

Original Research Article

Retrospective analysis of disability evaluation and work fitness reports issued in occupational therapy training school and centre, Mumbai, Maharashtra, India

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ABSTRACT

Background: Patients from medicine, neurology and neurosurgery are referred to occupational therapy for disability calculation and if applicable work fitness. The patients who were referred from other units are not analysed here. Objectives of this study were to find the total number of patients referred for disability evaluation and certification from neuro-medicine and neuro-surgery units. To find the number of patients referred according to the different diagnosis. To find the patient distribution according to the percentage of disability. To find number of patients who were given work fitness (unfit, fit, light duty).

Methods: Retrospective analysis of hospital records, disability evaluation reports and work fitness reports (wherever applicable from 1st January 2018 to 31st December 2019). Evaluation of disability is done as per guidelines of Government Gazette, June 2001 and report is given. Final certification is given by the respective referring unit. If applicable these patients are also analysed for work fitness.

Results: Among 84 patients were given disability certificate in 2018 whereas 79 patients in 2019. In 2018, out of 84 patients, 1 received disability <40%, 64 got disability between 40-70% and 19 got disability >70%. In 2019, out of 79 patients, 2 got disability <40%, 58 got disability between 40-70% and 19 got disability >70%. In 2018, out of 84 patients, 33 patients were referred for work fitness in which 27 got unfit, 1 patient was given fit and 5 got light duty after work simulation. In 2019, out of 79 patients, 21 were referred for work fitness in which 18 were given unfit, 1 patient was given fit and 2 got light duty after work simulation.

Conclusions: The patients were analysed based on age, gender, type of diseases, percentage of disability, type of work and work fitness (fit, unfit, light duty).

Keywords: Disability, Occupation, Work fitness

INTRODUCTION

Disability is any restriction for lack resulting from and impairment of the ability to perform an activity in the manner within the range considered normal for humans.

Conceptualizing disability- the significance of disability is felt at an individual, organizational and societal level.¹

The American Occupational Therapy Association in its uniform terminology defines work or job performance as “performing job tasks in a timely and effective manner, incorporating necessary work behaviors”.²

Fitness for work is defined as the determination of whether an individual is fit to perform his or her tasks without risk to self or others.³

Return-to-work is classified as a major component of the participation domain in the International Classification of Functioning, Disability and Health (ICF), developed by the World Health Organization (WHO, 2001).⁴

Occupational therapist as an expert combine knowledge of impairment and disability with expertise in job analysis, ergonomics and functional evaluation to provide customized return-to-work programs that meet the needs of employers, insurance companies and workers. They are skilled in assisting clients with physical, cognitive/neurological and mental health conditions.⁵

Many models and classification system have come up to conceptualize and classify disability.

The model presented by the community on a National agenda for prevention of disabilities (CNAPD), built on the previous work of WHO and Nagi (Pope and Tarlov, 1991). In this model, disability is defined as the gap between a person's capabilities and the demands of their environment (Pope and Tarlov, 1991).

Disability evaluation based on Guidelines and Gazette Notification (Committee under the chairmanship of DGHS, GOI) issued by Ministry of Social justice and Empowerment GOI, June 2001.

In order to review the guidelines for evaluation of various disabilities and procedures for certification as given in the Ministry of Welfare's O. M. dated 6th August 1986 and to recommend appropriate modifications/alterations keeping in view the Persons with disabilities (equal opportunities protection of rights and full participation) Act 1995, Government of India in Ministry of Social Justice and Empowerment, set up four committees under the chairmanships of Director General of Health Services -one each in the area of mental retardation, locomotor /orthopedic, visual disability and speech and hearing disability.

The Universal Guidelines for assessment and certification of the following disabilities were finalized by a group of experts and were notified by the Ministry of Social justice and empowerment, GOI in June 2001.

- Visual impairment
- Locomotor disability
- Speech and hearing
- Mental retardation
- Multiple disabilities.

The 40% disability has been taken as cut off to avail various facilities and concessions earmarked by the government.

At present disability evaluation in India is needed to award compensation, stipends, employment conveyance allowance, travel concessions, tax deduction, admission to various courses etc. to the disabled.

The validity of the certificate - the certificate would be valid for 5 years in case of temporary disability and permanent disability certificate once issued is permanent and lifelong.

