed the topic of previous and new routines to be protruding. Then, content analysis was used and an inductive set of four stages to describe the process of staying in a previous or falling into a new routine by implementing the VESPEERA programme was developed.

**Results:** Thirty-six interviews were conducted with 17 participants from general practices and 19 participants from hospitals. The interviewees were in different stages of the implementation process at the time of the interviews. The four stages are as following: Stage 1, "Previous routine and tension for change", describes the initial setting in which VESPEERA was to be implemented and the factors leading to the decision to participate. In stage 2, "Adoption of the VESPEERA programme", factors that influenced whether individuals decided to employ the innovation is described. Stage 3 comprises "Determinants for falling into and staying in the new VESPEERA-routine", and finally, in stage 4, the participants reflect on the success of the implementation.

**Conclusions:** The individuals and organisations participating in the VESPEERA programme were in different stages of a from the previous to the new routine. These stages were characterised by different determinants to implementation. Emerging topics were related to organisational characteristics, such as size of the organisation, hierarchy, and leadership. Developing a new routine was identified as beneficial for implementation the innovation.

**Trial Registration:** DRKS00015183 on DRKS / Universal Trial Number (UTN): U1111-1218-0992

## Introduction

Care transitions are challenging and can pose a threat to continuity of care and patient safety [1, 2]. One highly relevant care transition is the one from hospital to home, which, if not carried out well, might result in hospital readmissions, amongst others. There is a multitude of studies aiming to improve health care at this interface, yet the evidence is inconclusive. Furthermore, the transition from home to the hospital is not well researched [3–6]. The VESPEERA programme for hospital admissions and discharges addressed this issue by involving primary care teams in a multifaceted intervention to enhance information transfers across the whole process from admission by the general practice, the hospital stay and discharge up to

follow-up care by the general practice. The VESPEERA programme was implemented in 7 hospitals and 72 general practices in a defined region in Southern Germany [7].

The implementation of innovations to improve care transitions is complex. Not only do these innovations consist of several components [8]. They often target different types of organisations, which fundamentally differ in their structural characteristics, legal regulations, and many other contextual factors [9]. Amongst attributes of the innovations itself, the implementation and the context in which the innovations is implemented in are conditional to the successful implementation of innovations [10]. In the case of VESPEERA, the organisations targeted were general practices which participate in a general-practitioner (GP)-based care programme and hospitals without any further inclusion criteria.

In the literature, many determinants to implementation of innovations in primary care, hospital-based care or regarding care transitions have been described. In a systematic review of systematic reviews, Lau et al. [11] report resources, the fit with everyday practice, roles and competencies of individuals, and the "ease of use and adaptability to local circumstances" as determinants to achieving change in primary care [11]. Geerligs et al. [12] describe barriers for implementation in a hospital setting on a system, staff, and intervention level, that further interact with each other. They describe determinants to implementation such as staff workload and turnover, fit of the intervention with hospital IT, the need to prioritise between everyday work and the innovation, and the possibility of integration with existing processes. Furthermore, they point out the relevance of trainings to raise awareness about the interventions and point out its benefits to the actors involved [12]. Regarding cross-sectoral innovations, discharge planning or care transitions, there are several studies that found determinants to implementation to be: clarity about roles and responsibilities [13, 14], evidence base and perceived benefit, even though it often takes time for this benefit to be visible/ perceivable [14–16], having champions or leaders who commit to the innovation over a long time and stick with it even when others stop doing so [14, 15, 17], only little additional workload by the innovation [16], and high additional workload for study-related measures such as getting informed consent by study participants [14]. Resources were reported as both constraining (if there is not enough staff or time) [16], but lack of resources can also facilitate change if people recognise that they have to find a way to work more efficiently [17]. Furthermore, high organisational fit can facilitate implementation [14].

The intervention fidelity (delivery of the intervention components as planned [18]) in VESPEERA was low overall, but heterogeneous. The number of patients included by each practice varied widely, some were not able to include any patients at all. Hospitals were not able to identify any VESPEERA patients and thus could not apply the intervention. This manifested itself in the fact that the overall sample size aimed for was not reached [19].

The implementation of the complex VESPEERA programme was complemented by a process evaluation and the aim of this study was to identify factors that were associated with the heterogeneous, and overall suboptimal implementation of the VESPEERA programme in hospitals and general practices.

