

## RESEARCH

# Systematic observation training (ALERT) in the municipal health service and the impact on job satisfaction

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## Abstract

**Background:** The introduction of the Coordination Reform has meant that the municipal health service now deals with patients at an earlier stage of their care pathway, and that their need for care and observation is therefore more complex. This has generated a need to raise competence levels in the municipal health service to ensure that healthcare personnel are able to recognise signs of clinical deterioration and pre-empt acute critical illness. Competence-raising training may improve the rate of job satisfaction among healthcare personnel. Several Norwegian municipalities employ a training programme entitled Acute, Life-threatening Events, Recognition and Treatment (ALERT) in order to train healthcare personnel in structured observation and communication techniques.

**Objective:** The study's objective was to examine the experiences of municipal healthcare personnel in using the Modified Early Warning Score (MEWS) observation tool after having attended an ALERT course, and to investigate the link between these experiences and job satisfaction.

**Method:** This is a cross-sectional study which involved a survey of healthcare personnel from six nursing homes and seven community nursing areas in a municipality in eastern Norway. Based on the completed questionnaires, we compiled descriptive statistics with frequencies and cross-tabulation questions about the experience of being trained in how to use the MEWS observation tool, and sociodemographic variables such as 'education', 'workplace' and 'experience'. Furthermore, we carried out a linear regression analysis in order to investigate whether there is a correlation between post-training experiences and job satisfaction.

**Results:** The healthcare personnel respondents stated that ALERT was a useful competence-raising measure. More than 70 per cent reported that the MEWS training and use had improved their knowledge, increased their confidence with observations, raised their awareness of critical illness and their confidence when prioritising actions, improved their professional confidence and enhanced the structure of collaborative work. The healthcare personnel also reported a high rate of job satisfaction, which tentatively may suggest a correlation with the competence-raising measure.

**Conclusion:** Municipal healthcare personnel found ALERT to be a useful competence-raising tool. More municipalities should introduce the programme to ensure that observations are quality assured and that all parts of the health service effectively speak the same language across treatment levels. This may contribute to better patient flow and a more cohesive health service.

One of the visions of the Norwegian Coordination Reform (1) is to reduce the duration of hospital stays, and for patients to have access to a broader range of treatments in the municipal health service.

The reform has meant that patients are discharged to the care of the municipal health service at an earlier stage than previously. It has also meant that there is a greater risk that insufficient patient information is handed over at transfer between healthcare levels (2, 3), and that consequently, there is a risk that the quality of treatment may suffer.

In this scenario, a high level of competence within the health service is essential (2–5) for the quality of treatment to be improved. Quality improvement entails healthcare personnel recognising signs of clinical deterioration at an early stage so that they pre-empt acute, critical illness.

Appropriate competence levels may also help to boost job satisfaction rates (6), which in turn has been verifiably linked to a good quality of service (7).

### ***ALERT***

A structured training programme in the use of standardised observation tools may help to recognise clinical deterioration in patients at an early point, thereby preventing hospitalisation (8, 9–13).

Acute, Life-threatening Events, Recognition and Treatment (ALERT) is a training programme which focuses on such observation tools (14). It was developed to ensure that healthcare personnel with different levels of experience would learn to perform systematic observations, prioritise actions and provide the correct treatment when a patient's condition is deteriorating.

### ***MEWS***

This licensed theory and simulation course is taught by an authorised instructor using the Modified Early Warning Score (MEWS) observation tool. This tool is based on an algorithm associated with Air, Breathing, Circulation, Disability, Exposure (ABCDE).

The observations give an aggregate MEWS score that reflects how close the readings are to normal parameters for respiratory rate, pulse, systolic blood pressure, temperature and level of consciousness. The score is a measure of the patient's condition and indicates how soon a doctor or a higher level of treatment provider should be called.

The ALERT programme also provides training in the ISBAR systematic communication tool (Identify, Situation, Background, Assessment and Recommendation) (8, 15). The purpose of ISBAR is to secure accurate and effective communication between healthcare personnel in critical situations.

### ***Job satisfaction amongst healthcare personnel***

If healthcare personnel have no professional development opportunities, this will have an adverse effect on their job satisfaction (16, 17). Poor job satisfaction rates may in turn affect recruitment and stability among healthcare personnel, thereby increasing the risk of a poorer standard of care in the municipal healthcare service.

