

# BMJ Open Quality Development and testing of the QDis-MH checklist for discharge letters from specialised mental healthcare: a stakeholder-centred study

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## ABSTRACT

**Background** The ‘discharge letter’ is the mandatory written report sent from specialists in the specialist services to general practitioners (GPs) on patient discharge. Clear recommendations from relevant stakeholders for contents of discharge letters and instruments to measure the quality of discharge letters in mental healthcare are needed. The objectives were to (1) detect which information relevant stakeholders defined as important to include in discharge letters from mental health specialist services, (2) develop a checklist to measure the quality of discharge letters and (3) test the psychometric properties of the checklist.

**Methods** We used a stepwise multimethod stakeholder-centred approach. Group interviews with GPs, mental health specialists and patient representatives defined 68 information items with 10 consensus-based thematic headings relevant to include in high-quality discharge letters. Information items rated as highly important by GPs (n=50) were included in the Quality of Discharge information-Mental Health (QDis-MH) checklist. The 26-item checklist was tested by GPs (n=18) and experts in healthcare improvement or health services research (n=15). Psychometric properties were assessed using estimates of intrascale consistency and linear mixed effects models. Inter-rater and test–retest reliability were assessed using Gwet’s agreement coefficient (Gwet’s AC1) and intraclass correlation coefficients.

**Results** The QDis-MH checklist had satisfactory intrascale consistency. Inter-rater reliability was poor to moderate, and test–retest reliability was moderate. In descriptive analyses, mean checklist scores were higher in the category of discharge letters defined as ‘good’ than in ‘medium’ or ‘poor’ letters, but differences did not reach statistical significance.

**Conclusions** GPs, mental health specialists and patient representatives defined 26 information items relevant to include in discharge letters in mental healthcare. The QDis-MH checklist is valid and feasible. However, when using the checklist, raters should be trained and the number of raters kept to a minimum due to questionable inter-rater reliability.

## BACKGROUND

The ‘discharge letter’ is the mandatory structured written report sent from specialists in the specialist services to general practitioners

## WHAT IS ALREADY KNOWN ON THIS TOPIC

⇒ High-quality discharge letters may improve continuity of care and reduce risk of adverse events and readmission.

## WHAT THIS STUDY ADDS

⇒ A checklist for relevant contents of high-quality discharge letters from mental health specialist care to general practitioners in primary care was developed.

## HOW THIS STUDY MIGHT AFFECT RESEARCH, PRACTICE OR POLICY

⇒ The 26-item Quality of Discharge information-Mental Health (QDis-MH) checklist is a feasible tool that may be useful for assessment of quality of discharge letters when monitoring and improving transitions between mental healthcare and primary care.

(GPs) on patient discharge. The discharge letter is sometimes referred to as ‘discharge summary’.<sup>1</sup> Discharge letters with insufficient information can compromise continuity of care and increase the risk of adverse events and readmission.<sup>2,3</sup> Many studies have, therefore, pointed to the need for improvement of discharge letters.<sup>4–10</sup>

GPs are receivers of discharge letters and their need for information should be central when specialists write discharge letters. Recent findings from the stakeholder-centred ‘Discharge Communication Study’ in the UK showed that discharge letters deemed as ‘unsuccessful’ by GPs frequently lacked information about reason for admission, diagnosis, medication changes, hospital tests, results and actions, information to patients, and plans for GPs.<sup>9</sup> High-quality discharge letters may reduce the risk of undesired events that occur because GPs have not been informed about risks, treatments and tests that need to be followed up. Patients with mental health conditions often have complex needs. They may be particularly vulnerable to



insufficient communication, collaboration and planning among professionals.<sup>11</sup> Consequently, patients' views and needs should also be particularly focused on in discharge letters.

Documentation requirements may contribute to clinician burnout and turnover.<sup>12</sup> Hospital clinicians experience several barriers to producing good discharge letters, such as time limitations leading to extensive use of 'copy-paste' while writing, writing letters retrospectively from patient notes, and template restrictions.<sup>9</sup> However, high quality of discharge letters, including specific advice to GPs, for example, with regard to psychotropic medications and necessary follow-up, may reduce risk of adverse events, readmission, and hassles and frustrations arising when GPs have to request missing information from the specialist services. Consequently, high-quality discharge letters may reduce the total clinician workload in both primary care and specialist services. Recommendations for relevant contents are necessary for specialists aspiring to write high-quality discharge letters. A range of recommendations for contents of discharge letters exist internationally.<sup>13-15</sup> In Norway, health trusts have developed templates for discharge letters from mental health services and the Directorate of e-Health is responsible for a generic standard.<sup>16</sup> Standards often include principal diagnosis, problem list, medication list, test results and pending test results, treatment plan, prognosis, planned interventions and information about the reason for hospitalisation, significant findings and procedures and treatment provided. However, there is a lack of feasible tools assessing contents of discharge letters available for use in quality audits or research.

