When people go into hospital they expect to get better but sometimes admission to hospital is associated with a deterioration in the general condition. This is what is meant by hospitalisation phenomena.

**Causes**

Patients may appear to deteriorate in hospital compared with how they were in the community for a number of reasons. There may be a number of causes:

- Adverse reaction to a drug, investigation or procedure.
- Hospital acquired infection, eg methicillin-resistant *Staphylococcus aureus* (MRSA).
- Psychological problems, eg delirium, loss of confidence, depression (the cause may be organic or nonorganic).
- Dependency - some patients may develop psychological dependency whilst an inpatient. This can relate to a number of factors such as loneliness and lack of self-esteem.

Those most at risk

- Elderly patients
- Admitting diagnosis - severity of illness and duration of hospital stay also probably play a part
- Co-morbidity, eg diabetes mellitus
- Multiple drugs/complicated regimens

The usual presentation is as an acute confusional state, also called delirium. This may be due to medications, dementia (possibly mild and formerly unrecognised), withdrawal of substances of dependence, eg drugs or alcohol or unsuspected physical illness. See also separate articles Acute Confusional State and Acute Alcohol Withdrawal and Delirium Tremens.

**Delirium developing during a hospital stay**

**Organic causes of delirium in hospital**

- When patients are admitted to hospital they are often immobilised.
- They may have been admitted because of trauma or a stroke or are confined by the monitors in a coronary care unit.
- This can lead to physical problems such as hypostatic pneumonia, deep vein thrombosis and pulmonary embolism.
- Other causes include hypoxia and bleeding after major abdominal surgery. \[1\]
- It is possible to anticipate who is at risk for postoperative delirium. \[2\] A study of low-dose preoperative haloperidol showed that it did not prevent the condition but was associated with a shorter duration and a shorter stay in hospital. \[3\]

**Drugs and delirium**

Whenever there are problems of confusion or aberrant behaviour, an examination of the drug sheet should be one of the first investigations.

- Medications are often changed or started when patients come into hospital and this may be responsible for problems.
- This applies not simply to psychotropic medication but drugs for conditions like Parkinson's disease may cause confusion.
- High doses of steroids can cause psychosis.
- The role of antibiotics in iatrogenic toxicity should not be underestimated. \[4\]
- Hospitals are noisy and unfamiliar places at night and night sedation may be offered, which may have adverse effects both at night and into the next day.
- The reliability of the administration of medication in hospital is often less than perfect but this imperfection is usually substantially better than fluctuations of the self-administered regime at home. However, it can mean that patients in hospital are receiving higher doses than at home and this may reach toxic levels.
- Failure to sleep may be due to pain, especially after an operation. This requires adequate analgesia. If sedation without analgesia is given, such as an hypnotic benzodiazepine, this can cause acute confusion.

**Unfamiliar surroundings and delirium**
An elderly person may appear to be coping well at home in the familiarity of a place where they have lived for many years but when they are transported to the unfamiliar environment of a hospital, unexpected confusion reigns. There may have been a degree of dementia present that had not been appreciated by anyone as the old person was able to accommodate in familiar surroundings but, when presented with something totally new, they are no longer able to do so.

**Delirium on the intensive care unit (ICU)**
- Confusion in an ICU may be difficult to recognise, especially if the patient is intubated.
- Delirium rating scales have been validated.[5]
- Acute confusional states (delirium) occur in 10-60% of older patients in hospital and in 60-80% of patients in ICU, but they are unrecognised by the staff in 32-66% of cases.
- Delirium is an important independent prognostic factor in outcomes, including duration of mechanical ventilation, nursing home placement, functional decline, and death.[6]
- Recently, new monitoring instruments have been validated for monitoring of delirium in noncommunicative patients receiving mechanical ventilation.
- Education of medical staff to recognise problems can reduce the incidence of acute confusion and it is hoped that THIS will reduce the associated mortality and morbidity.[7]

**Approach to a patient with delirium**
- Exclude organic causes and, if present, treat them.
- Talk to the patient. Be kind, be patient, be reassuring. This is not the time to attempt a mental state assessment for dementia.
- If the patient is distressing others, or being inconvenient for staff, there will be a call to give sedation. This lowers the level of consciousness and may well add to confusion so caution is needed.
- The most effective policy is early discharge as stability usually returns in the familiar surroundings. However, this may not be so, especially if there is a different reason for the admission. Furthermore, sending a confused person home too early is potentially very dangerous.
- If everything does settle down, the patient still needs to be assessed as there may be a degree of dementia. The confused patient must not be discharged from hospital in the expectation of spontaneous recovery at home without alerting primary care to the situation.

In terms of prevention, rehabilitation of the frail elderly at home rather than in hospital may have advantages.[8]

**Withdrawal syndromes leading to delirium in hospital**

**Delirium tremens**
The problems of excessive consumption of alcohol lie not simply in the effects of high intake but in the effects of sudden withdrawal. See the delirium tremens article for detail.

**Withdrawal of other substances**
Other substances of abuse may also lead to withdrawal syndromes on admission to hospital. Track marks from intravenous injections are an obvious pointer if seen but may be successfully hidden or the drug may be taken by a different route, eg inhalation of opiates, snorting of cocaine. Withdrawal from cigarettes may not produce a syndrome like withdrawal from opiates, alcohol or benzodiazepines but tobacco should probably be regarded as being as addictive as heroin.

**Conclusion**
- For those who work in hospitals it is easy to forget how frightening and disruptive it can be to become a patient.
- Illness can cause more than just the textbook symptoms and signs and this may be compounded by anxiety and sleep deprivation.
- The patient may feel loss of independence, loss of dignity and invasion of privacy.
- Talk to patients and keep them informed.
- Patients often feel disempowered so be considerate.
- The elderly person especially, may feel a loss of routine that can precipitate a crisis as adaption is limited well before overt features of dementia. Continuity of care is also important.

**Further reading & references**