Literature reviews and stand-alone studies show that the job satisfaction among healthcare personnel may be associated with their opportunity to carry out meaningful patient-oriented work to a high standard, make professional decisions, enjoy interdisciplinary collaboration and a good community of co-workers.

Job satisfaction is also affected by the staff's opportunity to use their skills, enjoy professional freedom in their work and, not least, good working conditions (18–20).

## ***The study's objective and research questions***

In summary, the literature shows that the Coordination Reform has brought changes and a need for training in how to use systematic observation tools within the municipal health service. This enables healthcare personnel to look after deteriorating patients and will ensure that they remain committed and enjoy a high rate of job satisfaction.

We were therefore interested to examine the healthcare personnel's workplace experiences after having attended an ALERT course. We also wanted to investigate the correlation between this experience and their job satisfaction. The study therefore examined the following:

1. After receiving ALERT training, what are municipal healthcare personnel's experiences of using the MEWS systematic observation tool when cross-referenced for education, years of service and type of workplace?
2. After receiving ALERT training, what is the correlation between the municipal healthcare personnel's experiences with performing systematic observations and their job satisfaction rate?

## **Method**

### ***Design***

This cross-sectional study was a part of an evaluation project that involved three municipalities in eastern Norway. This project studied the experiences of healthcare personnel after being trained in how to use the MEWS observation tool. This quantitative cross-sectional study was conducted in one of these three municipalities.

### ***Sample***

The survey inclusion criteria were drawn up in partnership with representatives of the evaluation project and a contact person from the relevant municipality.

Included were all registered nurses, social educators, students, healthcare support workers, supervisors and assistants who attended the full training programme and who were working in the community nursing service or at a nursing home in the relevant municipality.

We wanted to study the experiences of all staff, because the purpose of the competence-raising measure was to safeguard the quality of observations performed by all healthcare personnel who work with patients or service users, irrespective of their level of education.

We sent an email enquiry to their managers via a contact person. The service managers received laminated posters with information about the study and contact details for the first author. The service managers for the community nursing services also attended a managers' briefing with the first author before the study commenced. It proved impossible to organise a similar meeting with the nursing home managers, but they received the same information via telephone and email.

An enquiry was sent to nine nursing homes, seven community nursing areas and the municipal accident and emergency clinic. Three nursing homes were unable to take part. The accident and emergency clinic wanted to take part, but later withdrew due to staffing problems at managerial level.

The first author hand-delivered survey packs (questionnaires and response envelope) to the local contact person (appointed by the service managers), who was tasked with handing out and collecting the forms as well as sending out reminders. The contact persons were also informed by email about the data collection procedure.

The questionnaires were issued to 419 people of whom 249 responded (response rate of 59 per cent). Three responses were discarded; one because the questionnaire had not been sufficiently completed, and two because the respondents had not attended a course.

Spørreskjemaer ble sendt ut til 419 personer hvorav 249 svarte (svarrespons 59 prosent). Tre besvarelser ble forkastet, én på grunn av svært mangelfull utfylling, og to fordi de ikke hadde deltatt på kurs.

### ***The questionnaire***

The questionnaire featured questions from the Job Satisfaction Scale (JSS) instrument (21), as well as questions about ALERT, and about sociodemographic details.

JSS includes ten questions linked to workplace conditions, such as responsibility, amount of variety, relationship with colleagues, the physical working environment, opportunity to use your abilities at work, overall job satisfaction, freedom to choose your own method of working, recognition, remuneration, and hours of work.

The questions were answered on a scale from 1 – very dissatisfied, to 7 – very satisfied (21). The job satisfaction rate is calculated by adding up the mean score for all ten questions. In this study, Cronbach's alpha was 0.90.

We used a questionnaire developed for the 'Be Alert' (22) pilot project to study staff experiences after having attended an ALERT course. Working with representatives of the evaluation project, some of the questions were re-phrased after consultation with the developer. We also added several questions about sociodemographic details and working conditions.

The questionnaire included three open-ended and 18 close-ended questions about the healthcare personnel's experience of the ALERT course they had attended and general conditions at their place of work. Responses to the close-ended questions were given on a scale from 1 – completely disagree, to 5 – completely agree.

In addition, there were eight questions relating to sociodemographic details such as gender, age, marital status, education, postgraduate qualifications, years of service in current occupation, workplace, and full-time equivalent percentage.

