Supplementary Table 1 Summary of changes to the HoNOS.

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| **Summary of rating instructions:**  1) Rate each scale in order from 1 to 12  2) Do not include information rated in an earlier item  except for item 10 which is an overall rating  3) Rate the MOST SEVERE problem that occurred  during the period rated  4) All scales follow the format:  0 = no problem  1 = minor problem requiring no action  2 = mild problem but definitely present  3 = moderately severe problem  4 = severe to very severe problem  *Rate 9 if not known* |
| **Rating instructions**   * Rate each scale in order from 1 to 12. * Rate the MOST SEVERE problem that occurred during the previous TWO WEEKS, unless otherwise specified. * A clinical assessment should enable the rater to score all HoNOS scales. * Use all available information in making your rating. * Take into account factors such as culture and context when assessing whether specific behaviours, experiences or beliefs are problematic. * Consider the impact on behaviour and/or the degree of distress that the problem causes. * Do not include information rated in an earlier item except for item 10 which is an overall rating. * All scales follow the format:   0 = no problem  1 = minor problem requiring no action  2 = mild problem but definitely present  3 = moderately severe problem  4 = severe to very severe problem   * This glossary provides guidance as to the meaning of each rating level. * The glossary contains examples of behaviours to be rated but these are examples NOT exhaustive lists of things to be considered. Therefore, at times, referring to the underlying rating format above may be helpful. * As a guide, ratings of 0 and 1 are not clinically significant, requiring no specific action other than possible monitoring for change. Ratings of 2 and above are regarded as clinically significant and would warrant recording in the clinical record for ongoing monitoring. A rating of 2 may be incorporated in the care plan. Ratings 3 and 4 should always be incorporated in the patient’s care plan. * When a lack of information from assessment means rating is not possible, a 9 is used to denote this. Where possible, this should be avoided, because missing data make scores less comparable over time or between settings. |

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| **Items** | **Ratings** | | | | |
| **0** | **1** | **2** | **3** | **4** |
| **1. Overactive or aggressive or disruptive or agitated behaviour** |  | | | | |
| * *Include such behaviour due to any cause (e.g. drugs, alcohol, dementia, psychosis, depression, etc.)* * *Do not include bizarre behaviour rated at Scale 6.* | No problem of this kind during the period rated. | Irritability, quarrels, restlessness etc. not requiring action. | Includes aggressive gestures, pushing or pestering others; threats or verbal aggression; lesser damage to property (e.g. broken cup, window); marked over-activity or agitation. | Physically aggressive to others or animals (short of rating 4); threatening manner; more serious  overactivity or destruction of property. | At least one serious physical attack on others or on animals; destructive of property (e.g. fire-setting); serious intimidation or obscene behaviour. |
| * *Rate any of the behavioural components that this scale covers from overactive or aggressive or disruptive or agitated behaviours.* * *Include such behaviour due to any cause (e.g. drugs; alcohol; dementia; psychosis; depression).* * *Do not include bizarre behaviour to be rated at Scale 6, unless it is aggressive, destructive or overactive.* |
| **2. Non-accidental self-injury** |  | | | | |
| * *Do not include accidental self-injury (due e.g. to dementia or severe learning disability); the cognitive problem is rated at Scale 4 and the injury at Scale 5.* * *Do not include illness or injury as a direct consequence of drug/alcohol use rated at Scale 3 (e.g. cirrhosis of the liver or injury resulting from drink driving which are rated at Scale 5).* | No problem of this kind during the period rated. | Fleeting thoughts about ending it all but little risk during the period rated; no self-harm. | Mild risk during the period rated; includes non-hazardous self-harm (e.g. wrist-scratching). | Moderate to serious risk of deliberate self-harm during the period rated; preparatory acts (e.g. collecting tablets). | Serious suicidal attempt and/or serious deliberate self-injury during the period rated. |
