CE 3.5 ANCC Contact Hours

Professional Case Management
Vol. 20, No. 6, 271-296

What Case Managers Should Know About Their Roles and Functions

A National Study From the Commission for Case Manager Certification: Part 1

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ABSTRACT

Purpose: The purpose of this national role and function study was to identify the essential activities and necessary knowledge areas for effective case manager practice from the perspective of those currently functioning in various care settings and across diverse professional disciplines.

Primary Practice Setting(s): The national study covered all case management practices and/or work settings across the full continuum of health care.

Methodology and Sample: This cross-sectional descriptive study used the practice analysis method and online survey research design. It employed a purposive sample of case managers, in which 52,370 individuals received an invitation to participate. Data collection completed over a 4-week period, resulting in 7,668 useable survey responses (nearly a 15% response rate).

Results: The study identified the common activities and knowledge areas necessary for competent and effective performance of case managers, as is highlighted in this article, which is the first of a 2-part series on the role and function study. The results informed the needed update of the test specifications for the Certified Case Manager (CCM) certification examination, as will be delineated in Part 2 of the article series, to ensure that it continues to be substantiated in current practice. Of special note are the emergence of specific activity and knowledge domains in the area of case management ethical, legal, and practice standards, and an increase in the number of employers requiring certified case managers to fill vacant positions and compensating them financially for such qualifications.

Implications for Case Management Practice: This study helps keep the CCM credentialing examination evidence-based and maintain its validity for evaluating competency of case managers. Specifically, the study identified essential activities and knowledge domains that define competent case management practice. Findings can be used for developing programs and curricula for the training and development of case managers. The study instrument also can be used for further research of case management practice.

Key words: *activity, care coordination, case management, certification, factor analysis, function, index of agreement, knowledge, practice analysis, role, survey research, test specifications, transitions of care*

Health care executives, regulators, accreditation agencies, consumer advocates, other stakeholders, and the marketplace in general are placing increasing demands for improved outcomes, efficiency, cost-effectiveness, and safe health care and human services. This era of increased accountability and transparency more than ever emphasizes the importance of patient-centered care, care coordination, care/case management, and care transitions as necessary strategies to achieve desired outcomes. Pursuit of the "triple aim" in health care—improving the experience of care, achieving better health of individuals and populations, and reducing the per capita cost of care (Berwick, Nolan, & Whittington,

The authors acknowledge the work of International Credentialing Associates (ICA) and its "Certified Case Manager (CCM) Role and Function Study Report" (October 2014), from which much of the data and findings of this article are derived. In addition, the authors acknowledge the 2014–2015 CCMC Commissioners, the subject matter experts who participated in the taskforces, and CCMC staff, including MaryBeth Kurland, Chief Operations Office, and Debby Formica, Senior Director of Administration and Operations.

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The authors report no conflicts of interest.
DOI: 10.1097/NCM.0000000000000115

2008)—is no longer an abstract concept; rather, it is a tangible objective and imperative. Noticeably, however, these demands and expectations have put the professional case manager in the spotlight not only as the interdisciplinary health care team members responsible for care management and care coordination activities, but also to undertake quality measurement and evaluation of the systems of care delivery and their impact on the patient. To that end, new care models such as accountable care organizations and patient-centered medical homes put the onus on interdisciplinary teams working together to ensure achievement of desirable outcomes: safe, quality, cost-effective, and affordable care. As a key team member, the professional case manager is uniquely prepared to impact the experience of both the patient and the health care organization in the systems of health and human service delivery. The case manager is often responsible for the measurement and evaluation of the outcomes achieved by the team of physicians, nurses, and other clinicians against specific goals such as reduced utilization of scarce and costly resources and improved safety and quality of care.