Prior to conducting our analyses, we split the ALERT questions into two categories: questions concerning 'experiences after ALERT training (use of MEWS and ISBAR)' and 'general conditions (routines and treatment initiatives)'. The former category included questions about first-hand experiences of using MEWS and ISBAR.

The latter category included questions concerning routines and initiatives associated with the general conditions at the respondent's workplace. Category divisions were decided after careful consideration by the authors based on our literature findings and the first author's experience of ALERT.

This study only reports on responses to questions in the 'experiences after ALERT training' category.

### ***Analysis***

We used Statistical Package for the Social Sciences (SPSS) version 23 for all statistical analyses (IBM SPSS Statistics) (23). We compiled descriptive statistics (frequencies) in order to describe the sample and the distribution of responses to the ALERT questions (tables 1 and 2).

**Table 1.** Description of the sample (n (%))

<b>Gender (n = 246)</b>	<b>Female</b> 196 (80)	<b>Male</b> 50 (20)	
<b>Age in years (n = 246)</b>	<b>unde 20–39</b> 91 (37)	<b>40–49</b> 67 (27)	<b>50 and older</b> 88 (36)
<b>Marital status (n = 245)</b>	<b>Married/civil partnership</b>		
	177 (72)	68 (28)	
<b>Education (n = 246)</b>	<b>Graduate qualification*</b> 121/1 (50)	<b>No graduate qualification**</b> 114/10 (50)	
<b>Postgraduate qualification (n = 235)</b>	<b>Yes</b> 59 (24)	<b>No</b> 176 (72)	
<b>Years of service in the occupation (n = 246)</b>	<b>Less than 1–4</b> 49 (20)	<b>5–14</b> 96 (39)	<b>15 and more</b> 101 (41)
<b>Workplace (n = 246)</b>	<b>Community nursing service</b> 188 (76)	<b>Nursing home</b> 58 (24)	
<b>Full-time equivalent percentage (n = 246)</b>	<b>Below 50</b> 11 (4)	<b>50–79</b> 33 (13)	<b>80–100</b> 202 (82)

\*Registered nurse/social educator

\*\*Healthcare support worker/unskilled

**Table 2.** Experiences after having attended an ALERT course

Experiences of using MEWS and ISBAR after having attended an ALERT course	Frequencies	Cross tabulation (significant differences*)		
	Numbers who agree / n (%)	Education	Work-place	Experience
1. The ALERT course has increased my focus on observing critically/ acutely ill patients (n = 246)	189 (77)			
2. The ALERT course has increased my knowledge of patient assessment and observation (n = 246)	201 (82)			
3. The ALERT course has increased my awareness of which of our patients are at risk (n = 246)	184 (75)			
4. After attending the ALERT course I have started using systematic patient observation based on the ABCDE principle (n = 246)	195 (79)			
5. The ALERT course has made me perform more/different observations than before (n = 246)	172 (70)	0,001		
6. The ALERT course has boosted my confidence in prioritising actions when I deal with critically ill patients (n = 246)	185 (75)		0,042	0,009
7. MEWS helps me capture changes in the patient's condition at an earlier point (n = 246)	207 (84)		0,039	
8. The ALERT course has increased my use of the 'acute care form' (n = 244)	136 (55)			0,016
9. The ALERT course has made me consult the doctor more often for an assessment or a clarification of a patient's further treatment (n = 237)	124 (50)		0,023	
10. The ALERT course has raised my level of professional confidence when I consult a doctor (n = 240)	186 (76)			
11. The ALERT course has increased the frequency of healthcare discussions at my place of work (n = 246)	125 (51)			
12. ISBAR has helped me adopt a more structured approach when I contact the doctor or call the registered nurse in charge (n = 246)	183 (75)			

The table outlines how many respondents report that they 'completely agree' and 'somewhat agree' with the statements. The remaining respondents answered that they 'neither agree nor disagree', 'somewhat disagree' or 'completely disagree'.

\*Shows which statements are significantly different based on education, workplace or experience. The p-value was set to 0.05 or less.

We also conducted a chi-square cross tabulation test for the ALERT questions in order to identify differences according to workplace, education and years of service (table 2). The level of significance was set at 0.05. Regression analyses were used to investigate how much of the job satisfaction variance (dependent variable) can be explained by experiences after ALERT training, controlled for gender, education, workplace and years of service.

