HRCS ONLINE

UK CLINICAL RESEARCH COLLABORATION igniting our potential

Health Research Classification System

Common Mistakes

1. Allocating too many codes and unequal percentages

Advice:	Unless there are very specific indications otherwise, you should apportion the percentages equally and allocate the minimum number of codes (maximum of two Research Activity Codes and 5 Health Categories).

Remember: *there are simple rules to follow in order to enable the process to be repeated reliably by different coders*

2. Falling for an investigator's "sales pitch"

Advice:	Read the award abstract sceptically to find the main aim to be addressed during the lifetime of the award and ignore areas listed as 'being relevant' to the study. Often you can ignore the first paragraph about the past e.g. ▪ "X is implicated in disorders of Y" ▪ "X has been linked to Y". Similarly the last paragraph about the future can be a distraction: ▪ "it is hoped that X will also lead to novel therapeutic opportunities in Z" ▪ "X could subsequently inform the development of Z"

Remember: *the coding should be based on the main aim and the work to be undertaken during the lifetime of the award*

3. Assigning Health Categories to reflect all pathogenic components or symptoms

Advice: code for the main disease being studied and consult the specific inclusion/exclusion criteria listed on the website
Some example pitfalls are:

- Asthma involves a disordered immune response but it is classified in *Respiratory* not in *Inflammatory and Immune System*
- Dementias involve disorders of mental health functioning but they are classified in *Neurological* not in *Mental Health*
- BSE is believed to involve an infectious agent but it is classified in *Neurological* not *Infection*

Remember: *choose the Health Category associated with the purpose of the investigation or the overarching main disease*

4. Basing the choice of Health Category solely on the organs affected by the disease

Advice: code for the main disease being studied and consult the specific inclusion/exclusion criteria listed on the website
Some example pitfalls are:

- Studies of lung cancer are not classified as *Respiratory* but as *Cancer*
- Studies of respiratory tract infections are not classified in *Respiratory* but in *Infection*

Remember: *look at the definition of the Health Category and the specific inclusion/exclusion criteria listed on the website*

5. Using the "*Other*" category as a dumping ground when you are not sure how to classify a study

Advice: The *Other* category should be used **infrequently** and in very specific circumstances for certain areas which are difficult to classify (e.g Gulf War Syndrome, some studies of social services).

Remember: *If a study has wide relevance to many health areas (more than 5) then the Generic Health Relevance category is the one to consider assigning.*

6. Automatically putting all inherited disorders in the "*Congenital Disorders*" category

Advice: The *Congenital Disorders* category covers physical abnormalities and congenital syndromes that are associated with **multiple** diseases and conditions e.g. cystic fibrosis. It excludes single disease disorders even when referred to as "congenital" e.g. a study of "congenital heart defects" present at birth should be coded as *Cardiovascular*

Remember: *not all syndromes go in* Congenital Disorders

7. Avoiding the "*1 Underpinning*" code group if a study looks at pain, immune responses, pregnancy or ageing

Advice: The *1 Underpinning* code group is broad. In the original UK Health Research Analysis (2006) it accounted for more than 1/3 of all funding. It covers studies in biology, psychology, economics, social science and chemistry. It also covers all studies of normal function, including pain, immune responses, pregnancy and ageing.

Remember: *Pain, immune responses, pregnancy and ageing are considered to be normal.*

8. Using the "*3 Prevention*" code group for studies of the reoccurrence of a disease

Advice: A study can describe itself as **preventive** but it may be focused on preventing the **reoccurrence** of an existing condition (secondary prevention). This is considered to be an extension of therapy and will usually be classified in the *6 Treatment Evaluation* code group e.g. use of aspirin to prevent further adverse cardiovascular events or stroke in cardiovascular patients

Remember: *The 3 Prevention code group is about the primary prevention of disease in healthy people.*

9. Automatically putting trials into the "*6 Treatment Evaluation*" code group

Advice: The *6 Treatment Evaluation* code group covers all studies of therapeutic interventions in humans, often involving a clinical trial. But it does not include all trials in humans as there can be clinical trials testing the effects of preventive interventions, diagnostic devices and health services.