Previously, we developed the Quality of Referral information-Mental Health (QRef-MH) checklist using a stakeholder-centred approach. The QRef-MH assesses recommended contents of referral letters from primary care practitioners to mental health specialist services for adults.<sup>17</sup> In this study, we sought to define what information it is that is relevant to include in discharge letters from specialists in mental health specialist services for adults, and which information GPs deem as important to include in discharge letters to ensure sufficient follow-up and rehabilitation of patients. Further, we aimed to develop a checklist to assess the quality of discharge letters and to test the psychometric properties of the checklist. We used a stakeholder-centred approach in order to ensure the relevance and usefulness of the checklist from the relevant perspectives of GPs, patients and specialist care. The checklist is intended for use in training, quality improvement (QI) initiatives and research.

## METHODS

### Design and setting

The study was conducted in Helse Fonna Local Health Authority in Norway. Within the Norwegian public healthcare system, primary care and specialist services are organised as separate entities. Specialist mental

health services include inpatient and outpatient services, forensic services and outreach teams. After discharge from specialist mental health services, the patient's GP is responsible for coordinating patient care. Discharge letters are required by law and sent electronically from the mental health specialist services to the patient's GP. Approximately, 50% of discharge letters are sent to the patients' GP within 1 day of patient discharge.<sup>18</sup> Community mental health nurses, mental health community teams and day centres are frequently involved in the follow-up and rehabilitation of patients and may receive information from specialist mental health services, but do not necessarily get the discharge letter.

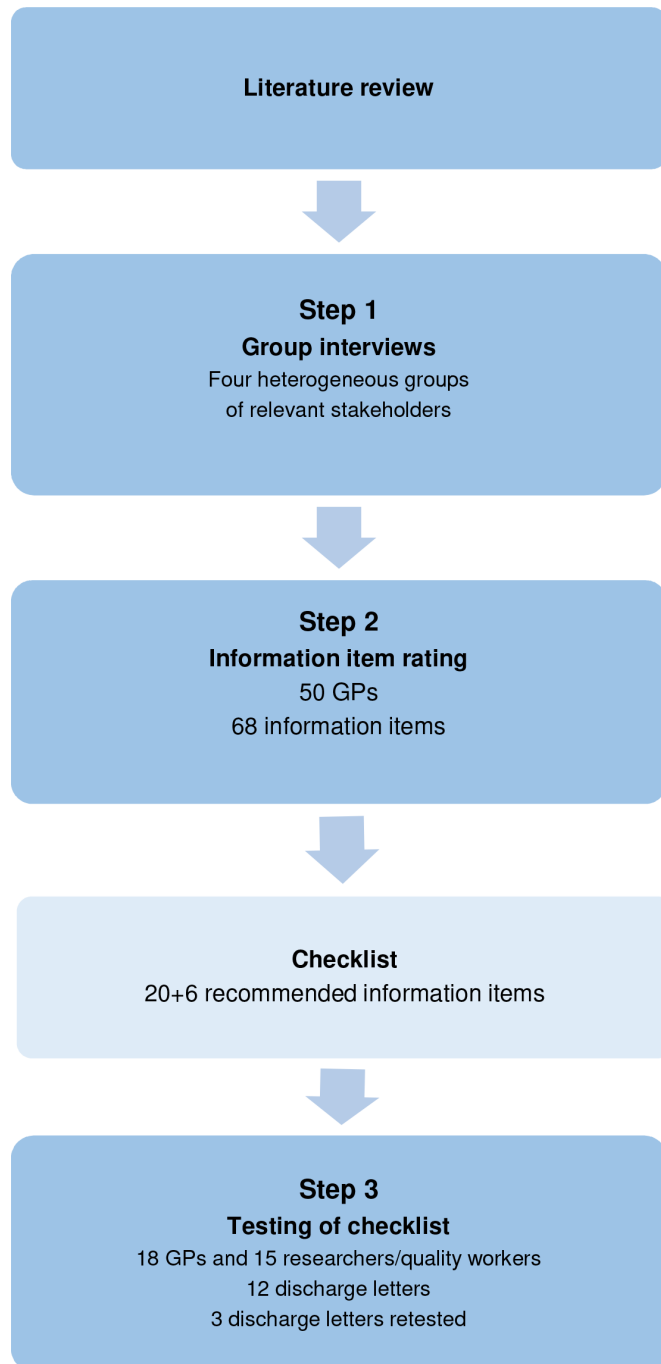
In this study, a checklist was developed and tested within a multimethod design with three steps (figure 1). GPs, mental health specialists and patient representatives were involved to ensure the validity and usefulness of the recommendations and the checklist for the relevant stakeholders.