We conducted univariate regression analyses on all the controlled ALERT and sociodemographic variables that were included. Only variables that were significant in one or more of the univariate regression analyses (table 3) were included in the linear multiple regression model with the overall JSS score as a dependent variable (table 3).

**Table 3.** Univariate and multivariate regression analyses of questions concerning MEWS and ISBAR

	Univariate analyses				Multivariate analyses (n = 231)		
	B	SE	R2	p value	B	SE	p value
Increased focus on observations (n = 242)	0,149	0,063	0,023	0,018*	-0,046	0,110	0,676
Increased knowledge (n = 242)	0,225	0,063	0,051	0,000*	0,185	0,113	0,104
Awareness of at-risk patients (n = 242)	0,099	0,063	0,010	0,118			
Observations according to ABCDE (n = 242)	0,101	0,063	0,011	0,107			
Performing different/more observations (n = 242)	0,125	0,057	0,020	0,028*	-0,070	0,086	0,420
More confident when prioritising actions (n = 242)	0,153	0,060	0,026	0,011*	-0,139	0,097	0,153
MEWS captures changes more quickly (n = 242)	0,290	0,067	0,072	0,000*	0,148	0,098	0,132
More frequent use of acute care forms (n = 240)	0,100	0,048	0,018	0,039*	-0,007	0,066	0,921
Consulting a doctor more frequently (n = 233)	0,131	0,056	0,023	0,021*	0,023	0,068	0,739
Increased professional confidence when consulting a doctor (n = 236)	0,203	0,062	0,044	0,001*	0,084	0,091	0,354
More healthcare discussions (n = 242)	0,225	0,054	0,066	0,000*	0,214	0,078	0,007*
ISBAR and structured conversation (n = 242)	-0,161	0,056	0,033	0,004*	-0,026	0,083	0,758

The total job satisfaction score (JSS) is a dependent variable.

In the table, the non-standardised regression coefficient B indicates how much the dependent variable varies with an independent variable, when all other independent variables are kept constant (24). Explained variance (R2) shows the explanatory power of a model, and at the same time R2 indicates how much of the variation in the dependent variable can be explained by the independent variables.

### ***Ethical considerations***

The healthcare personnel in the study were informed about the purpose of the study and that participation was voluntary. Completing the questionnaire constituted consent to take part. All responses were anonymous and the questionnaires were shredded or deleted at the end of the study. All results were presented in a way that maintained the healthcare personnel's anonymity.

The study was reported to the Data Protection Officer at the Norwegian Centre for Research Data (NSD), project reference 46682. The first author entered all data into SPSS, and all questionnaires were checked by a colleague.

## Results

### *Sample characteristics*

The majority of the sample were female (table 1). The under-40 and over-50 age groups each made up just over one third of the sample.

Fifty per cent of the sample held an academic degree at bachelor's level or higher, 80 per cent had accumulated five or more years of service in the occupation, the majority worked a full-time equivalent of 80 per cent or more, and approximately 75 per cent were working for the community nursing service.

The job satisfaction rate reported by the healthcare personnel was just above median level, with an average of 5.19 (variation between 2 and 7) measured by JSS (n = 242).

### *Experiences after attending an ALERT course*

More than 50 per cent of the healthcare personnel reported that their ALERT training had increased their knowledge and professional confidence, and that it had boosted their confidence in performing observations and their awareness of critical illness (table 2). Responses to nine out of twelve questions reflected a 70 per cent or greater rise in the use of systematic observation tools, performing different or more observations, and greater confidence when prioritising actions.

They also reported that several clinical changes in patients were recognised more quickly, and that ISBAR had helped them adopt a more structured approach to communicating with other healthcare personnel. The results show significant variation in the impact of ALERT training according to education, years of service, and workplace.

The study shows that after ALERT training, non-graduate healthcare personnel perform different and more observations to a significantly greater extent than graduate staff ( $p = 0.001$ ) (question no. 5).

Furthermore, healthcare personnel with fewer years of service reported that the ALERT training had helped to boost their confidence when prioritising actions ( $p = 0.009$ ) (question no. 6) and increased their use of the acute care form ( $p = 0.016$ ) (question no. 8).

In terms of workplace, significantly more healthcare personnel in nursing homes than in the community nursing service reported that they felt more confident when prioritising actions ( $p = 0.042$ ) (question no. 6), that MEWS captured changes ( $p = 0.039$ ) (question no. 7), and that they contacted a doctor significantly more often for further clarification and to ask about treatment ( $p = 0.023$ ) (question no. 9).