| * *Do not include accidental self-injury (due e.g. to dementia or severe learning disability); the cognitive problem is to be rated at Scale 4 and the injury at Scale 5.* * *Do not include illness or injury as a direct consequence of drug/alcohol use (e.g. cirrhosis of the liver or injury resulting from drink driving) to be rated at Scale 5.* | Mild risk during the period rated; includes more frequent thoughts or talking about self-harm or suicide (including ‘passive’ ideas of self-harm such as not taking avoiding action in a potentially life threatening situation e.g. while crossing a road). | Moderate to serious risk of deliberate self-harm; includes frequent/ persistent thoughts or talking about self-harm; includes preparatory behaviours (e.g. collecting tablets). |

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| **Items** | **0** | **1** | **2** | **3** | **4** |
| **3. Problem drinking or drug-taking** |  | | | | |
| * *Do not include aggressive/destructive behaviour due to alcohol or drug use, rated at Scale 1.* * *Do not include Physical Illness or disability due to alcohol or drug use, rated at Scale 5.* | No problem of this kind during the period rated. | Some over-indulgence but within social norm. | Loss of control of drinking or drug-taking, but not seriously addicted. | Marked craving or dependence on alcohol or drugs with frequent loss of control, risk taking under the influence. | Incapacitated by alcohol/drug problem.  ***Rate 9 if Not Known*** |
| * *Include psychological as well as behavioural impacts of drug (illicit and/or prescription) and alcohol use.* * *Do not include aggressive/destructive behaviour due to alcohol or drug use already rated at Scale 1.* * *Do not include physical illness or disability due to alcohol or drug use to be rated at Scale 5.* * *Do not include dependence on tobacco products unless there are severe and adverse consequences arising from that addiction above and beyond the known long-term harms to physical health.* | Some excessive consumption but no adverse consequences. | Excessive and/or harmful consumption resulting in adverse consequences, but no obvious craving or dependency. | Definite craving and/or dependence on alcohol or drugs. | Severe craving/ dependence resulting in severe adverse consequences from alcohol/drug problems. |
| **4. Cognitive problems** |  | | | | |
| * *Include problems of memory, orientation and understanding associated with any disorder: learning disability, dementia, schizophrenia, etc.* * *Do not include temporary problems (e.g. hangovers) resulting from drug/alcohol use, rated at Scale 3.* | No problem of this kind during the period rated. | Minor problems with memory or understanding (e.g. forgets names occasionally). | Mild but definite problems (e.g. has lost the way in a familiar place or failed to recognise a familiar person); sometimes mixed up about simple decisions. | Marked disorientation in time, place or person; bewildered by everyday events; speech is sometimes incoherent; mental slowing. | Severe disorientation (e.g. unable to recognise relatives), at risk of accidents; speech incomprehensible; clouding or stupor.  ***Rate 9 if Not Known*** |
| * *Include problems of orientation, memory, language, thought disorder and problem solving associated with any disorder: dementia, learning disability, schizophrenia, etc.* * *Do not include temporary problems (e.g. hangovers) which are clearly associated with alcohol, drug or medication use, rated at Scale 3.* * *Do not rate disorders of thought content (e.g. eccentric or delusional thinking) that will be rated at Scale 6.* | Minor problems with orientation (e.g. occasionally disorientated to time); memory (e.g. occasionally forgets names); language (e.g. on occasions unable to clearly express ideas; or has to have questions and instructions repeated); problem solving (e.g. able to solve simple problems but some difficulty with complex tasks). | Mild but definite problems with orientation (e.g. lost way in an unfamiliar place); memory (e.g. some difficulty remembering events; learning new material); language (e.g. some difficulty understanding and/or expressing ideas); mild thought disorder; problem solving (e.g. sometimes mixed up about simple decisions.) | Moderate problems with orientation (e.g. lost way in a familiar place; often disorientated to time); memory (e.g. new material rapidly lost; only highly learned material retained); language (e.g. speech can be incoherent; fails to understand common words/phrases); moderate thought disorder evident; problem solving (e.g. frequently unable to think clearly or solve simple problems). | Severe difficulties with orientation (e.g. consistently disorientated to time, person and place); memory (e.g. loss of distant and recent memory; unable to learn new information); language (e.g. very limited receptive or expressive communication); severe thought disorder; no effective problem solving. |