# Methods

## Design and setting

This qualitative observational study was part of the evaluation of the VESPEERA study (Improving care across sectors: An admission and discharge model in general practice and hospitals). The VESPEERA study aims at improving communication between hospitals and general practices and thereby improving patient's continuity of care. In the German healthcare system, patients are referred to hospital by ambulatory physicians for planned admissions, others enter hospital as (unplanned) emergency admissions. Both were to be included into the VESPEERA programme. Patient without contact with their GP prior to admission were included after hospital discharge.

The programme includes the following components across the process of hospital admission and discharge: (1) an assessment before in the general practice which results in (2) an admission letter for the attending hospital, (3) a patient brochure to prepare for the hospital stay, (4) the determination of the HOSPITAL-Score to assess the risk of readmission, (5) a telephonic discharge conversation between the hospital and the general practice, (6) a patient discharge information, (7) an assessment for planning of follow-up care after discharge in the general practice and (8) a telephone monitoring of patients with a higher risk for readmission. A detailed description of the VESPEERA components can be found elsewhere [7, 19].

The VESPEERA programme was implemented by a range of strategies in 7 hospitals and 72 general practices in 9 districts in Baden-Wurttemberg, Germany: (1) representatives of all stakeholder groups (hospitals, general practitioners (GP), health insurers, patients) were involved in the development of the intervention components and consensus was tried to reach, (2) adaptability was promoted regarding the integration of the intervention components applied to hospitals; hospitals had to describe this in a formal commitment form, (3) the intervention components in general practices were supported by a software tool called "CareCockpit" which has already previously been used for general practice-based case management, (4) general practice staff was trained in using the CareCockpit software and the study measures by trainer teams, who themselves were trained by the study central office, (5) hospitals and general practices were provided with educational material on the intervention components and the study conduction, such as investigator site files or video tutorials, (6) general practices and hospitals were continuously supported with the implementation of the intervention by the study central office through updates via mail and post, phone calls, and refresher trainings for general practices, (7) feedback was offered to hospitals and general practices through three benchmarking reports and feedback meetings in a workshop format, and (8) care providers were incentivised by offering fee-for-service remuneration for the provision of the intervention components. A detailed description of the implementation strategies can be found in the study protocol [20].

The VESPEERA programme was applied from May 2018 until the end of September 2019. The process evaluation aimed to examine intervention fidelity, perceived effects, working mechanisms, feasibility and contextual factors influencing the implementation [20]. Ethical approval was obtained by the Ethics

Committee of the Medical Faculty Heidelberg (S-352/2018) for the process evaluation of the VESPEERA study. All participants gave their written informed consent prior to the interview. The study was registered prior to data collection (DRKS00015183 on DRKS / Universal Trial Number (UTN): U1111-1218-0992).

The study was documented in accordance to the Consolidated Criteria for Reporting Qualitative Studies (COREQ) checklist [21].

### Study sample

The purposeful sample consisted of hospital management such as quality managers and ward managers, physician and nursing staff in the participating hospitals as well as GPs and Care Assistants in General Practice (VERAH, Versorgungsassistentin in der Hausarztpraxis) who committed to implement the VESPEERA programme. Staff in general practices and hospitals were recruited as planned [20]. Non-participation was not documented. None of the participants dropped out of the study.

### Data collection and measures

Qualitative data was collected in interviews using a self-developed semi-structured interview guide. The guide was developed using the Interview Guide Tool of the Consolidated Framework for Implementation Research (CFIR) by Damschroder et al. [22]. The interview guide focused on the VESPEERA programme and its implementation. Topics addressed were: current measures of admission and discharge management, impact of a new legal regulation to improve discharge management (Rahmenvertrag Entlassmanagement) on internal processes and cooperation with other health care providers as well as other aspects within the hospital admission and discharge process, implementation of the VESPEERA programme, perceived effects of the programme as well as determinants to its implementation. The interview guide was pilot tested before the first interview, no adjustments to the interview guide were made during data collection.

Interviews were conducted from September 2018 through July 2020 by three female researchers and doctoral candidates at the Department of General Practice and Health Services Research at Heidelberg University Hospital, who were around 30 years of age at the time of data collection. JF has a background in health sciences, health services research and implementation science, NL has a background in speech and language therapy, interprofessional health care, health services research and implementation science, and AW has a background in social sciences and medical process management. The interview partners were informed that the aim of the interviews was to gain insight into their experiences with admission and discharge management and with the VESPEERA programme. JF knew some of the interview partners from the VESPEERA intervention phase. Therefore, interviews were conducted by NL or AW in cases, where this previous contact between JF and the interview partners was close.

