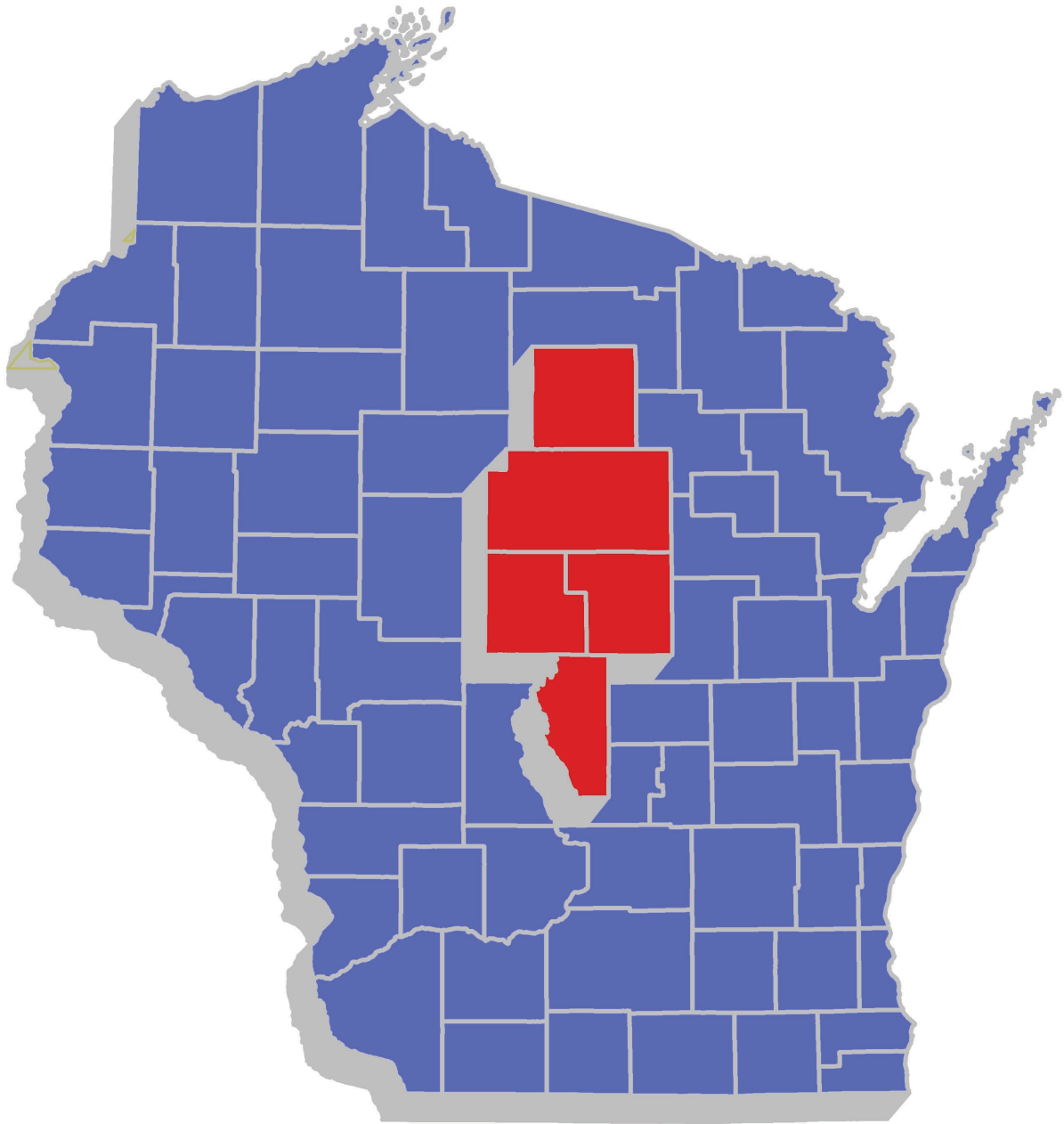


Centergy Economic Development Region

Estimated Occupational Demand and Healthcare Industry Employment
From Wisconsin's Department of Workforce Development
As Prepared by the Office of Economic Advisors