## ***The connection between job satisfaction and ALERT training***

The univariate regression analysis of job satisfaction (dependent variable) and the sociodemographic variables, showed that only education was significant. The multivariate regression analysis in table 3 showed a significant correlation between the question concerning more healthcare discussions in the workplace ( $B = 0.214$ ) and overall job satisfaction.

The multivariate regression analysis of questions concerning MEWS and ISBAR showed that only the variables 'healthcare discussions in the workplace' and 'education' had a significant effect on job satisfaction. 'Education' had the greatest impact ( $B = 0.300$ ), and the model explains 13 per cent of the variance.

## **Discussion**

The study's main findings show that healthcare personnel found they had increased their knowledge and confidence, acquired a wider range of observation skills and raised their awareness about the importance of early recognition and accurate communication in any scenario involving critically ill patients. The study also shows that there may be a correlation between the prevalence of healthcare discussions in the workplace and job satisfaction.

**«The study also shows that there may be a correlation between the prevalence of healthcare discussions in the workplace and job satisfaction.»**

## ***Knowledge and the use of MEWS***

The Coordination Reform means that patients are discharged from hospital at an earlier stage in their care pathway, which in turn means that the municipal health service needs to provide follow-up care for more and sicker patients (1–5). This requires a higher level of competence, in nursing homes as well as in the community nursing service.

Sound healthcare competence ensures provision of higher quality treatment of patients (17). In principle, registered nurses in the municipal health service are better qualified to deal with this change than healthcare support workers, but it is difficult to recruit enough registered nurses (16).

After the introduction of the Coordination Reform, the work of registered nurses has become less patient-centred and there are more pressures on their time (4). This means a higher dependency on the competence of non-graduate staff to perform more observations than what was previously the case.

A report from western Norway about the consequences of introducing the Coordination Reform shows that healthcare support workers now have tasks assigned to them that graduate healthcare personnel used to perform before the reform (25).

Our study shows that more non-graduate than graduate healthcare personnel report having acquired knowledge that enabled them to perform more and/or different observations after attending the course. The introduction of shared validated instruments, such as MEWS and ISBAR, which are intended for use by healthcare personnel in general, allows registered nurses to delegate tasks while other healthcare personnel have a shared communication tool at their disposal.

**«It is interesting to note that healthcare personnel in nursing homes found that after attending the course, they felt more confident when prioritising actions.»**

Moreover, earlier research shows that MEWS may be suitable for use in places where there are few graduate staff, and where healthcare personnel have limited work experience (13).

### ***Experiences with MEWS in nursing homes and in the community nursing service***

It is interesting to note that healthcare personnel in nursing homes found, to a significantly greater extent than healthcare personnel in the community nursing service, that MEWS captures changes in a patient's condition, and that after attending the course, the healthcare personnel in nursing homes felt more confident when prioritising actions.

We wonder whether this may be linked to the fact that healthcare personnel in the community nursing service work on their own more often than nursing home staff (26). Because they are having to deal with challenging and acute situations on their own, they have developed more of a trust in their 'clinical gaze' (8) than in the standardised observation tool.

Moreover, the ALERT programme focuses on combining the 'clinical gaze' with systematic record-keeping to increase the probability of recognising a life-threatening condition, so that action may be taken (8, 15). The literature highlights the need for systematic record-keeping in nursing (11).

### ***Experiences with MEWS and education***

It is worth noting that healthcare personnel with fewer years of service (<1–4 years) reported to a significantly greater extent than healthcare personnel with longer experience that the ALERT course helped them feel more confident when prioritising actions in their encounters with critically ill patients.

According to Benner (1996), there are five stages of development in clinical nursing, and it takes approximately five years to accumulate sufficient experience to work independently, fast and with confidence in one's own assessment. She also says that staff with less education and/or little experience, will depend on rules and procedures to be able to use their skills in a satisfactory way (27).

There may well be a connection between Benner's theory about the need for rules and procedures, and the fact that healthcare personnel with fewer years of service and less education reported the biggest confidence boost after having attended the ALERT course. The course provided training in how to use effective tools in the assessment of critically ill patients.