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| **Items** | **0** | **1** | **2** | **3** | **4** |
| **5. Physical illness or disability problems** |  | | | | |
| * *Include illness or disability from any cause that limits or prevents movement, or impairs sight or hearing, or otherwise interferes with personal functioning.* * *Include side-effects from medication; effects of drug/alcohol use; physical disabilities resulting from accidents or self-harm associated with cognitive problems, drink-driving, etc.* * *Do not include mental/behavioural problems rated at Scale 4.* | No physical health problem during the period rated. | Minor health problems during the period (e.g. cold, non-serious fall, etc.) | Physical health problem imposes mild restriction on mobility and activity. | Moderate degree of restriction on activity due to physical health problem. | Severe or complete incapacity due to physical health problem. |
| **6. Problems associated with hallucinations and/or delusions** |  | | | | |
| * *Include hallucinations and delusions irrespective of diagnosis.* * *Include odd and bizarre behaviour associated with hallucinations or delusions.* * *Do not include aggressive, destructive or overactive behaviours attributed to hallucinations or delusions, rated at Scale 1.* | No evidence of hallucinations or delusions during the period rated. | Somewhat odd or eccentric beliefs not in keeping with cultural norms. | Delusions or hallucinations (e.g. voices, visions) are present, but there is little distress to patient or manifestation in bizarre behaviours, i.e. clinically present but mild. | Marked preoccupation with delusions or hallucinations, causing much distress and/or manifested in obviously bizarre behaviour, i.e. moderately severe clinical problem. | Mental state and behaviour is seriously and adversely affected by delusions or hallucinations, with severe impact on patient.  ***Rate 9 if Not Known*** |
| * *Include hallucinations and/or delusions irrespective of diagnosis.* * *Include unusual and bizarre behaviour associated with hallucinations or delusions.* * *Do not include aggressive, destructive or overactive behaviours attributed to hallucinations and/or delusions, already rated at Scale 1.* | Somewhat unusual or eccentric beliefs not in keeping with cultural norms. | Hallucinations or delusions are present, but there is little distress to patient or manifestation in bizarre behaviours, i.e. clinically present but mild. | Marked preoccupation with hallucinations or delusions, causing much distress and/or manifested in obviously bizarre behaviour, i.e. moderately severe clinical problem. | Mental state and behaviour is seriously and adversely affected by hallucinations or delusions, with severe impact on patient. |
| **7. Problems with depressed mood** |  | | | | |
| * *Do not include overactivity or agitation, rated at Scale 1.* * *Do not include suicidal ideation or attempts, rated at Scale 2.* * *Do not include delusions or hallucinations, rated at Scale 6.* | No problem associated with depressed mood during the period rated. | Gloomy; or minor changes in mood. | Mild but definite depression and distress (e.g. feelings of guilt; loss of self-esteem). | Depression with inappropriate self-blame; preoccupied with feelings of guilt. | Severe or very severe depression, with guilt or self-accusation.  ***Rate 9 if Not Known*** |
| * *Include cognitive, affective or behavioural aspects of depressed mood (e.g. loss of interest or pleasure; lack of energy; loss of self-esteem; feelings of guilt).* * *Do not include overactivity or agitation, already rated at Scale 1.* * *Do not include suicidal ideation or attempts, already rated at Scale 2.* * *Do not include delusions or hallucinations, already rated at Scale 6.* * *Do not include other symptoms of depression as described at Scale 8 (i.e. changes in sleep, appetite or weight; anxiety symptoms).* | Gloomy or minor changes in mood. | Mild but definite depressed mood and distress (e.g. loss of interest or pleasure; feelings of guilt; loss of self-esteem). | Moderate depressed mood on subjective or objective measures (depressive symptoms more marked). | Severe depressed mood on subjective or objective grounds (e.g. profound loss of interest or pleasure; preoccupation with ideas of guilt or worthlessness). |

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| **Items** | | **0** | **1** | | | **2** | | | **3** | | | | **4** |
