
Case study: Head injury

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This study is presented to encourage recognition of the contribution mental health practitioners can make to the care of head-injured people.

Head injuries are a major cause of morbidity (Medical Disability Society, 1988) with a peak incidence in young men.

Service delivery for people who have had a severe head injury is characterised by contact with multiple teams of professionals (Teasdale, 1995), often working in geographically distinct sites.

Case history – J. B., aged 24 years

J. B. was referred to a liaison psychiatric service three weeks after admission to a specialist head injury rehabilitation service.

He had sustained a severe closed head injury eight months previously as the front-seat passenger in a road traffic accident. His initial score was 8 on the Glasgow Coma Scale. After resuscitation he was transferred to a specialist neurosurgical unit and ventilated for two weeks. Post-traumatic amnesia of at least one month was estimated. Magnetic resonance imaging scanning six months post-injury revealed damage to both frontal lobes, particularly the lateral aspect of the left lobe. After returning to his local district general hospital he had a series of operative procedures for lower-limb fractures. He had remained on an orthopaedic ward for two months waiting for a rehabilitation unit vacancy.

It had been presumed that following recovery from surgery, he would go to live with his family. His mother refused because of her concerns about his criminal activities before the accident. At this

point the orthopaedic team contacted the local social services department and a care manager was allocated. Together, they agreed further 'assessments' were needed to clarify his long-term needs. A head injury unit was thought an appropriate place to determine his requirements. The choice of unit was influenced by J. B.'s wish not to leave the London area and by the availability of an in-patient bed. No advice seems to have been sought in matching J. B.'s assessment requirements with the services offered by particular units. The district general hospital's consultant liaison psychiatrist and clinical psychology department were never contacted. The head injury unit insists on funding for a minimum three-month period.

Information exchanged between the orthopaedic and rehabilitation team concerned the nature and acute treatment of his injuries. No detailed personal history had ever been taken from J. B. or his mother.

The referral letter to the liaison psychiatrist by the unit's consultant physician described episodes of physical and verbal aggression. While attending the weekly multi-disciplinary rehabilitation team meeting, before contact with J. B., additional issues emerged. He cooperated minimally with unit routines and staff were frightened of talking to him because of his aggression and cold, intimidating manner. They questioned the aims of rehabilitation – back to an antisocial lifestyle? Despite these negative views the group acknowledged feeling immense sadness at his isolation on the unit and lack of visitors.

History from J. B.

J. B. had lived all his life in a satellite town of London. His father left the family home when J. B. was 18 months old. He had four half brothers from his

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mother's further relationships. There is no known family history of contact with mental health services.

J. B.'s childhood home was on a large out-of-town housing estate. Shortly after entering secondary school, he was placed in a class for slow learners. He believed he had seen an educational psychologist but otherwise had had no contact with mental health services.

From the age of 13 he spent the bulk of his time truanting with a group of local boys. By his late teens he had become involved in more organised criminal circles and at age 20 he received a custodial sentence for theft. He found his 18 months in prison relatively easy – liking the clearly defined hierarchies and acquiring skills in the building trade. On his release he started regularly carrying a gun but denied using an armed weapon except to shoot rabbits. However, he readily admitted using a knife or club to inflict 'minor' injuries while collecting protection money. Following prison he had lived with acquaintances.

J. B. had always been heterosexual in orientation. His only sustained relationship was with his mother's neighbour (aged 40 years). He had a small group of criminal colleagues and described himself as "a loner in a big crowd of friends". He regularly drank 8–10 pints of beer a night, and experimented widely with drugs but used nothing on a regular basis. Before his accident J. B. had been taken to accident and emergency departments at least three times in an unconscious state following fights while intoxicated. On each occasion he had recovered within one hour and discharged himself against medical advice.

At initial interview J. B. was a thin, gaunt, casually dressed man who looked much older than his years. He had multiple facial scars but no apparent physical disabilities. His responses were mostly short but he talked animatedly about his hobby, shooting rabbits. He talked in a factual open manner about his past criminal activities and saw no option but to return to a similar lifestyle. Discussing his girlfriend he became tearful and blamed her not visiting for his feeling "very down" inside. He ate minimally at meal times, and had lost 15 kg following the accident. When the night staff went off duty he was awake but he refused to come out of bed until afternoon therapy sessions and then watched television with the few other patients still up later in the evening. He felt staff were "picking on him" and cited a nurse's suggestion to watch television mid-morning as "they know that ... winds me up". No suicidal plans were elicited but he did talk vaguely of "sorting out" the suppliers of the vehicle involved in the accident. He denied ever experiencing psychotic phenomena. He became irritable when

discussing the content of the therapy sessions. Changing topics required gentle persistence and he had further difficulties considering alternative, more positive interpretations of the staff's activities.