The ability of the case manager to fulfill these demands underscores the importance of acquired credentials: educational background, certification, and experience. Competency in essential activities (i.e., the day-to-day activities case managers engage in when providing care for patients or "clients" as they are also known in some practice settings) and knowledge areas (i.e., what case managers must know and skills they must demonstrate to competently and effectively perform these day-to-day activities) provide assurance to the various health care stakeholders, especially the consumers of care, that case managers are well qualified for their roles. One widely accepted approach to demonstrating competency is through certification. While many health care stakeholders, including case management practitioners themselves, may equate certification with credentialing, one should not lose sight of the development of the certification examination and the process that keeps it meaningful and relevant to current practice. This process is rooted in rigorous, scientifically valid field research referred to as practice analysis or roles and functions study. The Commission for Case Manager Certification (CCMC), which offers the Certified Case Manager (CCM) credential, conducts a role and function study on a regular and ongoing basis to ensure that the CCM certification process and the content of the certification examination remain relevant to practice, recognizing the increasing needs of patients across the health care continuum and the expanding dimensions of the transdisciplinary health care team.

This article, the first of a two-part series on a national role and function study, details the importance of such a study for the field of case management, the conduct and scientific rigor of the practice analysis by surveying thousands of practicing case managers, and the evaluation of relevance of essential activities and knowledge areas to current practice. What emerges is a detailed "portrait" of the state of case management practice today—the typical practice of a case manager, years of experience, professional background, work setting, and more. Part 2, to be published in the January–February 2016 issue of this journal, examines the findings of the role and function study as an evidence base that informs the structure and design of the CCM certification examination.

The CCMC's research is critical for maintaining its high standards for the CCM exam, keeping it evidence-based, and using its validity to evaluate the competency of the case manager.

The CCMC—established in 1992, making it the first and largest nationally accredited organization that certifies case managers—conducts a national role and function study every 5 years. Assuring that the CCM examination is empirically based is one factor that allows the CCMC to maintain its accreditation by the National Commission for Certifying Agencies (NCCA), specifically by meeting NCCA's research standard (Standard 7) that requires certification examinations to be evidence-based and updated regularly due to changes in practice. The NCCA was established by the National Organization for Competency Assurance, now known as the Institute for Credentialing Excellence. Role and function studies in credentialing are typically used to generate a specification or blueprint for certification examinations. However, there are other benefits for these studies: they offer guidance for certification eligibility criteria; professional development guidelines; training and educational curricula, courseware, and materials; competency development or competency models; and creation of a body of knowledge in the related area of practice.

For the health care practitioner, the rigor of the certification process and CCMC's 20-year history of conducting role and function studies is of vital professional importance. Because it is backed by a scientific, evidence-based study of real-world professional practice, the CCM credential is increasingly recognized in the field, including by a growing percentage of case management employers who require certification as a condition of employment. Thus, attainment of the CCM attests that the credential holders

have demonstrated through testing that they possess the knowledge, experience, and skills required to perform the case management role. The rigor of the research process ensures relevancy and currency of the CCM certification and is a proxy for excellence by the individual who holds the credential.

The Role and Function Study

To fulfill organizational objectives and maintain adherence to testing and measurement standards, the CCMC collaborated with International Credentialing Associates in 2014 to perform its national role and function study of the case management profession. This type of study seeks to understand the current practice of case management at the micro level and directly from the field where case managers practice. A role and function study is sometimes referred to as a practice analysis, job analysis, task analysis, role delineation, or functional analysis. Regardless of the nomenclature utilized, this research method refers to the investigation of a certain profession, or a work position within a profession (e.g., case manager), to obtain descriptive information about the responsibilities (e.g., activities, tasks, and behaviors) of the position and the competencies (e.g., knowledge, skills, and abilities) needed to be effective in the position.

As with prior role and function studies (1994, 1999, 2004, and 2009), the most recent study conducted in 2014 used the practice analysis survey method to describe case management practice in diverse settings and from the perspective of various professional disciplines. The practice analysis research method was used to analyze case management practice and delineate both (1) the roles and functions of the case manager and (2) the related and necessary knowledge areas. This method is appropriate because it applies procedures that are designed to obtain descriptive information about tasks performed by case managers and the important knowledge and skills needed to adequately perform those tasks (Tahan, Downey, & Huber, 2006).