| **8. Other mental and behavioural problems** | |  | | | | | | | | | | | |
| * *Rate only the most severe clinical problem not considered at scales 6 and 7 as follows.* * *Specify the type of problem by entering the appropriate letter: A phobic; B anxiety; C obsessive-compulsive; D mental strain/tension; E dissociative; F somatoform; G eating; H sleep; I sexual; J other, specify.* | | No evidence of any of these problems during period rated. | Minor non-clinical problems. | | | A problem is clinically present at a mild level (e.g. patient has a degree of control). | | | Occasional severe attack or distress, with loss of control (e.g. has to avoid anxiety provoking situations altogether, call in a neighbour to help, etc.) i.e. moderately severe level of problem. | | | | Severe problem dominates most activities.  ***Rate 9 if Not Known*** |
| * *Rate only the most severe mental and behavioural problem not considered in previous items.* * *Specify the type of problem by entering the appropriate letter from the following table.*  |  | | --- | | A Phobic: Fear or avoidance behaviour in response to specific situations/objects that is out of proportion to actual threat. | | B Anxiety: Patient experiences general anxiety, panic or similar experiences. | | C Obsessive-compulsive: Recurrent obsessions or compulsive acts that are distressing and typically perceived by the patient as irrational. | | D Reactions to stressful events or trauma: Acute stress reactions and/or response to traumatic events. | | E Dissociative: Mental process where the patient disconnects from their thoughts, feelings, memories or sense of identity. | | F Somatoform: Persistent perceived physical health problems that have no known medical basis. | | G Eating: Excessive intake or persistent restriction of food intake; includes related disordered behaviours to manage weight e.g. purging, excessive exercise, dieting etc. | | H Sleep: Problems with the quality, timing or duration of sleep that impact on sense of fatigue, cognitive function or mood. | | I Sexual: Disturbance of the patient’s ability to respond sexually or experience sexual pleasure. | | K Elated mood: Feelings of euphoria, excitement, expansive mood or optimism that do not reflect person's actual circumstances. | | O Other: Any other mental or behavioural problem, not rated elsewhere, that is significant that results in patient distress or impacts upon their behaviour. |   N.B. J has been deliberately omitted to allow compatibility with the previous version of the HoNOS. | | A problem is clinically present, but at a mild level (e.g. the problem is intermittent; the patient maintains a degree of control or is not unduly distressed). | | | Moderately severe clinical problem (e.g. more frequent, more distressing or more marked symptoms). | | | | Severe problem which dominates or seriously affects many activities. |
| **Items** | **0** | | | | **1** | | | **2** | | **3** | **4** | | |
| **9. Problems with relationships** |  | | | | | | | | | | | | |
| * *Rate the patient’s most severe problem associated with active or passive withdrawal from social relationships, and/or non-supportive, destructive or self-damaging relationships.* | No significant problem during the period. | | | Minor non-clinical problems. | | | Definite problems in making or sustaining supportive relationships; patient complains and/or problems are evident to others. | | | Persisting major problems due to active or passive withdrawal from social relationships and/or to relationships that provide little or no comfort or support. | | Severe and distressing social isolation due to inability to communicate socially and/or withdrawal from social relationships.  ***Rate 9 if Not Known*** | |
| * *Rate the patient's most severe problem associated with active or passive withdrawal from interpersonal relationships, and/or non-supportive, destructive or self-damaging relationships.* * *Include family as well as broader social relationships.* | Definite problems in making or sustaining supportive relationships which create mild but significant distress or difficulty for the patient; patient complains and/or problems are evident to others. | | | Persisting major problems due to active or passive withdrawal from social relationships; relationships that provide little or no comfort or support; and/or problematic relationships which create moderate levels of distress or difficulty for the patient. | | Severe and distressing social isolation or withdrawal from social relationships; and/or problematic relationships which create severe levels of distress or difficulty for the patient. | |
