Gross DP, Battie MC, Asante AK. Evaluation of a Short-form Functional Capacity Evaluation [FCE]: Less may be Best. J Occup Rehabil 2007;17:422-435.

Design: Randomized clinical trial

Population/sample size/setting:

- 372 claimants (69% men, mean age 44) with back pain (n=72), upper extremity pain (n=180), lower extremity pain (n=75), and other (facial fracture, hernia, n=45) evaluated at the Workers' Compensation Board of Alberta in 2004 and 2005
- Claimants with brain injury or occupational disease such as asbestosis were excluded

Main outcome measures:

- All claimants underwent either a short-form FCE (n=173) or a standard FCE (n=199)
- All claimants also completed the Pain Disability Index, a pain Visual Analog Scale, and the SF-36
- Claimants were assigned to be evaluated by 23 clinicians (10 occupational therapists, 7 physical therapists, and 7 exercise therapists)
- Randomization was done by clinician, not by claimant; 11 clinicians were randomized to perform a short-form FCE and 12 were randomized to perform a standard FCE
- Standard FCE consisted of a two-day Isernhagen Work Systems FCE protocol
- Short FCE items were selected from the standard Isernhagen protocol and the Ruan functional assessment screening test, but with fewer items which were specific to the region of the body for which the claimant was being tested
    - For the trunk, short FCE had 15 minute stand, floor to waist lift, 1 minute crouch, 2 minute sustained trunk flexion, and 5 min repetitive trunk rotation
    - For the upper extremity the short FCE had waist-to-overhead lift, sustained elevated work, crawling, hand grip strength, and hand coordination
    - For the lower extremity, the short FCE had 15 minute standing, floor-to-waist lift, 1 minute crouch, 2 minute kneel, and stepladder or stairs
- All items were assessed over tow consecutive days
- Clinicians considered the maximum performance on the FCE items, along with information from claimant self-report measures
- Effectiveness of FCE was evaluated by the FCE ability to predict time to claim closure, days to suspension of time-loss benefits, and rates of recurrence following claim closure; these outcomes were taken from administrative Workers' Compensation data sources
    - Recurrence was defined as re-opening of closed claim, filing of a new claim, or resumption of time-loss benefits within the year after the FCE
- The short and the standard FCE were equivalent in prediction of recurrence

    - Median duration of time-loss benefits after FCE was 28 days; median claim duration was 55 days, and overall recurrence rate was 19%
    - The equal success of the short and standard FCE was adjusted for potential confounders, such as age, sex, employment status, duration if injury, salary, and perceived pain or disability; the results did not change as a result of these adjustments
- Claimants expressed equal satisfaction with the process for both the short and the standard FCE
- Clinicians administering the short form FCE reported less time to do both the physical examination (45 vs. 72 minutes) and the functional assessment (102 vs. 179 minutes); however, data for time required was available for only 25% of the claimant FCE evaluations (for 62 short FCEs and for 30 standard FCEs)

Authors' conclusions:

- Short form FCE is as effective as standard FCE for WC administrative outcomes, but the short form reduces time to completion
- Return to work is a multidimensional human behavior; physical capacity for work tasks is one dimension of this behavior
- These conclusions apply only to clinicians who were already trained and experienced with the FCE; it is not known whether less experienced clinicians would have equal success with the short FCE

Comments:

- Although the trial allowed two days for the short FCE, the form is designed to be completed with one day of testing
- The randomization was done by clinician, and the number of claimants assigned to the individual clinicians was not specified; however, the analysis did account for clustering effects, and the results are not likely to be compromised by differences in case load per clinician
- Criteria for referral to FCE in Alberta may vary from those in Colorado; most claimants appear to have had multiple previous WC claims, and appear to have had more than one year from their current claim before having the FCE, even though the majority of both FCE groups were employed at the time of having their FCE
- Table 2 reports data for "experienced recurrent event" with a value of 31 for short FCE and 27 for long FCE, but the meaning of this is not clear
    - For most of Table 2, the values are given in percentages, not numbers
    - The text reports that the overall recurrence rate was 19%; this conflicts with the interpretation of Table 2 that assumes that percentages are being reported
    - However, interpreting the values of 31 and 27 is also in conflict with the reported recurrence rate of 19%, since the sum of 58 recurrences is only 15.6% of 372
- However, the study as a whole appears to have taken satisfactory measures to control bias, and the differences in performance between the short and standard FCE is not likely to be large

Assessment: Adequate for some evidence that a short FCE may be equally effective as a long FCE in predicting length of disability and recurrence of a claim after return to work