The 5-year research cycle is purposeful and necessary to allow changes in the field to evolve and become routine practice expectations. Certification examinations are then built on the basis of generally common rather than unique or exceptional practices. (More details about the design, method, and procedures unique to practice analysis are published elsewhere; Tahan, Huber, & Downey, 2006; Tahan, Downey, et al., 2006; Tahan and Campagna, 2010.)

The practice analysis involves a multimethod approach consisting of individual and group meetings with subject-matter experts, survey instrument development, and data collection from a large number of practicing case managers using the role and function survey instrument developed for the purpose of this national practice analysis. As a scientific approach, the survey instrument, national data collection methods, and data analysis procedures in the role and function study addressed three main research questions (identical with prior years):

1. What are the essential activities/domains of practice of case managers?
2. What are the knowledge areas necessary for effective case management practice?
3. Is there a need to revise the blueprint of the CCM certification examination? And if so, what modifications are warranted?

Researchers typically conduct a role and function study in four phases. The first is to determine a description of the profession of interest: case management. Using current literature and past similar study instruments about the role of the case manager, researchers draft an initial list of essential activities and knowledge areas, as well as a set of questions to ascertain the background and demographic characteristics of those participating in the study. Second, the draft description is refined through input from groups of practitioners known as subject-matter experts, composed of case managers from a range of professional backgrounds, practice settings, and geographic regions in the United States. This team of experts is selected to resemble the professionals involved in the practice.

Third, a pilot study is conducted to evaluate the relevance, currency, and completeness of the survey instrument prior to nationwide data collection. This phase focuses on gathering the input and feedback of a small sample of case managers about the survey. Researchers then modify the survey on the basis of the information obtained and deem it final and ready for wide use. Fourth, the final instrument is used for national data collection employing a large sample of practicing case managers. The purpose of this phase is to obtain a practical description of the role of case managers, with particular emphasis on the important activities and knowledge areas the certification examination should focus on. Survey participants evaluate each element of the description with specific rating scales. Results produce a picture of current professional practice.

Preparation for the role and function study began with a kick-off planning meeting held in February 2014 with key stakeholders including the researchers and CCMC representatives. They agreed on the goals of the study, project roles, logistics, requirements for subject-matter experts, distribution plan for the survey data collection, and the project schedule. The researchers obtained CCMC's existing CCM test specifications and past role and function study reports to use in drafting the delineation of essential activities and knowledge domains. In conjunction with this task, researchers conducted a select literature review

of relevant published works and publically available job descriptions for case managers. They gathered and summarized the literature and used the findings to revise and add to the existing delineation (the draft survey instrument).

Subject-matter experts were then appointed to serve on the role and function study task force. Appointments were made to ensure relevant diversity, including practice settings, years holding the CCM certification, non-certified case managers, practicing case managers, work settings, practice specialization, professional backgrounds, and geographic location. The subject-matter experts consisted of case managers with nursing, social work, vocational rehabilitation, disability management, professional counseling, or workers' compensation backgrounds. They came from various geographic locations across the United States, and worked in settings across the continuum of health and human services delivery (e.g., preacute, acute, and postacute), health insurance plans, workers' compensation, and private/independent practice.

An in-person 2-day task force meeting of the subject-matter experts was held in April 2014 to review and revise the initial draft of essential activities and knowledge statements associated with case management practice. Working as a group and drawing upon their diverse expertise and experiences, the task force established a clear meaning and useful structure of the *domains of case management practice and knowledge*, discussed the importance and criticality of the *essential activities and knowledge areas*, and ensured that each *essential activity* and *knowledge statement* was accurately delineated, simple, clear, and concise, and that there were no redundancies across statements.