### Literature review

Initially, we reviewed the literature to identify elements that should ideally be included in discharge letters. During Spring 2017, PubMed and PsycINFO databases were searched for studies reporting on contents of discharge summaries/-letters, using Medical Subject Headings. Search terms were ['Discharge summary' or 'Discharge letter' or 'Patient discharge summary' or 'Information transferal' or 'Communication' or 'Patient handoff' or 'Clinical handover' or 'Discharge communication'], and ['Hospital discharge' or 'Mental health' or 'Mental health services' or 'Psychiatric patients']. More than 1800 database hits were screened by title and abstract. Papers published between January 2006 and June 2017 were included if they (1) aimed at defining which elements it is that should ideally be included in discharge letters, (2) developed new templates for discharge letters or (3) reported elements included in discharge letter templates used in quality audits. Twenty-six studies were included. The 26 studies were reviewed to identify information themes that should ideally be included in discharge letters from specialist mental healthcare to GPs. Out of these, one review<sup>10</sup> and five original studies were performed within the context of mental healthcare.<sup>19-23</sup> We intended to supplement the headings and information items from the group interviews in step 1 below with recommended information items identified in literature to ensure that all relevant headings and information items were included in further steps of the study.

### Step 1: group interviews

Four semistructured interviews with heterogeneous groups representing GPs, mental health specialists, mental health nurses in specialist- and community care and patients and next of kin (N=21, table 1) were conducted to generate suggestions for information items and themes that could be included in discharge letters from specialist mental healthcare for adults. Thirteen



**Figure 1** Overview of the study process. GPs, general practitioners.

(62%) group participants were men. Group interviews were conducted as consensus development panels.<sup>24</sup> The panels performed a structured written brainstorming and organised their responses into thematic categories. At the start of each group session, group participants were presented with the question ‘In your opinion, what type of information is important to include in the document that is sent to the patient’s GP and the referring physician after treatment in specialist mental healthcare for adults (ie, mental health hospital or community mental health centre)?’. The group participants first responded to the question individually on post-it notes. An affinity

diagram was then used by the group to sort the suggested information items written on the post-it notes. Before the grouping of information items, a moderator read all suggested items, one by one, to ensure that all members of the group understood the suggestions and to exclude duplicates. Finally, when the group participants had reached consensus about the grouping of information items from the post-it notes, they together defined headings for each category of information items. These group meetings each lasted approximately 2 hours. The discussion in the groups was audiotaped.

After group interviews, the input from the four groups was combined by two researchers (MH and EB). Inter-group duplicates were removed, and then information items and themes with equivalent meanings were collapsed. The resulting 10 thematic headings and 68 associated information items are presented in [figure 2](#).

### Step 2: rating information items

To find out which information items it was that were most relevant for receivers of discharge letters, the items included in the final version of the checklist were determined by 50 GPs. The GPs were recruited at common meeting places for GPs and hospital specialists in the region, via email, mail and through colleagues. The 50 GPs rated the importance of the 68 suggested information items in a QuestBack web survey, V.34 (QuestBack, Oslo, Norway). They rated the importance of each suggested information item on a scale from 0 (‘not important/irrelevant’) to 5 (‘very important/cardinal’).

For feasibility reasons, the number of included information items in the checklist should be limited. The number of items to include in the checklist was decided by inspecting a curve representing frequency of information items rated as ‘4’ or ‘5’ by the 50 GPs (online supplemental file 1). The cut-off for number of information items to include in the checklist was set just before a large drop of the curve in online supplemental file 1. Twenty items that were most often rated as ‘4’ or ‘5’ (‘very important/cardinal’) by GPs were included in the checklist. The information headings ‘network, plans, divisions of roles’ and ‘services/persons involved in follow-up’ were collapsed into the heading ‘Organisations involved, networks, plans, roles and responsibilities’. Finally, all nine remaining consensus-based thematic headings from group interviews should be represented by at least one item. Therefore, six further items were included so that all thematic headings from group interviews were represented in the checklist. The resulting 26-item checklist was named Quality of Discharge information-Mental Health (QDis-MH). The QDis-MH was distributed along with scoring instructions in the next study steps.