Interviews were conducted either as telephone interviews or face-to-face interviews (in private at the participants' workspace), according to the participants preference. All interviews were audio recorded, hand-written notes were taken. The interviews were not repeated and transcripts were not returned to the

participants for correction. Interviews were transcribed verbatim using simplified transcription rules, omitting dialect or informal language/ slang.

Sociodemographic information on the participants' age, sex, profession, years worked in this profession, and structural characteristics of the organisation they work at was collected through a paper-based questionnaire. Inclusion of interviews in the analysis was ended with obtained saturation of codes and contents in the analysis of interview data.

### Data analysis

First, qualitative framework analysis was performed by a multi-professional team of researchers (JF, NL, AW; CS – female, around 30 years of age, GP and health services researcher) using the CFIR [22] in order to sort the data and allow for the identification of more specific aspects.

In a second step, JF and NL met and scanned all CFIR themes and subthemes for codes specifically concerning the implementation process of the VESPEERA programme. Within this second step, the topic of previous and new routines showed to be protruding. Because of this, an additional key word search in all transcripts was conducted, searching for “everyday life”, “routine”, “implement\*”, and “adopt” (all searched for using the German equivalents), to detect associated passages in the transcripts. This was seen as a method of reassuring that all relating passages and codes were actually included.

In a third step, inductive content analysis was performed by both authors on all of the identified codes. During this process, an inductive set of four stages to describe the process of staying in a previous or falling into a new routine by implementing the VESPEERA programme was developed. Following an intercoder analysis, JF and NL came together and discussed all codes with no concordance until consent was reached.

MAXQDA software Versions 18 and 20 (Verbi GmbH) were used for data coding, IBM SPSS Statistics Version 26 was used for analysis of sociodemographic data.

## **Results**

A total of 36 persons was included in this interview study. Table 1 provides an overview on the distribution of participants to the different groups. Duration of the interviews varies between 21 and 78 minutes, with a mean duration of 42 minutes. Participants were mostly female (69%) with a mean age of 45 years. Participants in general practices had a mean work experience in their current general practice/ in their field of 15 years. Table 2 provides an overview on sociodemographic characteristics of the study population.

Table 1: Numbers of qualitative interviews conducted

	n
hospital staff	
management	10
physicians	3
nursing staff	6
staff in general practices	
GPs	6
VERAHs	11
in total	36

Table 2: Sociodemographic characteristics of the study population

	general practices		hospitals			total
	GPs	VERAHs	management	physicians	nursing staff	
age	58 (50-64)* n=6	40 (31-54) n=11	48 (29-60) n=10	50 (34-58) n=3	35 (21-52) n=6	45 (21-64) n=36
male gender	2 (33%)** n=6	0 (0%) n=11	5 (50%) n=10	3 (100%) n=3	1 (17%) n=6	11 (31%) n=36
urban area	3 (50%) n=6	6 (60%) n=10	9 (90%) n=10	2 (66%) n=3	6 (100%) n=6	26 (74%) n=35
years of experience***	16.5 (2-25) n=6	17.5 (2-38) n=10	10 (2-18) n=10	23 (7-32) n=3	12 (2-28) n=6	15 (2-38) n=35
single practice	4 (66%) n=6	5 (50%) n=10				9 (56%) n=16
practice size (patients per quarter year)	1467 (850-2400) n=6	1775 (999-3000) n=8				1643 (850-3000) n=14
hospital size: basic and regular care			3 (33%) n=10	1 (33%) n=3	2 (33%) n=6	6 (32%) n=19

\*mean (min-max); \*\* Frequencies (percent); \*\*\*general practices: in their current practice, hospitals: in this field

The results revealed four stages within the process of implementing the VESPEERA programme (see figure 1): 1) Previous routine and tension for change, 2) Adoption of the VESPEERA programme (adoption as in the action to employ an innovation, also referred to as uptake, [18]), 3) Determinants for falling into and staying in the new VESPEERA-routine, and 4) Reflection: the participant's conclusion. First, the previous routine and a tension for change describe the initial setting in which VESPEERA was to be implemented. Then, after having decided to participate in the VESPEERA programme in order to conquer the previous routine and meet the tension for change, the VESPEERA programme needed to be employed by individuals (adoption stage). Eventually, there are several factors that determine whether the new routine can be picked up and be implemented. Finally, conclusions can be made on the success of the implementation. These four stages will be described below.