The revised essential activities and knowledge statements were used to construct the role and function study instrument. After further review and editing of the draft survey, a group of case management professionals who were not yet involved in the role and function study process reviewed the survey independently, as a pilot test, to provide further assurance that no activity or knowledge statements were omitted, redundant, unnecessary, and/or unclear.

The researchers compiled the results and comments from the pilot survey review and examined them for any issues that would impede or invalidate data analysis for the full survey; no such issues were identified. A follow-up subject-matter experts meeting was held via a web conference, during which participants reviewed the findings and recommendations of the pilot test. They then incorporated what they considered significant and necessary into the final study instrument.

The 2014 Case Manager's Role and Function Study Instrument

Similar to the CCMC's past survey instruments, the final case manager role and function survey instrument used in the 2014 study contained five sections as described later. The instrument consisted of theoretical domains, applying those that were used in the 2009 survey.

- *Section 1—Background and Demographic Questions (19 items)*: Survey participants were asked to provide general background information, including primary job title, percentage of time spent in providing direct case management services to patients/client, primary workplace setting, the number of years performing case management work, professional background, whether or not the participant is certified as a CCM, practice location in the United States, highest academic educational degree, age, gender, and ethnicity.
- *Section 2—Essential Activities (125 items)*: The essential activities were organized across six theoretical domains (based on the 2009 survey):

  1. Case finding and intake
  2. Provision of case management services
  3. Psychosocial and economic issues
  4. Utilization management activities
  5. Vocational and rehabilitation services
  6. Outcomes evaluation and case closure

  Survey participants were asked to rate each of the essential activity statements using two rating scales that focused on importance and frequency. First, they responded to the question "how important is performance of this essential activity in your current position?" using a 5-point rating scale (rating of 0 = *of no importance*, 1 = *of little importance*, 2 = *moderately important*, 3 = *important*, and 4 = *very important*). They then responded to the second question "on average, how frequently do you perform this essential activity in your current position based on your average day of work?" using a 5-point rating scale (0 = *never*, 1 = *seldom*, 2 = *occasionally*, 3 = *often*, and 4 = *very often*).

- *Section 3—Knowledge Areas (94 items)*: The knowledge statements were organized across five domains (based on the 2009 survey): (*Note*: Essential activity domains differ from those of knowledge and skills. Essential activity statements started with an action verb, while knowledge statements used a noun instead. This was logical and indicated by the organization of the essential activity and knowledge/skills statements.)
  - Case management concepts and strategies
  - Health care management and delivery

- Health care reimbursement
- Rehabilitation and vocational concepts and strategies
- Psychosocial and support systems

The knowledge statements, similar to essential activity statements, were also rated using two scales: one for importance and one for frequency. Survey participants were asked to answer the question "how important is this knowledge to performance of your job responsibilities in your current position?" using a 5-point scale (0 = *of no importance*, 1 = *of little importance*, 2 = *moderately important*, 3 = *important*, 4 = *very important*). They were also asked to answer the question "on average how frequently do you use this knowledge in your current position based on your average day of work?" using a 5-point scale (0 = *never*, 1 = *seldom*, 2 = *occasionally*, 3 = *often*, 4 = *very often*).

- *Section 4—Domain Comprehensiveness & Test Content Recommendations*: After survey participants rated each of the essential activities and knowledge statements for a specific content (domain) area, they rated the adequacy of the content, using a 5-point scale (0 = *very poorly*, 1 = *poorly*, 2 = *adequately*, 3 = *well*, and 4 = *very well*). Participants were also asked if any of the essential activities or knowledge statements were missing, and if so to submit additional essential activities or knowledge statements using a designated free text area on the survey.
- For each of the five knowledge domains—case management concepts and strategies, health care management and delivery, health care reimbursement, rehabilitation and vocational concepts and strategies, and psychosocial and support systems—participants were asked to suggest how many test questions should be included in each of the domains. Participants answered on the basis of a scenario of 100 questions to make it easier for them to determine the amount per domain. Since certification examinations test knowledge rather than activities, participants were restricted to answer this section for the knowledge domains only.
- *Section 5—Other Comments*: The survey concluded with two open-ended questions to elicit further feedback on professional development/continuing education and the changing role of the case manager (responses will be addressed in Part 2).