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Regional labor markets are almost always characterized using profiles of industry employment. However, such canvases could be argued to paint incomplete pictures of regional labor markets as they leave out a critical component: the occupational composition of the regional workforce. A trained and skilled workforce aligned with industry labor demand gives resident industries a solid footing from which to enjoy growth. This analysis seeks to address the linkage between healthcare industry employment and corresponding regional occupation demand within the Centergy labor shed. The industry to occupation linkage is explored through three basic components. The first is a depiction of the healthcare industry sub-sector employment concentrations in Centergy labor shed. The second is a discussion of an estimated occupational staffing pattern for the region. The third component is a synthesis and discussion of the data.

I. Healthcare Industry Employment Clusters in the Centergy Region

As a first step to identifying an estimated occupational demand for the Centergy region, it is necessary to have perspective on the role healthcare industry employment plays in the Centergy and disaggregate county labor markets. Industries that comprise a high share of regional employment will have a greater proportionate influence on occupational demand in local labor markets. Industries that are found in high regional concentrations represent statewide concentrations and will generally impact and be impacted by statewide labor markets for those occupational skill sets. Understanding the magnitude and relative concentration of regional healthcare industry employment dynamics is important to understand the occupational labor demand of those industries.

Industry organization for healthcare employment has been assembled using a North American Industry Coding System (NAICS) structure. High level healthcare employment is captured by employment totals corresponding to the healthcare and social assistance sector (sector 62). Healthcare and social assistance employment is in turn the sum of employment in four industry sub-sectors. These sectors are ambulatory health care services (sub-sector 621), hospitals (sub-sector 622), nursing – residential care facilities (sub-sector 623) and social assistance (sub-sector 624). Ambulatory health care services refer to outpatient services. Hospitals refer to both inpatient and specialized accommodation services. Nursing and residential care facilities refer to residential care combined with nursing and supervisory care. Social services refer to a wide array of services provided but are not inclusive of residential or accommodative services. As the purpose of this brief is to focus on healthcare services sector employment, social services employment totals have not been included.

On the following page in table 1, relevant industry employment totals for the state, the Centergy region and counties within the Centergy region are displayed. The employment values correspond to

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2010 average quarterly employment and were obtained from the U.S. Census Quarterly Workforce Indicators (QWI) hosted by Cornell University on the VirtualRDC. To be clear, starred hospitals employment values are not official estimates but were inductively estimated from source data by the Office of Economic Advisors.

The top table contains counts of employment for total, sector and sub-sectors. The bottom tables A and B contain the proportionate share of total, all jobs and then total healthcare and social services sector employment that a sector or sub-sector comprises. For example, Wood County's hospitals employment accounts for approximately 7.6 percent of total county employment (A) and 25.3 percent of healthcare and social assistance employment (B) respectively.

Table 1, Employment by Industry

	<u>Employment</u>				
	Total, all industry	Healthcare and Social Assistance	Ambulatory Health Care Services	Hospitals	Nursing and Residential Care Facilities
Wisconsin	2,595,406	368,182	107,880	115,928	82,548
Adams County	3,318	377	35	118*	131
Lincoln County	10,017	882	199	280*	324
Marathon County	62,591	8,971	2,660	4,283	1,136
Portage County	30,512	3,093	1,094	845*	528
Wood County	41,588	12,544	7,483	3,173*	1,289
Centergy	148,025	25,865	11,470	8,699	3,407

A.