Total percentage of physical impairment should not exceed 100%.⁶

METHODS

This is a retrospective analysis of disability evaluation reports and work fitness reports issued to patients from occupational therapy department from 1st January 2018 to 31st December 2019 was done. Convenient sampling was done for all the patients.

Study conducted from 1st January 2018 to 31st December 2019. Patients referred from neuromedicine and neurosurgery units for disability evaluation.

Inclusion criteria

- Patients referred for disability evaluation with or without work fitness from neuromedicine and neurosurgery units
- Patients of age group 18 years and above
- Both male and female were included.

Exclusion criteria

- Patients primarily referred for disability from general surgery, orthopedics, plastic surgery, pediatrics and psychiatry units.

Every year patients from medicine, neurology and neurosurgery OPDs are referred for disability assessment to the occupational therapy department. They are assessed using the Guidelines of Government Gazette. The report regarding disability evaluation is given and the final certification is given by the medicine or neurosurgery unit. (The patients are also referred from general surgery, orthopaedics, plastic surgery, paediatrics, psychiatry units. They are not analysed here).

If the same patient is referred for work fitness then activities of work simulation are given to the patient and his ability to perform those activities is judged. Also, factors like travelling from home to workplace, mode of transport are considered. At the end of this analysis if it is found out that the person secondary to disability cannot fulfil the job requirements satisfactorily then the certificate of 'unfit' is given to him. If it is felt that the person is now fit for any other 'light duty' job and is permitted to work on that then certificate of 'light duty' is given and thirdly if it is found that the person can fulfil job requirements satisfactorily then a certificate of 'fit to resume job' is given to the person.

Guidelines for assessment of physical impairment in Neurological conditions

1. Assessment in neurological conditions is not the assessment of disease but is the assessment of the effects, i.e., clinical manifestations.
2. Any neurological assessment has to be done after six months of onset.
3. These guidelines will only be used for central and upper motor neurone lesions.

Subjects are evaluated for:

- Altered sensorium
- Intellectual Disability
- Speech defect
- Cranial nerve disability
- Sensory system disability
- Bowel/Bladder Involvement
- Post head injury fits and epileptics
- Ataxia (sensory or cerebellar)
- Motor system disability:

Following is the calculation of disability for people who have suffered a stroke or other causes of neurological disability according to direct neurological assessment.

- Monoparesis = 25%
- Monoplegia or hemiparesis = 50%,
- Paraparesis = 75%,
- Paraplegia = 100%,
- Hemiplegia or quadripareisis = 75%
- Quadriplegia = 100%

Proforma A (coordinated activities) and B (stability component) will be utilized for assessment of lower motor neurone lesions, muscular disorders and other locomotor conditions.

Additional weightage of 4% is given for dominant upper extremity.

Additional 10% can be given for loss of sensation in each extremity.

The total percentage of disability is calculated using the combining formula,

$$\frac{A + B(90 - A)}{90}$$

Where,

A= will be a higher score and
B= will be a lower score

However, the maximum total percentage of disability shall not exceed 100%.

Depending on the diagnosis of the patients referred for disabilities, the percentage of disability calculation is done:

- According to direct neurological assessment
- According to coordinated activities and stability components.

Statistical analysis

Statistical analysis was done to find total number of patients for disability certificate, age-wise distribution of patients, total percentage of patients according to age, ratio of male and female, reference wise distribution of patients, different diagnosis of patients, patients evaluated according to assessments, patient distribution according to percentage of disability, work fitness and occupations.

RESULTS

There was a total of 84 patients who were given disability certificates in the year 2018 and 79 patients in the year 2019 (Table 1).

Table 1: The total number of patients in years.

Years	Total number of patients for disability certificates
2018	84
2019	79

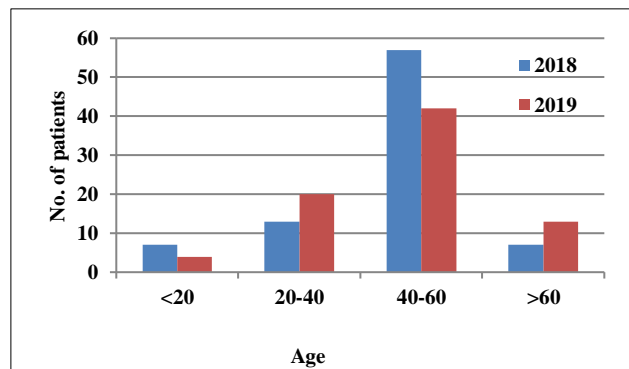


Figure 1: The age-wise distribution of patients.