The case manager's role and function study was launched in late May 2014 via a multipronged communications campaign, with 4 weeks of data collection employing a purposive, nonrandomized sample of case managers. Researchers promoted the survey and invited potential participants via direct e-mails to 52,370 invitees, which included CCM credential holders and other case manager contacts in the CCMC database. Those who were invited to participate included both CCM-certified and non-certified case managers. The survey was also promoted via a press release, newsletter articles, posts on the CCMC's social media channels, and a link on the CCMC website. Reminders were sent out weekly for a total of four times during the month of June, and the survey was closed for data collection on July 1, 2014.

Data Analysis

Prior to data analysis, the researchers removed any participants' identifying information from the database to ensure their anonymity, confidentiality, and privacy. The researchers then segmented the analysis into several sections: demographic questions, essential activities, knowledge areas, and comparative analysis of the essential activity and knowledge ratings by subgroups. Descriptive statistics using sample and subgroup size and frequency distributions were calculated for each demographic survey question.

The researchers also employed descriptive statistics in the analysis of the participants' responses to the essential activity and knowledge statements and content coverage ratings. These included frequency distributions, means, and standard deviations.

The researchers reviewed the demographic questions and determined which comparative subgroup analyses could identify significant differences between groups on importance ratings of essential activity and knowledge statements. The proposed subgroups were then reviewed for appropriateness with representatives from the CCMC. This was necessary because survey participants reported more than 35 different job titles and 30 work settings. Combining job titles and work settings on the basis of perceived similarities resulted in a manageable number of subgroups for meaningful analyses. For example, participants who indicated disability specialist, vocational evaluator, rehabilitation counselor, and work adjustment specialist as their job titles were combined into one subgroup. Similarly, those who reported working in a government agency, military treatment facility, or Veterans health administration agency were combined into one subgroup. This resulted in a total of 16 subgroups based on job titles and 15 based on work settings.

Location of practice by state and participants' demographics were additional factors included in the analysis. To make the analysis more manageable and meaningful, categorization by geographical regions of the United States was used instead of by state.

Regardless of the specific job title held by a case management professional, survey respondents revealed an emphasis on care management and care coordination. Care management and care coordination terminology and titles are being used interchangeably.

Researchers applied the index of agreement (IOA) test statistic to examine the degree of the similarities or differences that existed among subgroups relevant to their perception of importance ratings on essential activities and knowledge areas.

Role and Function Study Results

Characteristics of the Study Sample

Although 7,723 participants responded to the survey during the 4 weeks of data collection, 7,668 survey responses were deemed appropriate for inclusion in the analyses. The researchers excluded 65 surveys from the analysis: 4 from international regions (the study focused on the United States only) and 61 surveys that were less than 50% complete. Final participation in the 2009 study was 6,909 and the 2004 study consisted of 4,165 participants. Thus, the number of eligible survey responses in the 2014 role and functions study nearly doubled (+84%) compared with the 2004 study. In the 2014 study, examination of the demographic data, combined with comparisons with previous studies, demonstrated that the cohort of respondents represented the practice. Furthermore, the 14.64% response rate of the 52,370 potential survey participants approached was deemed sufficient to generalize the findings with a high degree of confidence and precision (99% confidence level and a 1.36 confidence interval).

Answers to the background and demographic questions (see Table 1) revealed that slightly more than half of respondents (53.99%) were care/case managers while 8.66% were managers/supervisors and 5.62% were directors of care/case management. In addition, a third of participants (34.14%) spent 81%–100% of their time on case management activities. The study also revealed a wide range of titles held by professionals in addition to case/care manager: care/case coordinator (5.49%), transitional care nurse (0.56%), utilization reviewer/manager (4.93%), social worker (2.24%), consultant (2.65%), and others.