< Insert Figure 1 here >

Figure 1: Stages of the implementation process of the VESPEERA program

## 1 - Previous routine and tension for change

VESPEERA was introduced in hospitals and general practices as an innovation, implying a change of previous care routines. In the following section, the tension for change of the participants and other factors that had an influence on the individual decision to participate in and start implementing VESPEERA are described.

The beliefs about the innovation and expected benefit throughout the innovation were described as central in the process in the decision making of the initiation of implementing VESPEERA. This kind of cost-benefit-consideration was also described as crucial to the recruitment of participating colleagues within an organisation: "Yes, and if this point 'What do I get out of it' comes up short in the presentation, then of course I have lost my audience for the time being." (nurse). However, in some practices, GPs described to be already satisfied with previous care processes and described, that they are not "expecting any significant changes" (GP) in their routine throughout VESPEERA. For these participants, the decision to implement VESPEERA was mostly based on personal motivation, interest in scientific work, or the possibility to create the change.

Additionally, worries about additional documentation effort were described as further inhibitors for the decision of participating. On the other hand, most participants showed to be motivated. Participation in VESPEERA was furthermore described as an opportunity to have an influence on the intervention components and the related workload. Participants referred to new the legal regulation to improve discharge management (Rahmenvertrag Entlassmanagement) which needed to be implemented at around the same period of time. Many participants felt that its' contents are not suitable to meet the deficits in health care provision. Therefore, through VESPEERA, they wanted to take the opportunity to help shape future care based on their experience.

In general, VESPEERA was expected to address relevant problems the participants saw in healthcare concerning insufficient communication between hospitals and general practices, and a lack of discharge letters and information about the patients' hospital stay and care process: "And - it... well, it just doesn't work out the way it should and that has always bothered me and I actually thought it was a good thing that it was simply taken care of and then we just wanted to be involved and make sure that it also works out well from our side." (VERAH).

Besides positive beliefs about VESPEERA, positive experiences with similar programs (like the PraCMan software for GP-based case management) on which VESPEERA could be seen as advancement was also seen as motivating for participating in VESPEERA.

Participants described themselves as open for change and that they wanted to get to know the new programme first before judging it, as they have observed with some of their colleagues. "So, on the one hand, among those in white coats – I would call it that – there is too much discussion about whether it is necessary or not instead of just doing it and then seeing if it is useful before we start talking it up." (nurse).

In general, interview participants showed to be motivated, open for innovation, self-critical and reflective of their own behaviour as well as pursuing for improvement: "I also think it's nice to question existing structures or activities and evaluate them." (nurse).

Financial incentives were described as not relevant for the participation in VESPEERA by GPs, moreover, one participant described to be "stuck in a routine" (GP) with no way out, even if there was external motivation such as high financial incentives. The motivation of change makers, encouraging others and reminding others of the new programme was described as even more conducive for the initiation of the implementation process.

One participant prognosed the implementation of specific VESPEERA components to be easier in smaller hospitals than larger hospitals.

## 2 - Adoption of the VESPEERA programme

The adoption stage was described very heterogeneously and seems to depend on the respective hospital or practice.

Facilitating factors include that participants described that it was easier for them to implement VESPEERA if the change fits a certain trend: "So because really there was already relatively much planned before or was already in work, which has already worked relatively well." (hospital management).

As some of the participants were involved in the development of the VESPEERA programme, they mentioned their involvement as a positive factor for the further implementation, as they were able to influence the fit of the programme and the organisation and its feasibility.

Other participants, primarily in hospitals, described that the person who decided to participate in the study just informed them that they will be a part of the study from now on. In these participants a lack of knowledge about the VESPEERA components was obtained. Some hospital staff described their implementation style as "learning by doing" as they planned to deal with the intervention as soon as a patient would be identified, without any further preparation. One participant justified her decision of choosing this kind of implementation process due to previous experiences. The participant described that colleagues refused to accept new care routines when it seemed like a "dictation of further actions they had to follow from now on" (nurse).

