

## Activity analysis (time and motion study)

Establishing the cost of a service does in part rely on accurate activity data, so robust and repeatable collection of this data is crucial. Many departments or services will have a methodology in place to undertake an activity analysis or time and motion study but included in this document are example forms and analysis charts which can be used by staff.

Prompt and empathetic communication of the reason for undertaking time and motion studies is necessary with all staff who are to be involved. Time and motion analysis is not a performance management tool and staff must be reassured of this as well as the need for robust data and data collection. Engaging staff early in the process should alleviate concerns and may even result in staff championing the process.

A data collection form should be designed that clearly and accurately records the data needed for analysis (an example is included below). Take time to clarify the data collection sets with staff and remove ambiguity through discussion and clear labelling of categories.

Activity list									
	Patient care:								
Direct Patient Care	• single								
	double								
	triple								
	• class								
	Patient administration support								
Indirect Care	Handover/ liaison								
	Patient related meeting								
	Equipment preparation								
	Non-clinical meetings								
Non-Clinical	Teaching/CPD								
	Non patient administration								
	Travel								



Data collection should ideally be for a two-week period during a predictable or normal period of activity.

### Analysis of activity

Once the data collection period is over and the data inputted to the relevant IT resource, a detailed analysis can begin. Exactly how activity is analysed will depend on the service that has been reviewed. Access to previous time and motion data will allow a comparison over time, but stand-alone data is also useful perhaps for comparing teams or bandings. See example graphs below.

The next important step is to work out the available clinical minutes from the data collected. This will need to be done for each grade of staff but this is the key data needed for the costing calculation.



Diagram D: Flowchart to support activity analysis methodology

1. Communicate with all staff affected by the study

2. Identify a two week study period, preferably during predictable or stable activity

3. Confirm data collection sets (activities) and units of time to be used (10 minutes)

4. Collect data for two week study period

5. Ensure time allocated within study to input data for processing

6. Analyse results and compile analysis based on the service reviewed

7. Arrange data in graphics to evidence activity and demonstrate change (see Figures 1, 2 and 3)

8. Use detailed results to establish available clinical minutes needed for costing calculation



The raw activity data can be inputted to simple statistical computer programs to demonstrate activity results. This could be used to demonstrate activity by band, face to face activity by teams, or activity against previous data. Example graphs are shown below:



#### Figure 1: Face to face activity by band

#### Figure 2: Patient care by team





# Figure 3: Sample time and motion data collection sheet

Jobtitle																	Date															
	1620	5	620	620	2	50	1841	<b>1</b> 20	621	1241	<b>1</b> 844	1851	1241	19	120	1221	1941	1950			12	 Ĩ	115	13	1:1	121	12	1134	Ē	1861	1.51	1231
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Pt contact double																																
Pt contact triple+																																
Pt class																													$\square$			
Pt related admin																																
Handover / faison																																
Pt related meeting																																
Non-cinical meetings (inc. appraisal etc.)																																
Teaching / CPD																																
Non-patient admin																																
Equipment prep etc.																																
Travel (walking)																																
Other																																
Off duty (inc. lunch)																																
Comments																																
	1221	161	1254			130	131	134	1154	1941	14:11	151	151	144	1454	15dt	18th	121	1541	ISA	15.54	1611	1621	1631	1630	1651	1200	12.0	2	122	124	1754
Pt contact single																																
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