| **10. Problems with activities of daily living** |  | | | | | | | | | | | | |
| * *Rate the overall level of functioning in activities of daily living (ADL) (e.g. problems with basic activities of self-care such as eating, washing, dressing, toilet; also complex skills such as budgeting, organising where to live, occupation and recreation, mobility and use of transport, shopping, self-development, etc.).* * *Include any lack of motivation for using self-help opportunities, since this contributes to a lower overall level of functioning.* * *Do not include lack of opportunities for exercising intact abilities and skills, rated at Scales 11-12.* | No problem during period rated; good ability to function in all areas. | | | Minor problems only (e.g. untidy, disorganised). | | | Self-care adequate, but major lack of performance of one or more complex skills (see above). | | | Major problems in one or more areas of self-care (eating, washing, dressing, toilet) as well as major inability to perform several complex skills. | | Severe disability or incapacity in all or nearly all areas of self-care and complex skills. | |
| * *Rate the overall level of functioning in activities of daily living (ADL) (e.g. problems with basic activities or self-care such as eating, washing, dressing, toilet; also complex skills such as budgeting, organising where to live, occupation and recreation, mobility and use of transport, shopping, self-development, etc.).* * *Rate what the person is capable of doing, independently of current support from others.* * *Include any lack of motivation, including the use of self-help opportunities, since this contributes to a lower overall level of functioning.* * *Do not include lack of opportunities for exercising intact abilities and skills, to be rated at Scales 11-12.* | Minor problems only with self-care without significantly adverse consequences (e.g. untidy; disorganised), and / or minor difficulty with complex skills but still able to function independently. | | | Self-care and basic activities adequate (though some prompting may be required) but major lack of performance of one or more complex skills (see above). | | | Major problems in one or more areas of self-care (e.g. eating; washing; dressing; toilet) as well as major inability to perform several complex skills. | |

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| **Items** | **0** | **1** | | **2** | **3** | **4** | |
| **11. Problems with housing and living conditions** |  | | | | | | |
| * *Rate the overall severity of problems with the quality of living conditions and daily domestic routine. Are the basic necessities met (heat, light, hygiene)? If so, is there help to cope with disabilities and a choice of opportunities to use skills and develop new ones?* * *Do not rate the level of functional disability itself, rated at Scale 10.*   **NB: Rate patient’s usual situation. If in acute ward, rate the home accommodation. If information not available, rate 9.** | Accommodation and living conditions are acceptable; helpful in keeping any disability rated at Scale 10 to the lowest level possible, and supportive of self-help. | | Accommodation is reasonably acceptable although there are minor or transient problems (e.g. not ideal location, not preferred option, doesn’t like the food, etc.) | Significant problem with one or more aspects of the accommodation and/or regime (e.g. restricted choice; staff or household have little understanding of how to limit disability  or how to help use or develop new or intact skills). | Distressing multiple problems with accommodation (e.g. some basic necessities absent); housing environment has minimal or no facilities to improve patient’s independence. | | Accommodation is unacceptable (e.g. lack of basic necessities, patient is at risk of eviction, or ‘roofless’, or living conditions are  otherwise intolerable) making patient’s problems worse.  ***Rate 9 if Not Known*** |
| * ***NB: Rate patient's usual housing and living conditions****. In general, try to rate the housing and living conditions most relevant to the patient’s situation (e.g. if a brief stay in an acute ward is anticipated, rate the patient’s home environment; if discharge is imminent, rate the patient’s destination accommodation; if a lengthy hospital stay (e.g. over 6 months) is anticipated, rate the suitability of the ward).* * *Rate the overall severity of problems with the quality of housing and living conditions. Are the basic necessities met (e.g. adequate heat; light; sanitation; cooking facilities)?* * *In addition to basic necessities, consider how well the patient’s housing and living conditions match their current needs.