### Step 3: testing the QDis-MH checklist

To explore the feasibility of the QDis-MH checklist and to detect issues pertaining to item wording, two researchers (MH and EB) initially assessed 50 print-outs of anonymised electronic discharge letters using the



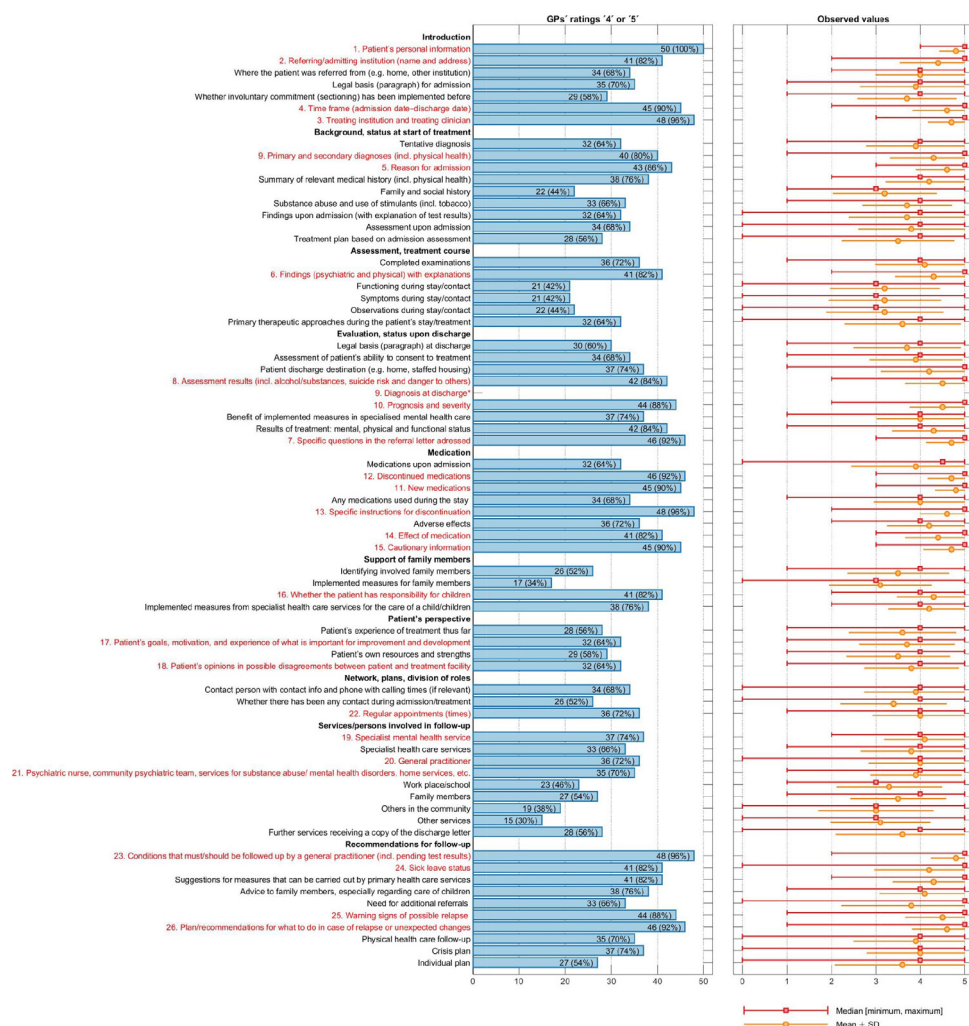
**Table 1** Participants and interview location of semistructured group interviews (step 1)

	Group 1 (n=8)	Group 2 (n=5)	Group 3 (n=5)*	Group 4 (n=3)†
Participants	2 GPs 1 psychiatrist 1 community mental health nurse 1 leader of primary care practice 3 patient representatives	2 GPs 2 community mental health nurses 1 patient representative	2 GPs 1 psychiatrist 2 mental health nurses	2 GPs 1 psychologist
Location	General practice	Office at hospital's research department	Specialist mental healthcare	General practice