The progress of the implementation process was described as dependent on the motivation and engagement of the individual participants. It was described as beneficial if specific persons were entitled to be responsible for the conduction of the intervention. However, some hospitals described a lack of personnel and therefore no one was named responsible for the implementation of the VESPEERA components, such as the identification of incoming VESPEERA patients. Consequently, some hospitals described that "We don't have a real... described the process because we really don't know in who's lap we can drop it" (hospital management). Even though all hospitals handed in their commitment form with a description of the implementation, some hospitals described that they would start

implementing the VESPEERA components as soon as the first patient enters their hospital. However, it was observed that in none of the hospitals, any of the VESPEERA-patients were identified. Hence, a detailed plan on how to conduct the intervention was possibly never made in some institutions what might also have had an impact on the detection quality in the first place. Furthermore, it remains unclear to whom the plan described in the commitment form was communicated, when there was a lack of responsible staff.

In general practices, VERAHs were primarily named as responsible for the implementation and execution of the VESPEERA components. Furthermore, most general practices described to have a structure or a plan on how to conduct VESPEERA, which was described as missing in most hospitals: "We have the programme, we have the road map, everything else runs, that's no problem. The staff just has to be made available." (GP).

As described, some GPs pointed out that they will not expect any big changes through the implementation of the VESPEERA components, as there were already similar efforts and changes conducted by the practice itself. For the adoption process this was described as beneficial, as the VESPEERA components blended in previous processes and expanded them.

### 3 - Determinants for falling into and staying in the new routine

Once the VESPEERA programme was adopted, the participants reported many determinants to falling into and staying in a new routine in order to implement the intervention.

Falling into a routine is perceived easier if the participant has successfully worked with a program/ a process that is similar to the innovation/ change and the difference between old and new is only small. For many general practices, the change was not seen as completely new as they have worked with a similar case management innovation (PraCMan) which was included in a previous version of the CareCockpit software. One GP described this as not only the program itself but as being familiar with a way of working or thinking. Furthermore, hospitals reported that VESPEERA was easier to integrate when it was compatible with their current workflows, or on the contrary: "Well! Not integrating, because integrating would have meant replacing one process with another. In this respect, such pilot projects are always extra." (hospital management).

In some cases, one might be dependent on the cooperation of others in order to be able to fall into a new routine. This also includes leadership: if a GP does not insist on implementing the VESPEERA programme, the VERAHs, who are the ones executing it, will not apply it. External pressure or expectations might also enhance the implementation, for example when patients claim to participate in the VESPEERA program.

One participant described that VESPEERA is intuitive, thus the utilisation is more likely to happen unconsciously. However, not all participants felt this way. Therefore, repeated training and practice as well as a certain regularity in applying the innovation are required. Ensuring this kind of regularity would

be easier if the VESPEERA programme would be applicable to a larger number of patients, for example by involving more health insurers. On the other hand, other participants described that if the innovation needs to be replied too often, it requires too much additional time effort for them. In general, people needed to invest and become active in order to become more familiarised with the VESPEERA programme: “[...] but then it's the same as with anything. You've done it once and then it's gone. Then you have to work through it again, ah what was that again, [...] and then you start and you click your way through, and it's just very tough at the beginning.” (GP). This is associated with additional effort and sufficient resources (time, staff) especially in the early phases of implementation: “Well it is definitely an additional effort, but this is true for almost all new things that are introduced - until a benefit becomes apparent.” (hospital management). This includes a high turnover in staff which impedes implementation. Expending additional efforts is particularly difficult in a setting with a very high workload and stressful everyday practice, which is the case in hospitals and general practices: “Because, you see, this runs alongside our daily practice routine and now the wave of colds has started and we just always have to squeeze them in somewhere.” (GP).

Furthermore, this process takes time. Many participants described this process of training and gaining experience as essential to “internalise” (VERAH) the VESPEERA programme so that it becomes unconscious behaviour. They aim for action that does not need cognitive and active thinking. One participant described that “it just has to click for me” (VERAH) and she does not have to think about it.

When individuals have made this step and fall into a new routine, there are contextual factors that let them stay in this routine and prevent them of falling back into old habits. As the most prominent aspects, participants named that they have to perceive a significant benefit of the VESPEERA programme and that it needs to be a perceived improvement in comparison to the previous routine, either for themselves (for example by experiencing appreciation from superiors), the organisation, or for the patient (for example patients reporting to be thankful and content). These benefits must be immediate. However, participants mentioned that some of the benefits show later and thus are difficult to estimate, such as a possible reduction in readmissions. Doubting the benefits can hinder staying in the new routine.