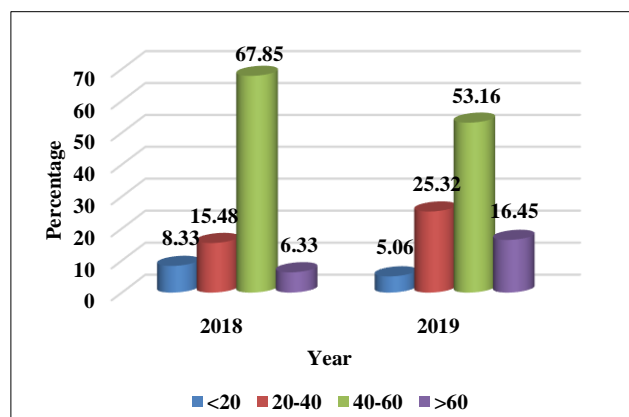


Figure 2: The total percentage of patients for the year 2018 and 2019.

Out of which total patients below the age of 20 years in the year 2018 were 7 and in the year 2019 were 4. Total patients in the age group 20 to 40 years were 13 in the year 2018 and 20 in the year 2019. Total patients in the age group 41 to 60 years were 57 in the year 2018 and 42 in the year 2019. Similarly, total patients in the age group more than 60 years were 7 in the year 2018 and 13 in the year 2019 (Figure 1).

Figure 2 shows that total percentage of patients below the age of 20 years is 8.33%, from 20 to 40 years is 15.48%, from 41 to 60 years is 67.85% and more than 60 years is 8.33% in the year 2018 (Figure 2).

The total percentage of patients below the age of 20 years is 5.06%, from 20 to 40 years is 25.32%, from 41 to 60 years is 53.16% and more than 60 years is 16.45% in the year 2019 (Figure 2).

Table 2: Gender wise distribution of patients.

Year	Gender	
	Male	Female
2018	66	18
2019	69	10

As seen in Table 2, the ratio of male to female in the year 2018 was 3.7:1 and 6.9:1 in the year 2019 (Table 2).

Table 3: Reference wise distribution of patients.

Year	References	
	Neuromedicine	Neurosurgery
2018	70	14
2019	69	10

According to Table 3, the number of patients referred from neuromedicine is 70 and from neurosurgery are 14 in the year 2018 and the year 2019, neuro medicine patients are 69 and neurosurgery patients are 10 (Table 3).

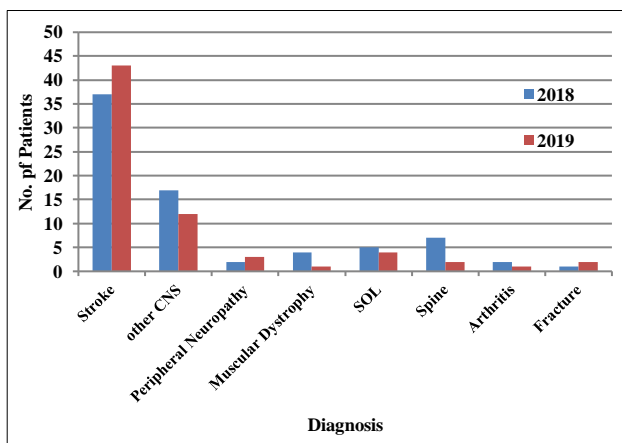


Figure 3: The diagnosis of wise distribution of patients.

According to the diagnosis, in the year 2018 there were 37 patients with stroke, 17 patients with other CNS disorders, 2 with peripheral neuropathy, 4 with muscular dystrophy, 5 with SOL, 7 with spine disease, 2 with arthritis and 1 with a fracture (Figure 3).

Similarly, in the year 2019, there were 43 patients with stroke, 12 patients with other CNS disorders, 3 with peripheral neuropathy, 1 with muscular dystrophy, 4 with SOL, 2 with spine disease, 1 with arthritis and 2 with a fracture (Figure 3).