Percent of Total Employment

	Total, all industry	Healthcare and Social Assistance	Ambulatory Health Care Services	Hospitals	Nursing and Residential Care Facilities
Wisconsin	100%	14.2%	4.2%	4.5%	3.2%
Adams County	100%	11.3%	1.0%	3.6%	4.0%
Lincoln County	100%	8.8%	2.0%	2.8%	3.2%
Marathon County	100%	14.3%	4.2%	6.8%	1.8%
Portage County	100%	10.1%	3.6%	2.8%	1.7%
Wood County	100%	30.2%	18.0%	7.6%	3.1%
Centergy	100%	17.5%	7.7%	5.9%	2.3%

B.

Percent of Healthcare and Social Assistance Employment

	Healthcare and Social Assistance	Ambulatory Health Care Services	Hospitals	Nursing and Residential Care Facilities
Wisconsin	100%	29.3%	31.5%	22.4%
Adams County	100%	9.2%	31.4%	34.9%
Lincoln County	100%	22.5%	31.8%	36.7%
Marathon County	100%	29.7%	47.7%	12.7%
Portage County	100%	35.4%	27.3%	17.1%
Wood County	100%	59.7%	25.3%	10.3%
Centergy	100%	44.3%	33.6%	13.2%

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From table 1, it is clear that the Centergy region hosts a cluster of healthcare and social assistance employment relative to the state. Within the Centergy region, there is a spectrum of proportionate concentrations of healthcare and social assistance between counties. A decomposition of healthcare and social activities to healthcare specific sub-sectors is telling. This disaggregation reveals that the Centergy region has clusters of ambulatory health care services and hospital employment compared to the state. The proportionate share of nursing – residential care facility employment in the Centergy region is smaller than that found statewide.

As noted, there is a spectrum of employment clusters between counties. For example, in Adams County, healthcare and social services sector employment plays a different role in the county total job base than that in Wood County. For the purposes of this brief, the data in table B have special meaning. Occupational labor demand is different across the healthcare industry sub-sectors. Understanding the relative concentrations of sub-sector employment, in conjunction with staffing patterns, sheds light on estimated occupational labor demand by county. These differences are critical to analyzing the alignment between industrial employment concentrations and occupational demand.

Caution should be utilized in relating shares of employment by sector and sub-sector to the state or inter-regional level. There are two points to consider when making comparisons. The first is that the composition of state sector and sub-sector employment is not a representative measure of cross-county median employment. As explanation, the state data is shaped by the inclusion of all counties. Among all 72 counties there are outlier counties with very high healthcare employment concentrations and thus the distribution of cross-county employment structures is highly skewed. In the case where an individual county has a proportionate employment concentration in excess of the state, this represents a significant cluster. Less meaning can be derived if a county has an employment share in a sector or sub-sector that is found to be less than that in the state.

The second point is that given the relative high average annual earnings found in healthcare and social assistance, employment totals alone are not a globally meaningful assessment of the impact this sector has on a regional economy. Given the high payroll to employment ratios typically found in healthcare industries, even smaller proportionate employment shares can be very meaningful to regional economies.

II. Estimated Occupational Staffing Pattern for the Centergy Labor Shed

In an effort to describe the staffing needs of the industry clusters in the Centergy labor shed, the following staffing pattern matrices have been assembled. The first matrix, titled table 2, displays high level occupational group staffing patterns for the industry sub-sectors: ambulatory health care services, hospitals, and nursing – residential care. The second series of matrices, including tables 3 through 8, display specific occupational staffing patterns within the occupational groups: healthcare practitioners – technical and healthcare support.

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To be clear, the distribution of employment for occupation groups by industry draws from the 2010 National Employment Matrix. A product of the Bureau of Labor Statistics, the national matrix is not necessarily reflective of the occupational patterns of regional industry clusters in the Centergy labor shed but rather depicts average national industry-occupation staffing patterns.