\*In addition, one specialist in psychology and one patient representative agreed to participate but did not attend.  
†In addition, one patient representative agreed to participate but did not attend.  
GP, general practitioner.

checklist. The 26 checklist items were rated on a nominal scale: 'no'=0 or 'yes'=1. A 'not applicable' option was used when the information asked for was irrelevant. Asking for 'effect of medication' when the patient did not use medication is an example of a situation in which

a 'not applicable' response was considered appropriate. Consensus meetings were held to clarify minor issues about item scoring after rating of 5 and 50 discharge letters, respectively. Some minor amendments were made to the checklist and the scoring instructions. The



**Figure 2** Information items rated by importance (N=50 GPs) (step 2). Mean and median information item ratings and percentages of items rated '4' or '5' ('very important/cardinal'). Information items included in the final QDis-MH checklist in red. \*\*'Diagnosis' was erroneously left out under the 'evaluation, status at discharge' heading. The item 'primary and secondary diagnoses' was moved to this heading in later checklist versions and renamed 'diagnosis'. Missing rates were 0%–4%, except for 'medications on admission' (8% missing), 'new medications' (8%), 'other services' (20%) and 'further services receiving a copy of the discharge letter' (12%). GP, general practitioner; QDis-MH, Quality of Discharge information-Mental Health.

two raters experienced the checklist as quick and feasible to use.

To test the psychometric properties of the QDis-MH checklist, 18 GPs and 15 respondents working in the field of healthcare improvement or health services research scored a set of 12 print-outs of electronic discharge letters using the checklist. All 33 respondents were mailed the 12 discharge letters along with the 26-item QDis-MH checklist and scoring instructions. Out of the 396 checklists (12 discharge letters  $\times$  33 raters), 394 were completed. A total of 355 (90%) responses had no items missing, 38 (9.6%) had 1–3 items missing and 1 (0.3%) had 4 items missing. Missing item responses were replaced with 0.

To evaluate the concurrent validity of the QDis-MH checklist in terms of the checklist's ability to discriminate between discharge letters with different levels of quality, 4 GPs independently categorised the 12 discharge letters as 'good', 'medium' or 'poor' (4 letters in each of the 3 quality categories). These quality categories served as 'gold standard'. A linear mixed effect (LME) model with quality level as predefined by the four GPs ('good', 'medium', 'poor') as independent variable and the QDis-MH total scale as dependent variable was conducted to assess the discriminant validity of the QDis-MH. Rater and discharge letter were random intercepts. 'Poor' discharge letters were set as reference category.

The inter-rater reliability of scored items was assessed using Gwet's agreement coefficient (Gwet's AC1).<sup>25</sup> Inter-rater reliability in terms of consistency at the total scale level was assessed using an intraclass correlation coefficient (ICC) from a two-way random effects model.<sup>26</sup>

After having returned the baseline scorings, all respondents were mailed 3 out of the 12 discharge letters again to assess test–retest reliability. Gwet's AC<sub>1</sub><sup>25</sup> was used to assess test–retest correlations at the item level, and a two-way random effects model ICC of single rater type was used to assess the test–retest reliability of the QDis-MH mean scale.

### Patient and public involvement

Patient representatives had an advisory role in the planning of the study. The project group initially included two (later one) patient representatives. The project was also recommended by the service user panel of the Department of Research and Innovation, Helse Fonna Local Health Authority, Norway.

### Statistical analysis

Statistical analysis was performed using IBM SPSS Statistics V.24 (IBM) and R Software Package V.3.6.2 (R Core team), packages nlme V.3.1<sup>27</sup> and irrCAC V.1.0.<sup>28</sup> Figures were made in MATLAB V.9.0 (The Mathworks, Natick, Massachusetts, USA).

## RESULTS

### Step 1: information items from group interviews

The 4 group interviews with in all 21 GPs, mental health specialists, mental health nurses and patient

representatives (table 1) yielded suggestions for 68 information items relevant to include in discharge letters. The 68 information items were categorised under 10 thematic headings (figure 2). No additional relevant information items were identified in the literature.