#### 4 – Reflection: the participants' conclusion

Some of the participants summed up their experience with the implementation of the VESPEERA programme. Hospital managers were optimistic to start with implementing the programme, had plans to monitor the number of VESPEERA patients and exchange experiences with implementing the programme and eventually were disappointed that they could not care for VESPEERA patients in the end: “That was very frustrating [...] They (the people who were involved) saw the time resources they had invested in advance wasted.” (hospital management). Other participants from general practices mentioned that once a decision to participation is made, it is initially acted upon. In this process, they may find that “it's rubbish or doesn't work” (VERAH) or they may feel that it is “simply put into this administrative vat, and I think that the human aspect is then simply lost a little bit.” (VERAH). If this is the case, before discarding

the initial decision to participate, they need to justify their views well to their supervisors. In the case of VESPEERA, this general practice decided to make sacrifices and only implement parts of the programme.

All in all, regardless of the stage of implementation and in spite of failures to implement VESPEERA, many participants were still convinced of its benefits and wish for a rollout, as was stated by participants from general practices:

“I didn't think the VESPEERA was bad at all. I think it's a very, very good thing, but it's just a shame because it doesn't reach everyone.” (VERAH)

and from hospitals:

Interviewer: “Can you imagine that VESPEERA will be implemented into usual care at some point?”

Participant: “– From the idea yes, – from the implementation I think it will depend on the acceptance of this project and therefore also the implementation, how it is communicated. [...] Yes, so if it is clear that both the general practice and the hospitals have a win-win situation, even if you have to keep some administrative things and follow a certain protocol, I think it is a good idea, could also imagine that there is a profit because it is similar to treatment paths or standardisation. If that applies to a large proportion of patients and is applicable, then it becomes routine relatively quickly.” (nurse).

## Discussion

During the implementation of VESPEERA, it became apparent that the individuals and organisations were in different stages of the described process from the previous to the new routine. In different stages, different determinants affected whether it was decided to implement the programme, whether and to which degree it was actually implemented, and whether it was continued to be applied.

One topic that emerged in the statements of the interviewees concerns organisational characteristics, such as organisational structures, hierarchy, and leadership. Not only is it that hospitals and general practices differ greatly regarding these characteristics, there were also differences among hospitals which mostly depended on their size (small vs. large, such as university hospitals). An essential difference is the distinction between the parallelism of decision-making power and executive power. In general practice, there are different hierarchical levels and those who made the decision for participation were mostly those who applied the intervention. For example, VERAHs reported that they got to know about VESPEERA, thought that their patients might benefit from it and then, together with the GP, decided to participate in the study. Often, they then were the ones responsible for the intervention and the study. In hospitals, by contrast, the decision to participation was often made by head physicians and administrative managers. Later, the internal project responsibility lay with middle management. This supports findings by Innis et al. [23] who found out that smaller hospitals are more likely to adopt evidence-based discharge practices. The authors explain that possibly, smaller hospitals benefit from

fewer levels of management and consequently more direct communication among staff when it comes to the implementation of evidence-based practices [23].

The role of middle management regarding the success of implementing new practices has widely been studied. It is assumed that middle managers can facilitate implementation [24] by taking on the role of a champion and by promoting a new practice among frontline workers [25, 26]. In our study, there were strong leaders among middle managers, such as discharge managers or case managers who were named project managers, but still, implementation in hospitals was not successful. A possible explanation for this is that responsibility lay with middle management but the VESPEERA components were supposed to be carried out by health professionals. Sometimes they were named, in other cases there were rather groups of people and not one person who was responsible. Another reason, which is supported by findings from Chuang et al. [27] could be that a possible benefit, which in our study were expected to be reduced rates of readmissions, was easier to anticipate by middle management. Frontline workers however were possibly not able to perceive an immediate change in the patients' health when conducting the intervention components and thus were less dedicated to its implementation.