* * *Do not rate the level of functional disability itself, already rated at Scale 10.* | Housing and living conditions are acceptable; helpful in keeping any disabilities rated at Scale 10 to the lowest level possible and supportive of self-help. | | Housing and living conditions are reasonably acceptable although there are minor or transient problems (e.g. not ideal location; not preferred option etc.). | Problem with one or more aspects of housing or living conditions (e.g. limited facilities to improve patient’s independence). | Multiple significant problems with housing or living conditions (e.g. some basic necessities absent; housing or living conditions have minimal or no facilities to improve patient's independence). | | Housing or living conditions are unacceptable (e.g. lack of basic necessities; patient is at risk of eviction or 'roofless'; or living conditions are otherwise intolerable) making patient's problems worse. |

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| **Items** | **0** | **1** | | **2** | **3** | **4** | |
| **12. Problems with occupation and activities** |  | | | | | | |
| * *Rate the overall level of problems with quality of day-time environment. Is there help to cope with disabilities, and opportunities for maintaining or improving occupational and recreational skills and activities? Consider factors such as stigma, lack of qualified staff, access to supportive facilities e.g. staffing and equipment of day centres, workshops, social clubs, etc.* * *Do not rate the level of functional disability itself, rated at Scale 10.*   **NB: Rate patient’s usual situation. If in acute ward, rate activities during period before admission. If information not available, rate 9.** | Patient’s day-time environment is acceptable: helpful in keeping any disability rated at Scale 10 to the lowest level possible, and supportive of self-help. | | Minor or temporary problems (e.g. late giro cheques): reasonable facilities available but not always at desired times, etc. | Limited choice of activities; lack of reasonable tolerance (e.g. unfairly refused entry to public library or baths, etc.); handicapped by lack of a permanent address; insufficient carer or professional support; helpful day setting available but for very limited hours. | Marked deficiency in skilled services available to help minimise level of disability; no opportunities to use intact skills or add new ones; unskilled care difficult to access. | | Lack of any opportunity for daytime activities makes patient’s problems worse.  ***Rate 9 if Not Known*** |
| * ***NB: Rate patient's usual situation.*** *In general, try to rate the occupation and activities most relevant to the patient’s situation (e.g. if a brief stay in an acute ward is anticipated, rate the patient’s usual occupation and activities; if discharge is imminent, rate the occupation and activities of the patient’s destination; if a lengthy hospital stay (e.g. over 6 months) is anticipated, rate the suitability of the ward’s provision).* * *Rate the overall level of problems with the quality of meaningful occupation and activities. Is there help to cope with disabilities, and opportunities for maintaining or improving occupational and recreational skills and activities? Consider factors such as stigma; lack of suitably skilled staff; access to supportive facilities (e.g. staffing and equipment of day centres, workshops, social clubs, etc.).* * *Consider how well the patient’s occupation and activities match their current needs.* * *Do not rate the level of functional disability itself, already rated at Scale 10.* | Patient's occupation and activities are acceptable; helpful in keeping any disability rated at Scale 10 to the lowest level possible and supportive of self-help, and maximising autonomy and role functioning. | | Minor or temporary problems (e.g. reasonable facilities available but not always at desired times, etc.). | Limited choice of activities to maintain or improve autonomy and role functioning (e.g. there is a lack of reasonable tolerance such as unfairly refused entry to public facilities; or insufficient skilled services; or helpful service is available but for very limited hours). | Marked deficiency in skilled services available to help minimise level of disability and help optimise autonomy and role functioning. No opportunities to use intact skills or add new ones; unskilled care difficult to access. | | Lack of any opportunity for meaningful activities, or complete inability of services to involve the patient in such activities, may make patient's problems worse. |