### Step 2: GPs' ratings of recommended information items

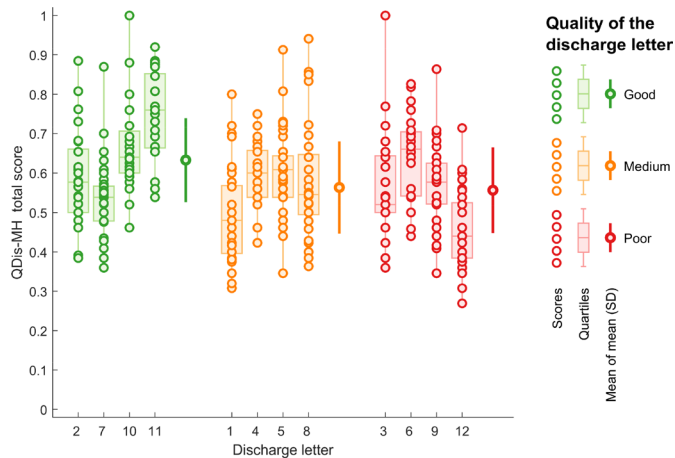
In a web-based survey, the 68 information items generated in previous study steps were rated according to importance by 50 GPs. Thirty-three (66%) of the GPs were men. Twenty-three (46%) GPs were  $\leq 39$  years old. The GPs represented both urban and rural primary care practices. Descriptive statistics from the ratings of the 68 information items are shown in figure 2. After scrutinising potential cut-off values for the number of items to include in the curve shown in online supplemental file 1, a consensus decision to include the 20 items that were most often rated by the GPs as '4' or '5' ('very important/cardinal') was made. Six further additional items were included so that all 10 consensus-based thematic headings from group interviews were represented in the checklist. These additional information items represented the patient's goals and opinions (items 17–18 in the final checklist), scheduled appointments and stakeholders involved in follow-up of the patient (items 19–22).

### Step 3: psychometric properties of the QDis-MH

In the evaluation of psychometric properties of the QDis-MH checklist, 33 respondents had completed 394 checklists. Two hundred and sixteen (55%) checklists were completed by GPs and 178 (45%) by professionals in healthcare improvement/health services research. Comments from respondents did not reveal problems related to understanding of the checklist items. However, respondents' comments suggested the information in discharge letters quite often seemed vague, and hence choosing between clearly formulated response categories was difficult. One example of this situation was item 7 'answers to specific questions/requests in the referral'. Information about the specific requests made by the referring GPs in the patients' referral letters could be vague, indirect or lacking in the discharge letters. Descriptive statistics for QDis-MH item scores at baseline are shown in online supplemental file 2. The first four items of the QDis-MH checklist (ie, patient's personal information, therapist in charge) were excluded from all analyses. These information items were excluded from discharge letters before the letters were sent to the respondents for patient confidentiality reasons. However, as all original discharge letters included the information asked for in items 1–4, the researchers scored these items as '1' in all discharge letters prior to the procedures below.

### QDis-MH total scale

Based on the responses from 18 GPs and 15 QI professionals in step 3, a QDis-MH averaged total scale was computed by adding up all '1' responses divided by the total number of applicable responses (ie, 26 minus the



**Figure 3** QDis-MH total score for discharge letters according to quality of letters ('good', 'medium', 'poor') at baseline (N=33) (step 3). Mean QDis-MH scores, quartiles and SD for discharge letters within each quality group. QDis-MH, Quality of Discharge information-Mental Health.

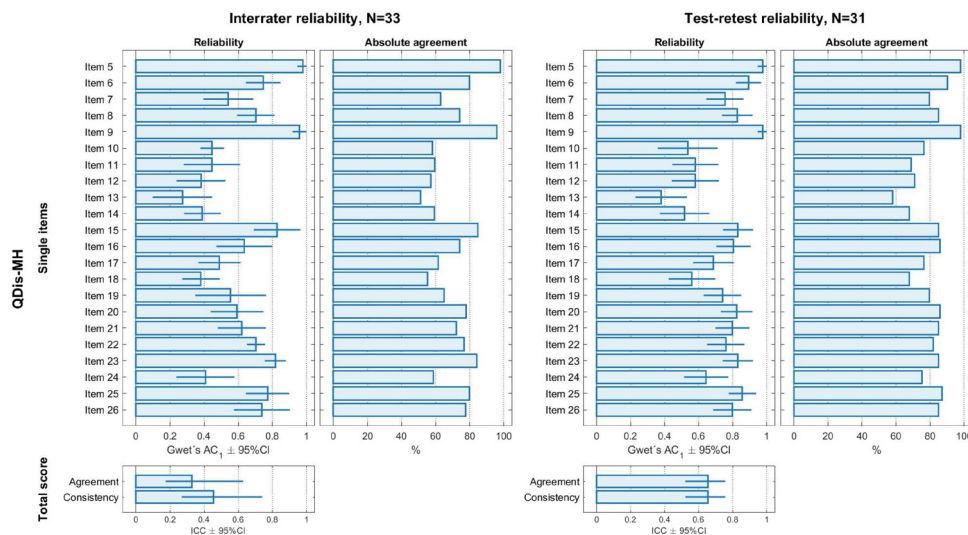
number of 'Not applicable' responses). The QDis-MH total scale was normally distributed in the total sample and within each of the two subgroups (GPs or professionals in healthcare improvement/health services research). The QDis-MH total scale score was M=0.58 (SD=0.13, range 0.27–1.00) in the total sample. Total scale scores were M=0.58 (SD=0.14, range 0.27–1.00) and 0.59 (SD=0.13, range 0.31–0.96) in the subgroups of GPs and professionals in healthcare improvement/health services research, respectively. Intraclass consistency as assessed by Cronbach's alpha was 0.75 in the total sample. In a reliability analysis with the scale-if-item-deleted option, Cronbach's alphas if the item was deleted varied between 0.76 and 0.71 in the total sample.