Another theme that emerged in many of the interviews is the relevance of routines when implementing change and the factors that influence whether routine can be established. The participants in our study described the early phases of the implementation as more of a burden, as they did not have a new routine yet. In this phase, the new routine is only seen as an additional burden (as in resources, time, staff) on the organisation or its individuals without financial equilibrium [28]. In their descriptions, they characterised having a routine as positive and seemed to prefer applying the innovation when the new routine has evolved, as it happened impulsively and instinctively and thus required less conscious effort. Veinot et al. [29] summarise that routines contribute to knowledge management and reduce uncertainty, thus increasing organisational capability. Activities become routines if they are recurring events. The authors add that routines need clarity of roles and stable and standardised processes. They conclude that in order to achieve organisational change, previous routines must be deconstructed proactively, in order to integrate new routines [29]. With regard to our results, a vicious circle can be observed: a low sample size might explain that it was difficult to establish the new routine, and the lack of an established routine (and in some cases the lack of a responsible person who could let the routine emerge) possibly made it more difficult to apply the innovation to more patients. Yet, some participants described that establishing a new routine was not possible due to the daily workload, as they could not focus on the innovation but had to "always slide it in between" (HA-A13).

The statements of the participants showed that at any point during the process of falling and staying in the new routine, one might conclude that the new routine is not better than the previous routine. This might be the case if daily business in hospitals and general practices does not allow the appearance of new routines in the implementation process or if after having tried the new routine, a critical reflection does not show a benefit of the new routine vs. the previous routine. This creates a loop back to the previous routine: individuals go back to their previous routine and stick with it for the same reason why they/ others did not break the old routine in the first place. Within the statements of the interview

participants it could be observed that they seemed to be in different stages of this implementation process. Some seemed to have gone through all four of the described stages and were able to reflect about the whole implementation process, others only described the process until the adoption stage.

### Strengths and limitations

There are some limitations to this study, such as two kinds of selection biases. First, the general practices that participated in the VESPEERA project were mostly motivated but already had a good performance regarding care transitions (based on their own reports). As it is often the case in health services research, the innovation did not reach those who could mostly benefit from it which also might have had an effect on the results of the outcomes evaluation [19]. Second, the participants in the interviews were possibly more motivated than those who did not participate. All of the hospitals and many of the general practices had little to no patients receiving the innovation. Therefore, only few participants were able to talk about all of the implementation phases. In order to gain insight into the experiences of more persons than those who participated in the interviews, we conducted a quantitative survey based on the results of the interviews [19].

## Conclusion

This study gave insights into the determinants to the adoption, implementation and reflection upon sustaining of a complex intervention to improve care transitions. The differentiation between hospitals and general practices revealed the role of decision makers who themselves are not to apply the intervention in everyday practice and the importance of new processes to become routine in order to be sustained.

## List Of Abbreviations

AOK	Allgemeine Ortskrankenkasse, large German sickness fund
CFIR	Consolidated Framework for Implementation Research
GP	General practitioner
VERAH	Care Assistant in General Practice (Versorgungsassistentin in der Hausarztpraxis)
VESPEERA	Improving care across sectors: An admission and discharge model in general practice and hospitals (Versorgungskontinuität sichern: Patientenorientiertes Einweisungs- und Entlassmanagement in Hausarztpraxen und Krankenhäusern)

## Declarations

**Ethics approval and consent to participate:** The study protocol has been submitted to and approved by the ethics committee of the Medical Faculty Heidelberg prior to the start of the study (S-352/2018). The study was conducted in accordance with the Declaration of Helsinki (2013). All participants gave their written informed consent.

**Consent for publication:** Not applicable.

**Availability of data and materials:** The datasets generated and/or analysed during the current study are not publicly available due to them containing information that could compromise research participant privacy but are available from the corresponding author on reasonable request.

**Competing interests:** The authors declare that they have no competing interest.

**Funding:** This work was supported by the Federal Joint Committee (G-BA), Innovation Fund, grant number 01NVF17024. The funder had no role in the design of the study and was not involved in its execution, data analysis and dissemination of results.

**Authors' contributions:** JF, AW, CS and MW contributed to the study protocol and interview guide. JF, AW und NL conducted data collection. JF, AW, CS and NL performed data analysis. JF and NL drafted the original manuscript. SZ was principal investigator of the VESPEERA project and MW principal investigator of the process evaluation within the project. All authors contributed to the design of the study and the data collection or analysis and read and approved the final manuscript.