**«The healthcare personnel further reported that using ISBAR and MEWS boosted their confidence when working with doctors, accident and emergency departments and other parts of the health service.»**

The ALERT programme is all about pre-emption, about preventing rather than treating, i.e. being proactive. Proactive working is advocated by the Coordination Reform as one of the main means of securing good patient care pathways (1).

### ***Experiences with MEWS and interdisciplinary working***

General practitioners and nursing home doctors also play a key role in the patient's care pathway. The healthcare personnel in our study reported that after undergoing the training, they would get in touch with a doctor more often, to clarify the patient's condition and potentially for treatment.

The healthcare personnel further reported that using ISBAR and MEWS boosted their confidence when working with doctors, accident and emergency departments and other parts of the health service. The healthcare personnel's experiences of using MEWS and ISBAR highlight the importance of using a joint reporting system, and the fact that we need to speak the same language across treatment levels.

## ***Experiences with MEWS and job satisfaction***

Our study matches the findings of other studies in that healthcare personnel were found to enjoy a high rate of job satisfaction (19, 28, 29). Our study also highlights that ALERT training contributes to higher job satisfaction. Admittedly, a more recent study shows that 'learning opportunities' have no impact on job satisfaction (28).

This is confirmed by Bjørk in a study where registered nurses who took part in a 'clinical ladder' programme, did not report a higher rate of job satisfaction than those who did not participate in this programme (29). The findings of our own study suggest that higher competence and having an opportunity to conduct more healthcare discussions in the workplace, impact significantly on the rate of job satisfaction.

However, an explained variance of only 13 per cent suggests that a number of other factors also contribute to the job satisfaction rate. These factors may include opportunities for interdisciplinary working, opportunities to enjoy a good community of co-workers, opportunities and freedom to use your skills, opportunities for work autonomy, opportunities to enjoy working directly with patients, and good working conditions (18–20).

## ***Strengths and weaknesses***

One of the study's strengths is that everyone who had attended an ALERT course was invited to take part, irrespective of their years of service and level of education. It is important to study the experiences of all employees, because MEWS and ISBAR are tools intended to ensure the quality of observations, irrespective of the background of the healthcare personnel who perform them.

A weakness of this study's validity and reliability is that the ALERT questionnaire was not validated. A response rate of 59 per cent is considered satisfactory in the methodology literature (30), however a considerable portion of course participants did not respond.

The non-respondents may be individual employees at various workplaces, or they may be the people who took the most negative view of the training. A combination of these two factors is also a possibility. Furthermore, it should be noted that challenges experienced by some of the service providers meant that in some workplaces virtually no staff responded.

A complete list of everyone who attended the course, and of those among them who were issued with a questionnaire, would have enabled us to conduct an attrition analysis. Such an analysis would have strengthened the study's representativeness.

It should be noted as a strength that the first author is an ALERT instructor, which is an important reason for the choice of topic. Knowledge of the ALERT programme made it easier to understand and discuss the results. The first author has not worked as an ALERT instructor in the municipality where the study was conducted, nor has she been in direct contact with any of the study participants.

In order to study the correlation between ALERT training and job satisfaction, it would have been interesting to ask about other factors, such as how often MEWS and ISBAR have been used after the training.

It would also have been interesting to conduct the survey with a pretest–posttest design to measure how frequently MEWS and ISBAR were used before and after training. Such measurements would depend on the incidence of situations in which the use of these tools would be relevant.

## **Conclusion**

The healthcare personnel reported positive experiences from being trained in the use of systematic observation and communication tools. Healthcare personnel often ask for professional development opportunities due to the higher skill requirements that were introduced with the Coordination Reform.

Our study suggests that ALERT training has contributed to the healthcare personnel's increased confidence when observing and treating critically ill patients. Furthermore, we may tentatively suggest that there appears to be a connection between this competence-raising measure and job satisfaction.

**«The healthcare personnel reported positive experiences from being trained in the use of systematic observation and communication tools.»**

For the Coordination Reform to succeed, the municipal and specialist health services should continue to invest in systematic competence-raising initiatives. Not least should they investigate further the effect of such measures, on patient treatment as well as on the job satisfaction of staff.

The ALERT programme appears to be a good tool, and other local authorities should give consideration to using it. The programme would also be appropriate for inclusion in the syllabus of various graduate healthcare courses, and in the induction training for new healthcare personnel in various medical institutions.