**Concurrent validity**

Online supplemental file 3 shows percentages of QDis-MH item scores ('yes', 'no' or 'not applicable'), according to quality of discharge letter ('good', 'medium', 'poor') as predefined by four GPs, in the total sample of 33 respondents. Figure 3 shows the QDis-MH total scores in the total sample with quartiles and SDs of discharge letters precategorized by four GPs as 'good', 'medium' and 'poor' quality, respectively. QDis-MH total scale score was M=0.63 (SD 0.13, 95% CI 0.61 to 0.66), range 0.36–1.0 in the group of discharge letters categorised as 'good', and M=0.57 (SD 0.13, 95% CI 0.54 to 0.59), range 0.31–0.96 for 'medium' and M=0.56 (SD 0.13, 95% CI 0.54 to 0.58), range 0.27–1.00 for 'poor' quality discharge letters. In the LME-model performed to investigate the ability of the QDis-MH checklist to discriminate between 'good', 'medium' and 'poor' quality discharge letters, the difference between the 'good' and 'poor' categories of discharge letters was 0.077 (95% CI –0.02 to 0.18), p=0.156. Mean difference was 0.006 (95% CI –0.10 to 0.11), p=0.910, between the 'medium' and 'poor' categories.

**Inter-rater reliability**

Figure 4 shows estimates of inter-rater reliability with 95% CI and percentage of absolute agreement among raters at item- and total scale level for the scored QDis-MH items. Absolute agreement among raters was above 60% for 15 of the 22 information items and above 80% for five items. Inter-rater reliability as estimated by ICC was poor to moderate.<sup>25</sup> ICC consistency for the total scale was 0.45 (95% CI 0.27 to 0.74). Online supplemental file 4 shows estimates of inter-rater and test–retest reliability with 95% CI and percentages of absolute agreement for referral letters categorised according to quality ('good', 'medium', 'poor').



**Figure 4** Inter-rater reliability, test–retest reliability and absolute agreement among raters at baseline (N=33) (step 3). Gwet's agreement coefficient (AC<sub>1</sub>) for single items, intraclass correlation coefficient (ICC) for total score and absolute agreement. QDis-MH, Quality of Discharge information-Mental Health.

### Test–retest reliability

At retest, 31 (94%) of the 33 participants each evaluated 3 of the 12 discharge letters assessed at baseline. The mean test–retest interval was 45 days (SD=25.9, range 14–99). Test–retest consistency was moderate. ICC for the QDis-MH total scale was 0.65 (95% CI 0.52 to 0.76) (figure 4 and online supplemental file 4).

## DISCUSSION

The present multimethod stakeholder-centred study identified relevant information items that professionals in mental health specialist services could consider including when writing discharge letters of high quality. The list of relevant information items included clinical aspects of care, the overall plan for follow-up and specific roles of involved parties.

Many of the information items defined as important by relevant stakeholders were equal to elements defined by existing international standards for discharge communication<sup>13–16</sup> and earlier studies.<sup>1 7 8 10 20 29–32</sup> This suggests that the defined information items are valid and have a high degree of generalisability.