The patients were calculated using the following criteria for disability evaluation:

- According to direct neurological assessment
- According to coordinated activities and stability components

Table 4 shows that in the year 2018 out of 84 patients referred for disability evaluation 51 patients were calculated using direct neurological assessment and 33 patients were calculated using coordinated activities and stability components.

Table 4: Patients evaluated according to assessments.

Year	Assessments	
	Direct neurological assessment	Coordinated activities and stability components
2018	51	33
2019	44	35

Table 4 shows that in the year 2019 out of 84 patients referred for disability evaluation 44 patients were calculated using direct neurological assessment and 35 patients were calculated using coordinated activities and stability components (Table 4).

Table 5: Patient distribution according to the percentage of disability.

Year	Percentage of disability		
	<40%	40-70%	>70%
2018	1	64	19
2019	2	58	19

The Table 5 shows the analysis of the percentage of disability of the referred patients. In the year 2018, out of 84 patients referred 1 patient got disability less than 40%, 64 patients got disability in the range of 40 to 70% and 19 patients got disability in the range of more than 70% (Table 5).

In the year 2019, out of 79 patients referred 2 patient got disability less than 40%, 58 patients got disability in the range of 40 to 70% and 19 patients got disability in the range of more than 70% (Table 5). In 2018, out of above patients referred for disability total 33 patients were

referred for work fitness, out of which 27 were given unfit, 1 was given the fit and 5 were given light duty after work simulation (Figure 4).

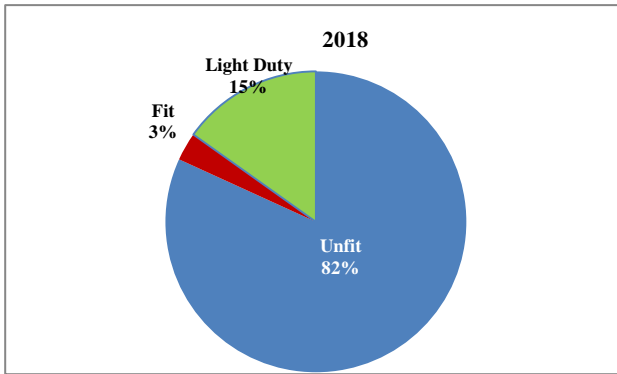


Figure 4: The distribution of patients based on work fitness 2018.

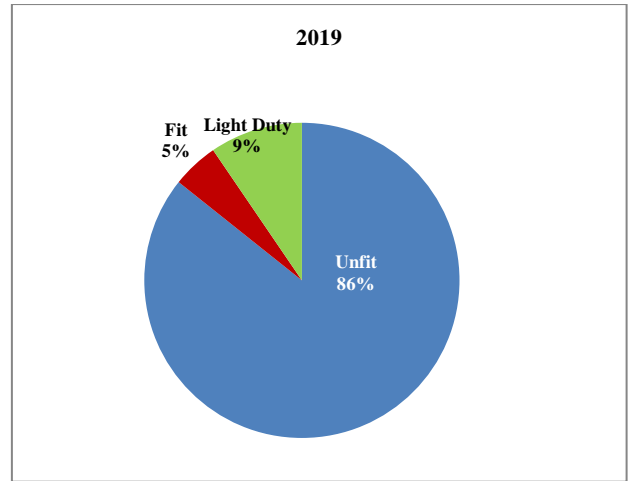


Figure 5: The distribution of patients based on work fitness 2019.