J. B. overestimated the initial interview as lasting hours. He became irritable at attempts to test concentration, digit span had to be abandoned, serial 3s resulted in two correct subtractions. He showed marked difficulties with frontal lobe testing, for example he looked bewildered, then angry when asked to "guess" in which hand a coin was hidden (strictly alternated right, left, right). He was aware of recent major national events. His current cognitive state suggested significant deterioration, it seemed unlikely he could sustain his pre-injury pattern of arranging lodging with friends and executing planned criminal activities.

J. B. felt his only problems were feeling "down", and anticipated needing contact only with benefit and housing agencies.

On physical examination he had severe scarring of his lower limbs with loss of muscle bulk and power commensurate with his orthopaedic problems. Detailed neurological testing revealed no abnormal signs.

Collateral history

J. B.'s mother described him as having being a cold, distant, intimidating man before his accident. She was pleased he had left home. His well-known criminal activities had led to frequent visits from other criminals and the police. After the accident he had appeared more outgoing, talkative and had shown some emotion (e.g. being tearful). However, she felt wary of him as on his last visit home he had smashed the television screen with his foot because the time of a favourite television programme had been changed. She stopped visiting him in hospital when it seemed that the orthopaedic team expected he could return home to live.

Contacting the senior nurse on his orthopaedic ward revealed he had been placed shortly after admission in a single room normally reserved for frail elderly patients because of arguments about using the ward television and his refusal to turn lights off. No physical assaults or attempts to leave had been recorded. He had been a reclusive, isolated patient with few visitors and had never joined the other long-stay orthopaedic patients in having an occasional beer.

Psychometric testing

Testing with the Wechsler Adult Intelligence Scale (Wechsler, 1981) revealed a full scale IQ of 65

(verbal/performance deficit 15) with an estimated premorbid IQ in the low-average range.

Marked frontal lobe impairment was confirmed, including using the modified Wisconsin card sorting test (Nelson, 1976). Modified Goldstein-Sheerer Tests (Goldstein & Shearer, 1941) formally revealed abstract reasoning deficits; these tests rely heavily on the skills and experience of the individual psychologist because testing materials are selected for individual patients and administration involves qualitative observations. J. B. had difficulties selecting and grouping items, breaking up a whole into parts, and had severe difficulties shifting from one topic to another.

Formulation

J. B. was a young man with limited intellectual abilities, a deficient education, heavy alcohol use, past head injuries and a well-established pattern of antisocial behaviours. This included premeditated crime using violence, carrying weapons and episodic severe aggression usually involving alcohol. It is likely he had a restricted range of coping skills before injury. The effects of a severe head injury with recognised focal damage have to be considered against this background. He was alienated from his social and family networks and had features of a depressive mood disorder.

Management

A risk assessment was undertaken by all professionals within the unit on the day after the first psychiatric assessment using a process based on the work of Carson (e.g. 1994). The risk decision was defined as, 'Would it be safe for J. B. to remain a patient on the unit for a further 24 hours?'. All present shared their assessments in suggesting possible positive and negative outcomes. Positive outcomes included allowing further work on defining his domestic needs. Negatives included the risk of causing death or serious harm to others, especially using weapons. For each possible outcome a value and likelihood was agreed. This was an important part of the process as it allowed full, frank sharing of opinion and acknowledgement of different perspectives. He had directly physically assaulted staff only in the first days of admission, always when he was being formally tested. Therefore, physical assault had a high negative value but a low likelihood. It was deemed

safe and profitable for him to remain, providing his care plan was very carefully designed to ensure assessment and treatment of his core problems could proceed with appropriate supervision levels.

Observation – levels were established so that J. B.'s whereabouts were known at all times and direct observation was to continue off the unit.

Emergency psychiatric backup – was arranged from the local catchment area team. If J. B. attempted to leave the unit in an aroused state, then use of the Mental Health Act was to be considered.

Liaison – with J. B.'s own locality psychiatric services was started, including their learning disability and forensic teams. It was fully acknowledged that his stay in the unit could break down in circumstances requiring emergency psychiatric admission.

