

## Appendix 1 (as supplied by the authors): The three schedules evaluated.

The 3 schedules are graphically represented over a representative 8-day period. The darker boxes indicate overnight duty periods. In each ICU both the staff and fellows were present for sign-over in the mornings (~8:00-8:30) and afternoons (~16:30-17:30). The staff would not typically be present but the fellow would sometimes be present during evening sign-over (20:30-21:00) for the 12 hour on call schedule.

Transitions of patient care between resident physicians are described in the lower portion of each schedule. Full transitions (triangles) where the physicians assuming responsibility have newly arrived in the ICU, and the physicians from whom they are receiving handover are leaving. Graduated transitions occur when the resident receiving handover has been in the ICU for a previous handover and may have already heard about the patient in that previous handover (line preceding triangle). Thus during weekdays in the 24-hour duty schedule there are one full and one graduated handover, in the 16-hour schedule there are two full handovers, and in the 12-hour schedule there are 2 full and one graduated handover. At weekends there is one full handover in the 24-hour schedule, and 2 full handovers in both the 16-hour and 12-hour schedules.

In both hospitals patient handover involved the residents, fellows and staff physicians discussing all the patients listed by bed number. This took about 1/2 hour and occurred in the morning and afternoon for all three schedules. For the 16-hour schedule the additional handover began at 8:30pm, with patient list being discussed by the “long day” day resident, the incoming overnight resident, and frequently the “home call” fellow if s/he were in the hospital at the time.

In the representative week (Monday 8am – Monday 8am) the mean number of hours worked per week was 59.4 hours in the 24-hour schedule, 53.2 hours in the 16-hour schedule and 52.4 in the 12-hour schedule. In the 24- and 16-hour schedules, each resident worked at 1 or 2 overnight duty periods, and a mean of 59.4 hours, whereas in the 12-hour schedule 2 residents worked overnight duty each week.