The views of patients' needs, communication among stakeholders and goals for treatment may differ between groups of healthcare professionals and patients.<sup>11 33 34</sup> In this study, however, the active participation of relevant groups of stakeholders most likely secured the validity and relevance of the identified information items. GPs are end-users of discharge letters. Therefore, including information items rated as important by GPs in discharge letters may reduce the risk of undesired events that occur if GPs are not sufficiently informed about tests, treatments and risks that need to be followed up. The patient's personal opinion and social and professional network are particularly central for mental health recovery.<sup>35 36</sup> Consequently, items representing these aspects were also included in the checklist.

The high degree of participation of respondents, comments from study participants and the completeness of checklists from respondents suggests that the checklist was a feasible tool. The list of information items and the QDis-MH checklist may be valuable in training of young specialists, ie, junior physicians or psychologists. Due to the high number of checklist items, the checklist may not be feasible as a tool in everyday clinical practice. However, the checklist can be used for assessment of quality of discharge letters in quality audits in mental health specialist services, or when monitoring and improving transitions between mental healthcare and primary care. In research, it can be used to study whether specific information types predict safe handover, or patient- and system outcomes.

### Limitations

The QDis-MH checklist has some obvious limitations that need to be discussed. First, inter-rater reliability was only poor to moderate. An explanation for this could be

inter-rater variations in item responses due to the 'vagueness' of information provided in the discharge letters. Further, raters may differ due to differences in their definition of the information items themselves.<sup>37</sup> In our study, observed prevalence of equal item scores in one response category only was high, across participants and discharge letters, and several types of kappa lead to paradox results. We therefore used Gwet's AC1,<sup>25</sup> which has its strength in situations with high prevalence of item scores, to estimate inter-rater consistency.

Second, the discriminant ability of the checklist in terms of detecting 'good' discharge letters was insufficient in our small sample. In the lack of a 'gold standard' for quality categories of discharge letters, we asked only 4 GPs to classify only 12 discharge letters into 3 quality categories to measure the quality of discharge letters against. This approach obviously has severe limitations with regard to statistical power and construct validity. A reason for the lack of significant differences between predefined quality categories of discharge letters may therefore be unreliable preclassification of the letters into the quality categories 'good', 'medium' and 'poor' in our study. Further investigation of the discriminant validity of the QDis-MH is, therefore, necessary to determine whether the poor discriminant ability of the checklist in our study was due to low number of discharge letters, misclassification of the quality of the letters pregrouped by the GPs, or poor psychometric properties of the checklist itself.

In Norway, discharge letters are compulsory communication means at hospital discharge. In addition, further communication about the patient may take place via phone, meetings and electronic messaging systems. In our study, we did not study the various modes of communication between services. That is, we did not ask research questions such as 'which is the better communication channel?' or 'is paper or electronic format the most feasible?'. The QDis-MH checklist does not assess the timing, structure, length or quality of language in discharge letters. These issues pertaining to discharge letters all need to be further explored.<sup>1 7 38 39</sup>

## CONCLUSIONS

The present stakeholder-centred study identified 26 relevant information items that patient representatives, mental health specialists and GPs regard as relevant and important to include in high-quality discharge letters. The list of information items, therefore, represents a valid supplement to existing standards or templates for discharge letters. The QDis-MH checklist may be used in training, quality audits and research. The QDis-MH showed satisfactory intrascale consistency and test–retest reliability. However, the discriminant validity and inter-rater reliability of the checklist were questionable. Therefore, when using the checklist in quality audits or research, the scoring instructions should be strictly followed and the number of raters kept to a minimum. Raters should be sufficiently trained prior to using the

checklist and consensus discussions among raters encouraged. Future research should focus on whether the use of the checklist actually impacts on continuity of care and patient outcomes.

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**Contributors** The study design was developed by MH, EB and JA. The focus group interviews and literature review were conducted by EB and MH. EB was responsible for the recruitment of GPs. All analyses were conducted by EB or JA. MH, HBH and JH contributed with advice regarding the research questions explored and constructive feedback regarding the interpretation of the results and the writing of the manuscript. All authors read and approved the final manuscript. EB is responsible for the overall content as guarantor.

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**Competing interests** None declared.

**Patient and public involvement** Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

**Patient consent for publication** Not applicable.

**Ethics approval** All study participants provided written informed consent. No ethics approval was required as no patients were involved. The study was approved by the Norwegian Social Science Data Service (reference no. 53392), which is the appropriate body to seek approval from for this kind of study according to Norwegian legislation.

**Provenance and peer review** Not commissioned; externally peer reviewed.

**Data availability statement** Data are available on reasonable request. The datasets analysed during the current study are not publicly available, but data are available from the corresponding author on reasonable request.

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