Doctors may also benefit from taking part in the training at the various institutions, to improve interdisciplinary interaction and ensure that everyone 'speaks the same language'. Finally, we should mention that ProACT (8, 9) is currently the most commonly used training concept in Norwegian hospitals and municipal healthcare services.

At the time that this survey was conducted, the reference municipality was in a transitional phase between the ALERT and ProACT programmes. Healthcare personnel who have attended an ALERT course need not attend another course, because both programmes put equal emphasis on observation, communication and responsiveness.

Also, the course content is structured in similar ways. Nevertheless, course participants will find a refresher course useful.

## References

1. St.meld. nr. 47 (2008–2009). Samhandlingsreformen: Rett behandling – på rett sted – til rett tid. Oslo: Helse- og omsorgsdepartementet; 2009. Available at: <http://www.regjeringen.no/pages/2206374/PDFS/STM200820090047000DDDPDFS.pdf> (downloaded 13.09.2014).
2. Haukelien H, Vike H, Vardheim I. Samhandlingsreformens konsekvenser i de kommunale helse- og omsorgstjenestene. Sykepleieres erfaringer. Bø i Telemark: Telemarksforskning; 2015. Rerport no. 362. Available at: <https://www.telemarksforskning.no/publikasjoner/samhandlingsreformens-konsekvenser-i-de-kommunale-helse-og-omsorgstjenestene/2794/> (downloaded 02.10.2016).
3. Norheim KH, Thoresen L. Sykepleiekompetanse i hjemmesykepleien – på rett sted til rett tid? Sykepleien Forskning. 2015;10(1):14–22. DOI: [10.4220/Sykepleienf.2015.53343](https://doi.org/10.4220/Sykepleienf.2015.53343)
4. Gautun H, Syse A. Samhandlingsreformen. Hvordan tar de kommunale helse- og omsorgstjenestene imot det økte antallet pasienter som skrives ut fra sykehusene? Norsk institutt for forskning om oppvekst. Oslo: Høgskolen i Oslo og Akershus; 2013. NOVA-rapport 8/13. Available at: <http://www.hioa.no/Om-HiOA/Senter-for-velferds-og-arbeidslivsforskning/NOVA/Publikasjoner/Rapporter/2013/Samhandlingsreformen> (downloaded 09.11.2014).
5. Grimsmo A. Hvordan har kommunene løst utfordringen med utskrivningsklare pasienter? Sykepleien Forskning. 2013;2(13):148–55. DOI: [10.4220/sykepleienf.2013.0053](https://doi.org/10.4220/sykepleienf.2013.0053)
6. Bakker AB, Demerouti E. The job-demand resources model: state of the art. Managerial Psychology. 2007;22(3):309–28. DOI: [10.1108/02683940710733115](https://doi.org/10.1108/02683940710733115)

7. Koy V, Yunibhand J, Angsuroch Y, Fisher M. Relationship between nursing care quality, nurse staffing, nurse job satisfaction, nurse practice environment, and burnout: literature review. *International Journal of Research in Medical Sciences*. 2015;3(8):1825–31. DOI: [10.18203/2320-6012.ijrms20150288](https://doi.org/10.18203/2320-6012.ijrms20150288)
8. Andersson C, Cekar K, Einarson E, Hvarfner A, Lindby Å, Lindgren P, eds. *ProACT – forebygge og behandle livstruende tilstander*. 1st ed. Lund: Studentlitteratur; 2015.
9. ProActcourse 2019. Available at: <https://www.proactcourse.org/no/> (downloaded 17.12.2019).
10. Subbe CP, Kruger M, Rutherford P, Gemmel L. Validation of a modified early warning score in medical admissions. *QJ Med*. 2001;(94):521–6.
11. Ludikhuize J, Smorenburg M, Rooij S, Jonge E. Identification of deteriorating patients on general wards; measurement of vital parameters and potential effectiveness of the Modified Early Warning Score. *Journal of Critical Care*. 2012;27(4):7–13.
12. Bunkenborg G. *In-hospital safety. Prevention of deterioration and unexpected death by systematic and interprofessional early warning scoring*. (Doctoral thesis.) Malmö: Lund universitet; 2013.
13. Burch VC, Tarr G, Morroni C. Modified early warning score predicts the need for hospital admission and inhospital mortality. *Emerg Med J*. 2008;25(10):674–8.
14. ALERT – Acute Life-Threatening Events: Recognition & Treatment. Available at: <http://www.alert-course.com/> (downloaded 15.02.2018).
15. Smith G. *ALERT – Acute life-threatening events recognition and treatment*. Portsmouth Hospital NHS Trust, Intensive Care Society, Universitetssjukehuset i Lund; 2000.
16. Gautun H, Øien H, Bratt C. *Underbemanning er selvforsterkende. Konsekvenser av mangel på sykepleiere i hjemmesykepleien og sykehjem*. Oslo: Norsk institutt for forskning om oppvekst, velferd og aldring, Høgskolen i Oslo og Akershus; 2016. Available at: <http://www.hioa.no/Om-HiOA/Senter-for-velferds-og-arbeidslivsforskning/NOVA/Publikasjoner/Rapporter/2016/Underbemanning-er-selvforsterkende> (downloaded 14.05.2016).
17. Aiken LH, Sermeus W, Van Den Heede K, Sloane DM, Busse R, McKee M et al. Patient safety, satisfaction, and quality of hospital care: cross sectional surveys of nurses and patients in 12 countries in Europe and the United States. *BMJ*. 2012;344:e1717. DOI: <http://dx.doi.org/10.1136/bmj.e1717>