Management guidelines for aggressive behaviour – were drawn up immediately after risk assessment. It was recognised that J. B. always stood up at the beginning of his outbursts. He would sometimes leave looking tense, saying nothing and return in 10 min saying "Went for a coffee". The guidelines involved nurses at the start of a shift, and therapists at the start of a session, explaining this behaviour was allowed and was "better than shouting or hitting". If he stood up and looked as if he was about to explode, staff were to calmly use the same phrase, "Coffee, go for a coffee". A 24-hour record chart was used noting each time the guidelines were used. The charts incorporated the antecedents-behaviour-conclusions format that was well known to staff.

Individual Personal Planning approach – staff had had major difficulties in identifying with J. B. but felt they had much to offer with their expertise in head injury in clarifying his future care needs. Knowledge of his background helped but they felt hopeless about his future. However, they were receptive to philosophical approaches and structure afforded by the Individual Personal Planning approach commonly used in services for people with learning disabilities. This involved setting goals in the following areas (O'Brien, 1987):

- (a) Competence: a growing ability to perform useful and meaningful activities with whatever assistance is required.
- (b) Relationships: making and maintaining valued relationships.
- (c) Respect: not being treated as a second-class citizen.
- (d) Community presence: the right to spend time in the community.
- (e) Choice: being offered and able to make choices.

For example, J. B. decided he wanted some new training shoes. An accompanied trip was set up, which allowed assessment of his use of public transport, money handling, social interaction with shop staff and understanding his self-image. J. B. enjoyed playing pool, his programme involved going with a staff member to the hospital social club for a 5 p.m. session, provided the guidelines had only been used twice in one day. This approach was in contrast to the unit's usual framework arranging sessions overtly to assess and build skills.

Treatment of depression – involved prescription of paroxetine 20 mg daily and planned 45 min sessions. Each session would involve going through his previous week's activities using his personal timetable, concentrating on his 'feelings' at the different stages and trying to re-frame negative experiences. Opportunity would be taken to check his mental state before going through his planned timetable for the next week. The timetable involved words and symbols.

Family – regular telephone contact with his mother was established. Initially, J. B. and a staff member telephoned together at the same pre-arranged time each week. Staff involvement was withdrawn in a gradual, planned programme.

Sharing information – via sessions with key professionals involved in his care, after each appointment with J. B. Issues from these discussions could then be included in the next day's full team meeting.

Future care – J. B.'s purchasing authority and care manager were alerted to the complexity of his future needs. Arrangements were started immediately to arrange a case conference.

Progress two months post-admission

There were no further direct physical assaults. Episodes of verbal aggression and abuse decreased dramatically but no day was completely free of incidents. He was sleeping eight hours a night and had gained 3 kg. He used a microwave to cook simple meals and would initiate conversation, particularly discussing recent film releases. However, he still spent considerable time sitting alone smoking.

The feeling of wanting retribution against the owners of the car involved in his accident faded. He turned up promptly for sessions. Initially he was very tearful, discussing particularly being deserted by his girlfriend. The 'timetable' formed an increasing part of the sessions. Initially he

would recall past episodes of aggressive behaviour in a persecutory pedantic way. However, within a month of the initial assessment he would initiate discussion of the next week's timetable. As his depression lifted he became more motivated and tried to incorporate more rewards and trips outside into his weekly timetable. His trips were structured to allow steadily reduced supervision. For example, staff would not walk alongside him to a local shop but discreetly observe and meet him as planned in the shop.

His behaviour caused concern while outside the hospital. While on discrete observation, he crossed the road without looking. He had barged through crowds of people and was witnessed kicking an elderly lady queuing before him in a shop. He micturated in public areas without any apparent attempts at concealment.

His previous levels of supervision were then reinstated. He was initially angry because he understood that he could no longer go out of the unit. Further accompanied visits to the local supermarket proceeded uneventfully, the accompanying staff member noting meticulously the number and nature of prompts required to ensure a successful trip.

J. B.'s mother did not visit but he went on three successful escorted visits to her home. She began to initiate telephone calls to unit staff. On the last visit she asked him to spend Christmas Day with the family.

Future care

J. B. is three weeks away from his projected discharge date. Arranging a case conference has been difficult. His allocated care manager is from a physical disabilities team, while mental health services are purchased by a separate management structure.