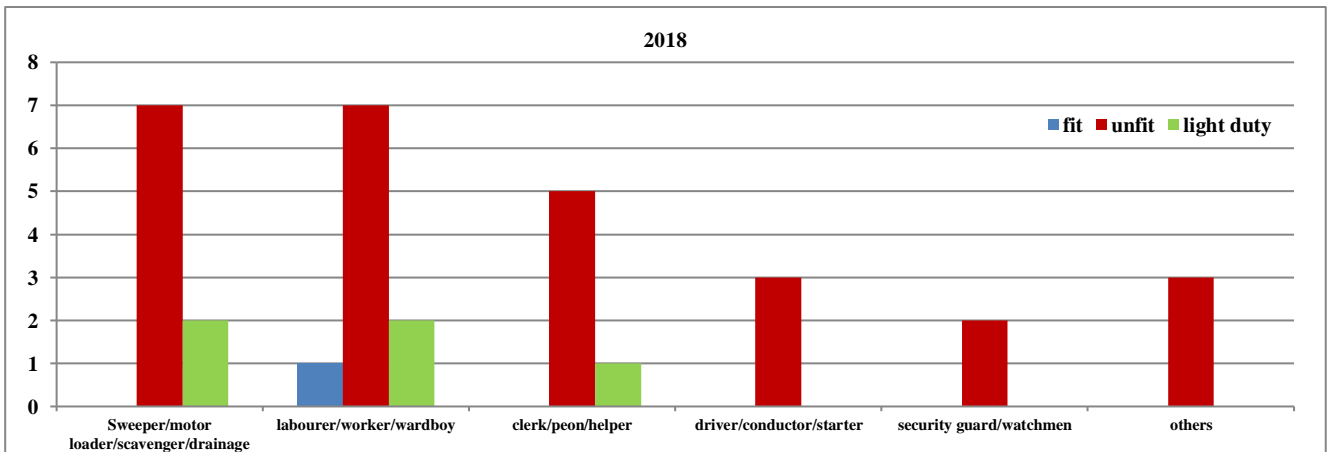


Figure 6: Patient distribution according to occupations 2018.

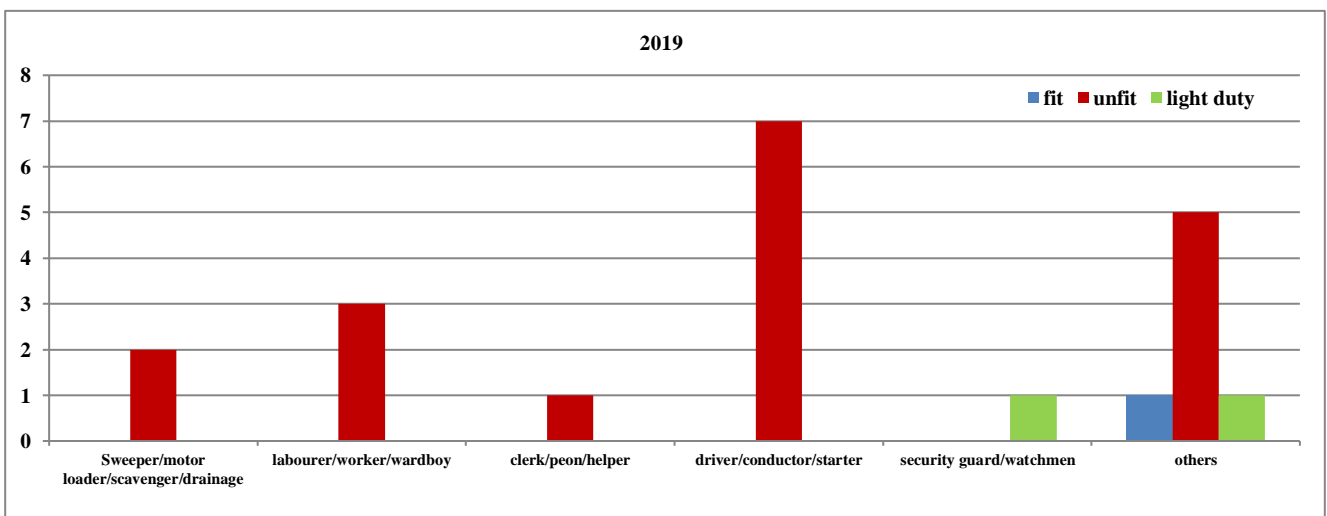


Figure 7: Patient distribution according to occupations 2019.

In the year 2019, out of patients referred for disability total 21 were referred for work fitness, out of which 18 were given unfit, 1 was given the fit and 2 were given light duty after work simulation (Figure 5).

While evaluating the patients for work fitness in OT department, various points that are considered are the physical capacity to sustain work, bilateral hand coordination to perform the task, standing balance and propulsion as the demand of the job, distance from residence to the workplace, mode of transport and accessibility to it. Once the analysis is done, the patient is given a certificate either as fit to resume, fit for light-duty or unfit.