18. DeCola PR, Riggings P. Nurses in the workplace: expectations and needs. *International Nursing Review*. 2010;57(3);335–42. DOI: [10.1111/j.1466-7657.2010.00818.x](https://doi.org/10.1111/j.1466-7657.2010.00818.x)
19. Halvorsrud L, Kuburović J, Andenæs R. Jobbtilfredshet og livskvalitet blant norske hjemmesykepleiere. *Nordisk tidsskrift for helseforskning*. 2017;13(1). DOI: [10.7557/14.4119](https://doi.org/10.7557/14.4119)
20. Caers R, DuBois C, Jegers M, De Gieter S, De Cooman R, Pepermans R. Measuring community nurses' job satisfaction: literature review. *Journal of Advanced Nursing*. 2008;62(5):521–9. DOI: [10.1111/j.1365-2648.2008.04620.x](https://doi.org/10.1111/j.1365-2648.2008.04620.x)
21. Warr P, Cook J, Wall T. Scales for the measurement of some work attitudes and aspects of psychological well-being. *Journal of Occupational Psychology*. 1979;52(2):129–48.
22. Utviklingscenter for sykehjem og hjemmetjenester i Østfold. På Alerten – samhandling om kompetanse. Oslo; 2013. Available at: <http://www.utviklingscenter.no/paa-alerten-samhandling-om-kompetanse.5150085-179690.html> (downloaded 01.11.2017).
23. Field A. *Discovering statistics using SPSS: (and sex, drugs and rock 'n' roll)*. London: Sage Publications; 2005.
24. IBM Corp. *IBM SPSS Statistics for Windows, Versjon 23.0*. Armonk, NY: IBM Corp; 2014.
25. Øyen KR, Corneliussen HG, Sunde OS, Mittermeier E, Strand GL, Solheim M, et al. Hvordan har hjemmetjenesten i Sogn og Fjordane tilpasset seg samhandlingsreformen. *Høgskulen i Sogn og Fjordane*, 2015. Available at: <https://www.vestforsk.no/nn/publication/hvordan-har-hjemmetjenestene-i-sogn-og-fjordane-tilpasset-seg-samhandlingsreformen> (downloaded 07.11.2017).
26. Fjørtoft A-K. *Hjemmesykepleie: ansvar, utfordringer og muligheter*. 3rd ed. Bergen: Fagbokforlaget; 2016.
27. Benner P, Tanner CA, Chelsea CA. *Expertise in nursing practise caring. Clinical Judgement, and Ethics*. New York: Springer Publishing Company; 1996.
28. Andresen IH, Hansen T, Grov EK. Norwegian nurses' quality of life, job satisfaction, as well as intention to change jobs. *Nordic Journal of Nursing Research*. 2016;37(2): 90–9.

29. Bjørk IT, Samdal GB, Hansen BS, Tørstad S, Hamilton GA. Job satisfaction in a Norwegian population of nurses: a questionnaire survey. *International Journal of Nursing Studies*. 2007;(44):747–57.
30. Johannessen A, Tufte PA, Christoffersen L. *Introduksjon til samfunnsvitenskapelig metode*. 4th ed. Oslo: Abstrakt forlag; 2010.