Remember: *The 6 Treatment Evaluation code group does not include all trials in humans.*

For further information see: http://www.hrcsonline.net/

10. Use of 1.1 versus 2.1 for biological and endogenous factors

Advice: Always remember the overarching code group criteria when coding studies of biological and endogenous factors:

Use *1 Underpinning* group codes for all types of research into 'normal' functions and processes in 'healthy' humans or systems, i.e. research that underpins investigations into the cause or development of diseases.

Use *2 Aetiology* group codes for the identification of determinants that are involved in the cause, risk or development of disease. Remember *2 Aetiology* in HRCS goes beyond the dictionary definition; it also encompasses disease progression and life course.

Then consider the specific criteria under the guidance for *1.1 Normal biological development and functioning* and *2.1 Biological and endogenous factors*. For example, studies in Cancer and Infection are rarely *1 Underpinning* (with some exceptions). Studies of basic immune responses, pain, wound healing and pregnancy not linked to disease/conditions should not be coded under *2 Aetiology* (see **Common Mistake 7**, above).

Finally, always consider the primary aim of coding is to capture the main objective of the research taking place during the lifetime of the award with the minimum number of codes. While some studies of biological/endogenous factors can cover both *1 Underpinning* and *2 Aetiology* activities, it is more likely that initial underpinning investigations will precede research into causation and development.

> e.g. Studies coded as *2.1* often involve comparisons to 'normal' functions and processes (i.e. as case:control comparisons). However such comparisons should not automatically require addition of *1.1* for the involvement of 'normal' comparators unless the research also encompasses establishing what 'normal' function can be as well.

Remember: *Always consider the code group criteria before assigning sub-codes, and the context of the research. Underpinning covers studies of normal function that underpins subsequent aetiological study.*

11. Using the treatments code groups (*5 Treatment Development* or *6 Treatment Evaluation*) for preventative interventions (*3 Prevention*)

Advice: Some behaviours or conditions, such as smoking, obesity, alcohol consumption and drug misuse are considered a risk factor for other diseases. Therefore, interventions to reduce consumption or promote healthier behaviours should be coded as *3 Prevention*, even if the target individual or group is already smoking, obese etc..

Studies should be coded to *5 Treatment Development* or *6 Treatment Evaluation* when the focus is treatment of an newly manifested or existing behaviour-related diseases – such as lung cancer for smokers, heart disease for the obese or alcohol/drug addiction.

5 Treatment Development or *6 Treatment Evaluation* can also be used in cases of secondary prevention. See **Common Mistake 8** (above), and additional guidance on differentiating secondary and primary prevention is also available.

Remember: *Consider the context of the study and what the 'disease' being treated is. Risk behaviours prior to disease should be coded to* 3 Prevention*, while treatments for risk-related diseases should be coded* 5 Treatment Development *or* 6 Treatment Evaluation*..*

12. Inappropriate use of 4.1 and 4.2 in *4 Detection* code group

Advice: Use *4.1 Marker discovery* for pre-clinical investigation of potential diagnostics, which can include patient samples if they are being used in the diagnostic development phase. Use *4.2 Marker evaluation* for clinical and applied testing in humans, once verified in the laboratory, often in a trial or studies that involve a group of people.

The term 'biomarker' can cause confusion when applying HRCS coding. In general a 'biomarker' refers to a specific molecule, gene or characteristic from which a physiological process can be identified. Use codes within *2 Aetiology* for studies where markers are first identified (e.g. in epidemiology studies) or further assessed to determine how the molecule/gene/etc. contribute to the cause, risk or development of diseases. These studies will generally precede research to assess whether the biomarker can be then be used in a diagnostic setting.

Remember: *Use 4.1 for pre-clinical studies and 4.2 for clinical/applied studies. Not all 'biomarker' research is coded in* 4 Detection*; preliminary identification and physiological assessment will typically be coded to* 2 Aetiology*.*