As seen in Figure 6 and Figure 7, by enlarging the occupations of patients were sweeper/ cleaner/ motor loader, laborer, clerk/peon, driver/conductor, security guard/watchman and others (cook, gardener, mukadam, bank staff). The occupations which require good standing tolerance and balance and bilateral hand coordination are less likely to get fitness after neurological ailment.

DISCUSSION

Patients secondary to neurological diseases are referred for disability evaluation calculation to the occupational therapy department. Most of the time the purpose of procuring this disability evaluation is to avail concession while travelling especially through public transport (railways and buses). The second most common reason is compensation/stipends then tax-deduction and so forth.

In this study, according to Figure 3, total percentage of patients below the age of 20 years is 8.33% and from 41 to 60 years is 67.85% in the year 2018. Also, the total percentage of patients below the age of 20 years is 5.06% and from 41 to 60 years is 53.16% in the year 2019 (Figure 2).

Similarly, in a study on retrospective analysis of work fitness in municipal employees by Jyotsna Gaikwad, Shailaja Jaywant and Anuradha Pai, it is seen that number of employees in lower age group was less than in the higher age group and the employees of lower age group could perform the work and return to work earlier than older age group.⁷

It may be because older workers differ from their younger counterparts in a variety of physical/biological, psychological/mental and social dimensions. This is stated in the chapter on physical and cognitive differences between older and younger workers by David. It also states in some case, these reflect normative changes of aging, in others they represent age-dependent increases in likelihood of developing various abnormal conditions (e.g. coronary artery disease).

In some cases, these age-related differences are disadvantageous to older workers because their work

performance is diminished relative to that of younger workers.⁸

Amongst the patients who were referred from medicine, neuromedicine and neurosurgery OPDs almost 40% patients are secondary to stroke, and the rest others CNS disorders like TBM, head injury, multiple sclerosis, Parkinson's disease, CP, seizure disorder, peripheral neuropathies, muscular dystrophy, SOL of brain and spinal cord, MMC etc.

Depending upon the diagnosis and clinical manifestation, the patient's permanent disability is calculated by either,

- According to the direct neurological calculation or
- According to coordinated activities and stability components.

Out of these patients who were referred for disability secondary to neurological diseases approximately 30 to 40% (to be precise 39.2% in the year 2018 and 26.58% in the year 2019) of patients are referred for work fitness.

While evaluating the patients for work fitness in OT department, various points that are considered are the physical capacity to sustain work, bilateral hand coordination to perform the task, standing balance and propulsion as the demand of the job, distance from residence to the workplace, mode of transport and accessibility to it. Once the analysis is done, the patient is given a certificate either as fit to resume, fit for light-duty or unfit.

In an article on neurological conditions: assessing medical fitness to drive, author Yale SH et al, from June 2003, clinical research, where they analysed what are the different methods for assessing driving skills in cognitively impaired patient, his medical qualifications for driving license recommendations. Patients reporting duties and responsibilities were also analysed.⁹

In another article on opportunities and barriers for a successful return to work after acquired brain injury- a patient perspective by Marie Materne, they analysed 5 males and 5 females after TBI and concluded that vocational rehabilitation process is balancing act in individualized planning and support as a partnership with employer needs to be developed, motivation needs to be generated and awareness built of abilities is that facilitate or hinder RTW (return to work).¹⁰

Also a study by Green et al on prediction of return to productivity after severe traumatic brain injury: Investigations of optimal neuropsychological tests and timing of assessment states that the return to work not only aims towards economic security and financial independence but also promotes social integration, boosts self-reliance and self-esteem, enhances life satisfaction, quality of life and psychological adjustment, and reduces probability of emotional problems.¹¹

CONCLUSION

It is very difficult to establish a relationship between the percentage of disability and fitness to the job. As these are two entities, a patient who is wheelchair-bound secondary to paraplegia and maybe get disability percentage of 75% can be fit for a job of clerk in an institute which is accessible to a wheelchair but on the other hand, a patient with monoplegia with a disability of 40-50% who works as a cook/gardener/peon which requires bilateral hand coordination can be unfit to resume his job.

So as an occupational therapist, a meticulous and systematic evaluation for disability calculation and work simulation and ability of the person to fulfil the job demands is the key to scientific and authentic work fitness certification.

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Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

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