The catchment area general and learning disability consultants recognised they could meet some of his needs but felt their teams had insufficient expertise in neuropsychiatric disorders and forensic issues. Learning disability teams were familiar with the pattern of affective disorder seen in people with established cognitive impairments, and with setting up long-term supportive care packages incorporating multiple agencies. However, J. B. was considerably more able than most of their patients. They had little expertise in the management of alcohol problems. General services had considerable difficulties offering services to people with borderline/mild learning disabilities; for example, the day hospital was run on psychotherapeutic principles. J. B.'s locality forensic

consultant needed considerable encouragement to assess the patient; however, after an initial consultation he remarked on the similarities between J. B. and many of his difficult-to-discharge patients. He was complimentary about progress made to date, establishing the level of security and supervision J. B. required to allow treatment, rehabilitation and maintenance of any gains made. J. B. not seeking alcohol during admission was deemed a positive factor. The forensic consultant has agreed to remain involved.

Contribution of a psychiatrist

Past history

Previous training may make psychiatrists more able to interview potentially violent people and to consider information from multiple sources. It is remarkable that J. B. had met a number of clinicians without recognition of his past contact with the criminal and penal systems, use of alcohol and drugs, and educational pattern. This is particularly surprising as head injuries happen more frequently to people like J. B. with pre-existing patterns of impulsive behaviour (including drug and alcohol abuse) and often violent lifestyles (Miller, 1989).

Pre-existing impulsive traits or behavioural difficulties often go unnoticed or unrecognised until after the head injury. Family and friends may overestimate the contribution of the head injury to the injured person's current behaviour.

Risk-taking

J. B.'s potential 'dangerousness' had not been acknowledged before psychiatric assessment. Risk management including care of the violent patient should not be the exclusive preserve of mental health workers.

Diagnosis of psychiatric disorder

There are major challenges with the classification, diagnosis and management of the neuropsychiatric disorders associated with head injuries (McAllister, 1992). Prigatano *et al* (1986) and Lishman (1987) provide models integrating neurological damage with pre- and post-head-injury factors. In contrast, Bond (1986) favours correlating emotional and behavioural problems with patterns of neurological damage independent of premorbid state.

J. B. provides an excellent example of the relevance of rigorously applying the biopsychosocial model. Why is this not so well established in other medical specialities? Head injuries happen to many people already at high risk of developing psychiatric disorders because of genetic, environmental and psychosocial factors (Miller, 1990). Psychiatrists cannot alone screen all head-injured people.

Treatment approaches to psychological disorders

Pharmacotherapy is undoubtedly the responsibility of medical staff. The clearest indication for choosing a particular medication is the presence of emotional reactions which are usually depression or anxiety (Glenn, 1987). Selective serotonin reuptake inhibitors have a favourable side-effect profile and theoretical links with aggressive behaviour (Volarka *et al*, 1992).

J. B. demonstrates well the need in frontal lobe disorders for a carer to take an active role in producing and maintaining any gains (Wood, 1987). Individual sessions, conducted in this case by a psychiatrist, reflected drawing together cognitive-behavioural approaches (e.g. group; Ruff *et al*, 1987) communication skills, training and counselling. Counselling (Robertson & Brown, 1992) and psychotherapy for people with cognitive and physical impairments is a developing area.

Families need repeated advice, support and sometimes specialist counselling (Kreutzer *et al*, 1990) that is sensitive to the socio-cultural, ethnic and educational aspects of family members, with acknowledgement of a long-term perspective (Hubert, 1995).

Service delivery

Planning J. B.'s care involved the psychiatrist taking a major role in coordination, liaison and staff support. The support included radically different philosophical and practical approaches to delivering care. Should the future of liaison psychiatry be a balance of strategic work and individual patient care?

As J. B. meets the suggested dimensions of severe mental illness (Department of Health, 1996), will care management and the Care Programme Approach, including guardianship, provide possible structures to coordinate his future? J. B. could benefit from the increasing acknowledgement in forensic practice of brain dysfunction (Martell, 1992) and the need to recognise interactive patterns between biological and psychosocial factors (Volarka *et al*, 1992).

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Multiple Choice Questions

- Services for people with severe head injuries include:
 - well-established networks of community services
 - statutory early allocation to a care coordinator
 - a framework for supporting families
 - using the Care Programme Approach
 - forensic psychiatrists.
- In the assessment of aggression in head injury:
 - mood disorders should be considered
 - multi-disciplinary risk-taking processes are of little value
 - pre-existing patterns of impulsive behaviour are rarely discovered
 - specific focal disorders require recognition
 - multi-dimensional formulation is essential.
- Head injury rehabilitation:
 - should only involve specialist centres
 - may require careful strategies for communication reintegration
 - has no synergies with learning disabilities service
 - involves the regular use of antidepressant medication
 - requires close attention to socio-cultural factors.

MCQ answers

1	2	3
a F	a T	a F
b F	b F	b T
c F	c F	c F
d T	d T	d F
e T	e T	e T