Table 2, Healthcare Industry Sub-Sector Employment by Major Occupational Group

Standard Occupation Code	Major Occupation Group Title	Percent of Industry Sub-Sector Employment		
		Ambulatory Health Care Services	Hospitals	Nursing and Residential Care Facilities
11-0000	Management	2.7%	3.7%	3.1%
13-0000	Business and Financial Operations	1.0%	1.9%	0.9%
15-0000	Computer and Mathematical	0.5%	1.1%	0.1%
17-0000	Architecture and Engineering	0.0%	0.1%	0.1%
19-0000	Life, Physical, and Social Science	0.6%	0.6%	6.4%
21-0000	Community and Social Service	3.2%	2.5%	0.4%
23-0000	Legal	0.0%	0.0%	0.0%
25-0000	Education, Training, and Library	0.1%	0.4%	0.1%
27-0000	Arts, Design, Entertainment, Sports, and Media	0.1%	0.2%	17.0%
29-0000	Healthcare Practitioners and Technical	36.6%	53.0%	40.7%
31-0000	Healthcare Support	22.5%	12.6%	0.4%
33-0000	Protective Service	0.0%	0.8%	10.4%
35-0000	Food Preparation and Serving Related	0.1%	2.6%	5.6%
37-0000	Building and Grounds Cleaning and Maintenance	0.5%	3.6%	6.5%
39-0000	Personal Care and Service	4.1%	0.4%	0.1%
41-0000	Sales and Related	0.4%	0.2%	5.0%
43-0000	Office and Administrative Support	26.5%	14.1%	0.0%
47-0000	Construction and Extraction	0.0%	0.3%	0.0%
49-0000	Installation, Maintenance, and Repair	0.2%	1.0%	1.4%
51-0000	Production	0.3%	0.4%	1.3%
53-0000	Transportation and Material Moving	0.4%	0.3%	0.5%
00-0000	Total, All	100.0%	100.0%	100.0%

Table 2 contains two broad points for estimated occupational demand for healthcare industry sub-sectors. The first is that there is variation among occupational group employment within specific industry sub-sectors. The second is that there is variation of occupational group employment between industry sub-sectors. The take away from both the data and these points is that healthcare industry sub-sectors need different types of workers than just those in the occupational groups: healthcare practitioners and technical and healthcare support. A second point is that occupational demand within the Centergy region is likely different by county. The differences are in part dependent upon the proportional composition each healthcare sub-sector comprises of total healthcare and social assistance employment.

From table 2, within all three healthcare industry sub-sectors, much occupational demand derives from either or both major occupational groups; healthcare support and healthcare practitioners and technical occupations. In an effort to provide more specificity into the industry driven occupational labor market demand for types of occupational minor groups and specific occupations nested within

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major groups, tables 3, 4, 5, 6, 7, and 8 have been assembled from the National Industry Occupation Matrix.

The tables 3, 4, and 5 contain the proportionate composition of industry sub-sector occupational employment by minor group nested within major group. As an example, from table 3, 59.8 percent of healthcare practitioners and technical occupations employment (in the ambulatory health care services industry sub-sector) is composed of health diagnosing and treating practitioner occupations employment. Putting this into context with table 2 reveals that while 36.6 percent of ambulatory health care industry employment is composed of healthcare practitioners occupations, over 50 percent of those healthcare practitioners are employed in health diagnosing occupations.

Table 3, Ambulatory Health Care Services Occupational Composition

Ambulatory Health Care Services, Major Occupational Group Composition by Minor Occupation Grouping

Healthcare Practitioners and Technical Occupations, SOC: 29-0000		
29-1000	Health Diagnosing and Treating Practitioners	59.84%
29-2000	Health Technologists and Technicians	39.34%
29-9000	Other Healthcare Practitioners and Technical Occupations	0.82%
Total, Major Group Employment		100%
Healthcare Support Occupations, SOC: 31-0000		
31-1000	Nursing, Psychiatric, and Home Health Aides	32.44%
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	5.78%
31-9000	Other Healthcare Support Occupations	61.78%
Total, Major Group Employment		100%