The most common primary work/practice settings were health insurance (28.94%) and hospitals (22.76%). Workers compensation was another setting for 11.6% of respondents, followed by independent care/case management, 7.3%, and ambulatory/outpatient care, 5.48%. Of special note are emerging case management practice settings such as rehabilitation facilities (almost 2%), Veterans health or other government agencies (3.64%), home care (2.28%), and skilled care facility (1%). It is likely that case management presence in these settings was a result of the Patient Protection and Affordable Care Act of 2010 and value-based purchasing; most likely it will continue to increase.

Nearly half of survey respondents (49.1%) said that their organizations do not require case managers to work on weekends, while more than one-third (37.44%) said that they were required to work weekends, and another 13.46% reported being on-call only on weekends. The rate of working on weekends doubled compared with the 2009 study results (18.66%) and being on call showed an increase by 1.65% over 2009. When combining work on weekends, whether physically present on site or via phone (50.9%), one can conclude that case management practice was no longer a 5-day operation for more than half the respondents.

More than half of survey respondents (53.05%) also said that case managers were not required to work on holidays; while 27.07% said that case managers were required to work on holidays, and 19.87% on-call only for holidays. These results also demonstrate a rising trend compared to the 2009 study findings, which showed 13.87% physically present on site and 14.29% on-call during holidays. Similar to working on weekends, this, too, nearly doubled, further supporting the trend that case management practice is no longer a 5-day operation.

More than half of respondents (58.07%) have performed case management work for more than 10 years. More specifically, 21.05% of respondents performed case management work for 11–15 years, 17.29% for 16–20 years, 10.88% for 21–25 years, and 8.85% for more than 25 years. In addition, 22.93% reported practicing case management for 6–10 years. This demonstrates that the case management workforce is experienced. On the contrary, only a small number of case managers are new to the profession, which ultimately may present concerns for filling positions upon the retirement of a large portion of case managers (about 20% have been practicing case management for more than 20 years). The ongoing effort by the CCMC to address workforce readiness is a strategic initiative supported by these findings. Professional organizations and associations directly or indirectly involved in case management practice must address the aging workforce if they have not done so yet and be proactive in dealing with the supply versus demand concerns; otherwise, a

TABLE 1
Background and Demographics (Total Sample = 7,668)

Category	N	%
Job title		
Administrator	71	0.93
Admissions liaison/intake coordinator	46	0.60
Care/case coordinator	421	5.49
Care/case manager	4,140	53.99
Consultant	203	2.65
Director of case management/care management/care coordination	431	5.62
Director, other	160	2.09
Discharge planner	63	0.82
Disease manager	61	0.80
Documentation specialist	24	0.31
Health coach/health navigator	56	0.73
Manager/supervisor/administrator	664	8.66
Mental/behavioral health counselor	15	0.20
Quality management specialist	73	0.95
Rehabilitation counselor/vocational evaluator/disability specialist	82	1.08
Social worker	172	2.24
Staff/clinical nurse	142	1.85
Transitional care nurse/transition of care nurse	43	0.56
University-based educator	52	0.68
Utilization reviewer/manager/bill auditor/insurance benefits manager	378	4.93
Workers' compensation specialist	238	3.10
Other	133	1.74
Total	7,668	100.00
Primary work/practice setting		
Ambulatory/outpatient care/mental health center	420	5.48
Community residential program/adult day care	32	0.42
Disease management agency/program	140	1.83
Government agency	217	2.83
Health insurance company/reinsurance	2,219	28.94
Home care agency	175	2.28
Hospice	31	0.40
Hospital	1,745	22.76
Independent care/case management	556	7.25
Independent rehabilitation company/insurance affiliate	163	2.13
Liability insurer	30	0.39
Life/disability insurer	72	0.94
Long-term acute care	60	0.78
Medical home/health home	70	0.91
Military treatment facility	76	0.99
Rehabilitation facility (acute/subacute)	146	1.90