**Acknowledgements:** We thank all consortium partners of the VESPEERA-study- 'AOK Baden-Württemberg' for overall project organisation and consortium leadership, 'University Hospital Heidelberg, Department for General Practice and Health Services Research' for project coordination, execution of the study and all study central office related issues, 'aQua-Institute' for data management and preparation and execution of the patient survey, 'HÄVG Hausärztliche Vertragsgemeinschaft AG' for organisation of train-the-trainer events, 'University Hospital Heidelberg, Institute for Medical Biometry' for statistical expertise and statistical analyses and 'Gesundheitstreffpunkt Mannheim e.V.' for involvement of patients in the development of intervention components. Moreover, we thank participating hospitals, general practices and patients of the VESPEERA programme. We would like to thank Annika Baldauf and Marion Kiel for organisation and support of study central office-related issues, Dr. Charlotte Ullrich and Regina Poß-Doering for input into the development of interview guides, all interview partners for their contribution, and all research assistants for transcription of the interviews.

**Additional files:** COREQ Checklist

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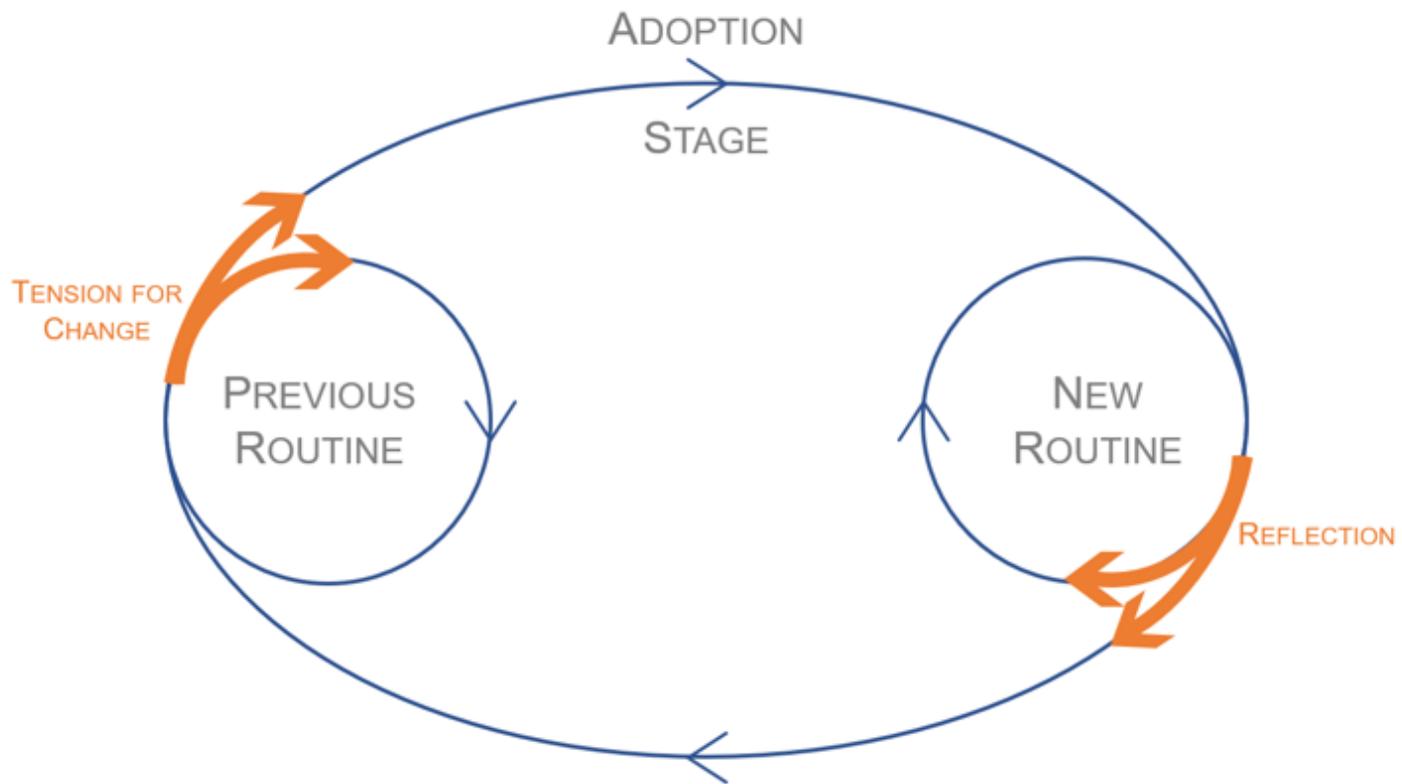
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## **Additional File**

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## **Figures**



**Figure 1**

Stages of the implementation process of the VESPEERA program