Table 4, Hospitals Occupational Composition

Hospitals Major Occupational Group Composition by Minor Occupation Grouping

Healthcare Practitioners and Technical Occupations, SOC: 29-0000		
29-1000	Health Diagnosing and Treating Practitioners	69.31%
29-2000	Health Technologists and Technicians	29.64%
29-9000	Other Healthcare Practitioners and Technical Occupations	1.04%
Total, Major Group Employment		100%
Healthcare Support Occupations, SOC: 31-0000		
31-1000	Nursing, Psychiatric, and Home Health Aides	65.05%
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	5.27%
31-9000	Other Healthcare Support Occupations	29.68%
Total, Major Group Employment		100%

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Table 5, Nursing and Residential Care Facilities Occupational Composition

Nursing and Residential care Facilities Major Occupational Group Composition by Minor Occupation Grouping

Healthcare Practitioners and Technical Occupations, SOC: 29-0000

29-1000	Health Diagnosing and Treating Practitioners	43.11%
29-2000	Health Technologists and Technicians	56.61%
29-9000	Other Healthcare Practitioners and Technical Occupations	0.28%
Total, Major Group Employment		100%

Healthcare Support Occupations, SOC: 31-0000

31-1000	Nursing, Psychiatric, and Home Health Aides	96.98%
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	1.61%
31-9000	Other Healthcare Support Occupations	1.41%
Total, Major Group Employment		100%

To recap the analysis thus far, the proportionate composition of major group occupation employment for the three healthcare sub-sectors varies across sub-sectors. While the two major groups: healthcare support occupations and healthcare practitioner occupations form the majority of occupational demand on behalf of industry sub-sectors, other types of occupations are in demand by these industries. A closer look of the composition of major group occupational demand by sub-sector reveals very different occupational minor group composition across industries. As a follow up to the proportional composition provided by minor group, tables 6, 7 and 8 provide prominent individual occupations employed within minor groups by industry sub-sector nested by major groups. All occupational codes provided reflect those found in the standard occupational coding system (SOC).

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Table 6, Ambulatory Health Care Services Employment Occupational Detail

Ambulatory Health Care Services Prominent Individual Occupations by Minor Occupation Grouping

Healthcare Practitioners and Technical Occupations, SOC: 29-0000

29-1000	Health Diagnosing and Treating Practitioners	59.84%
29-1111	Registered Nurses	
29-1060	Physicians and Surgeons	
29-1020	Dentists	
29-2000	Health Technologists and Technicians	39.34%
29-2061	Licensed Practical and Licensed Vocational Nurses	
29-2021	Dental Hygienists	
29-2041	Emergency Medical Technicians and Paramedics	
29-9000	Other Healthcare Practitioners and Technical Occupations	0.82%
29-9799	Healthcare Practitioners and Technical Workers, All Other	
29-9091	Athletic Trainers	
Total, Major Group Employment		100%

Healthcare Support Occupations, SOC: 31-0000

31-1000	Nursing, Psychiatric, and Home Health Aides	32.44%
31-1011	Home Health Aides	
31-1012	Nursing Aides, Orderlies, and Attendants	
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	5.78%
31-2021	Physical Therapist Assistants	
31-2022	Physical Therapist Aides	
31-2011	Occupational Therapy Assistants	
31-9000	Other Healthcare Support Occupations	61.78%
31-9092	Medical Assistants	
31-9091	Dental Assistants	
31-9799	Healthcare Support Workers, All Other	
Total, Major Group Employment		100%

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Table 7, Hospitals Employment Occupational Detail

Hospitals Prominent Individual Occupations by Minor Occupation Grouping

Healthcare Practitioners and Technical Occupations, SOC: 29-0000		
29-1000	Health Diagnosing and Treating Practitioners	69.31%
29-1111	Registered Nurses	
29-1120	Therapists	
29-1060	Physicians and Surgeons	
29-2000	Health Technologists and Technicians	29.64%
29-2030	Diagnostic Related Technologists and Technicians	
29-2050	Health Practitioner Support Technologists and Technicians	
29-2010	Clinical Laboratory Technologists and Technicians	
29-9000	Other Healthcare Practitioners and Technical Occupations	1.04%
29-9090	Miscellaneous Health Practitioners and Technical Workers	
29-9799	Healthcare Practitioners and Technical Workers, All Other	
29-9011	Occupational Health and Safety Specialists	
Total, Major Group Employment		100%
Healthcare Support Occupations, SOC: 31-0000		
31-1000	Nursing, Psychiatric, and Home Health Aides	65.05%
31-1012	Nursing Aides, Orderlies, and Attendants	
31-1013	Psychiatric Aides	
31-1011	Home Health Aides	
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	5.27%
31-2021	Physical Therapist Assistants	
31-2022	Physical Therapist Aides	
31-2011	Occupational Therapy Assistants	
31-9000	Other Healthcare Support Occupations	29.68%
31-9092	Medical Assistants	
31-9799	Healthcare Support Workers, All Other	
31-9093	Medical Equipment Preparers	
Total, Major Group Employment		100%

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Table 8, Nursing and Residential Care Facilities Employment Occupational Detail

Nursing and Residential Care Facilities Prominent Occupations by Minor Occupation Grouping

Healthcare Practitioners and Technical Occupations, SOC: 29-0000

29-1000	Health Diagnosing and Treating Practitioners	43.11%
29-1111	Registered Nurses	
29-1123	Physical Therapists	
29-1122	Occupational Therapists	
29-2000	Health Technologists and Technicians	56.61%
29-2061	Licensed Practical and Licensed Vocational Nurses	
29-2071	Medical Records and Health Information Technicians	
29-2051	Dietetic Technicians	
29-9000	Other Healthcare Practitioners and Technical Occupations	0.28%
<u>Total, Major Group Employment</u>		<u>100%</u>

Healthcare Support Occupations, SOC: 31-0000

31-1000	Nursing, Psychiatric, and Home Health Aides	96.98%
31-1011	Home Health Aides	
31-1012	Nursing Aides, Orderlies, and Attendants	
31-1013	Psychiatric Aides	
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	1.61%
31-2011	Occupational Therapy Assistants	
31-2021	Physical Therapist Assistants	
31-2022	Physical Therapist Aides	
31-9000	Other Healthcare Support Occupations	1.41%
31-9799	Healthcare Support Workers, All Other	
31-9092	Medical Assistants	
<u>Total, Major Group Employment</u>		<u>100%</u>

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III. Conclusion

Occupational labor demand is of great interest to parties interested in identifying industry employment needs. This analysis utilized two broad pieces of data to tentatively examine the linkage between regional industry employment and corresponding occupational labor market demand. From the QWI, regional employment clusters for healthcare industry sub-sectors were identified at the regional and county levels. Using the National Industry Occupation Matrix, profiles of occupational employment composition were assembled and identified for the target healthcare industry sub-clusters. A key assumption, the national matrix and staffing patterns therein are representative at the regional level is tentative and requires more analysis. External research using the national matrix has found evidence that high technology occupational employment is not well captured using similar methodology (Barbour and Markusen, 2007). However, given the extreme limitations of publically available staffing pattern data, the national matrix is one of few tools accessible to regional occupational analysis.

In summary, the data show extensive variation in occupational composition among targeted industry sub-sectors. At a more detailed level there is also substantial variation of employment in minor occupational groups between industry sub-sectors. Understanding the demand side needs of local industry clusters can aide both resident industry growth and individuals seeking to gain better understanding of in-demand occupational skills.

The Wisconsin Department of Workforce Development 's Office of Economic Advisors (OEA) is charged with assisting all interested parties in better understanding their local economies. OEA has labor economists positioned throughout Wisconsin to help those involved in economic and workforce development.

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