(*continues*)

TABLE 1
Background and Demographics (Total Sample = 7,668) (*Continued*)

Category	N	%
Skilled nursing facility/long-term care facility	77	1.00
Telephonic	23	0.30
Third party administrator	201	2.62
Veterans health administration agency	62	0.81
Wellness organization	36	0.47
Worker's compensation insurer/agency	892	11.63
Other	225	2.94
Total	7,668	100.00
Professional background/discipline		
Social work	447	5.84
Counseling	87	1.13
Therapy (occupational, physical, respiratory)	48	0.63
Nursing	6,795	88.78
Vocational rehabilitation	174	2.27
Other	103	1.35
Total	7,654	100.00
Missing	14	
Grand total	7,668	
% of time spent daily in direct case management services		
0% to no involvement	903	11.78
1%–10%	797	10.39
11%–20%	406	5.29
21%–30%	409	5.33
31%–40%	313	4.08
41%–50%	441	5.75
51%–60%	483	6.30
61%–70%	488	6.36
71%–80%	810	10.56
81%–90%	833	10.86
91%–100%	1,785	23.28
Total	7,668	100.00
Years of experience in case management		
<1	36	0.47
1–2	362	4.72
3–5	1,060	13.82
6–10	1,758	22.93
11–15	1,614	21.05
16–20	1,326	17.29
21–25	834	10.88
26–30	413	5.39
31–35	196	2.56
36–40	49	0.64
41 or more	20	0.26
Total	7,668	100.00

(*continues*)

TABLE 1
Background and Demographics (Total Sample = 7,668) (*Continued*)

Category	N	%
Employer requires case managers work on weekends		
Yes	2,871	37.44
No	3,765	49.10
On-call only	1,032	13.46
Total	7,668	100.00
Day of weekend work (other than on call)		
Saturday	446	15.61
Sunday	14	0.49
Both Saturday and Sunday	2,397	83.90
Total	2,857	100.00
Missing	14	
Employer requires case managers work on holidays		
Yes	2,035	27.07
No	3,988	53.05
On-call only	1,494	19.87
Total	7,517	100.00
Missing	151	
Employer requires certification in case management		
Yes	3,080	40.36
No	4,552	59.64
Total	7,632	100.00
Missing	36	
Total	7,668	
Employer offers monetary compensation for certification in case management		
Yes	2,293	29.99
No	5,353	70.01
Total	7,646	100.00
Missing	22	
Grand total	7,668	
Holds the Certified Case Manager (CCM) credential		
Yes	6,824	88.99
No	844	11.01
Total	7,668	100.00
Year of CCM certification		
Prior to 2000	1,551	22.86
Between 2000 and 2005	1,433	21.12
Between 2005 and 2010	1,598	23.55
After 2010	2,203	32.47
Total	6,785	100.00
Missing	883	
Grand Total	7,668	
Highest academic degree		
Associate's degree	1,590	20.74
Nursing diploma	689	8.99
Bachelor's degree	3,405	44.41
Master's degree	1,900	24.78
Doctorate degree	84	1.10
Total	7,668	100.00
Age (years)		
25–30	94	1.22
31–35	244	3.19
36–40	431	5.63
41–45	786	10.27
46–50	1,052	13.74
51–55	1,701	22.22
56–60	1,890	24.69
61–65	1,097	14.33
66–70	292	3.81
>70	68	0.89
Total	7,655	100.00
Missing	13	
Grand total	7,668	
Gender		
Female	7,251	95.19
Male	327	4.29
Prefer not to answer	39	0.52
Total	7,617	100.00
Missing	51	
Grand Total	7,668	
Ethnicity		
American Indian or Alaska Native	41	0.54
Asian	214	2.80
Black or African-American	648	8.47
Hispanic or Latino	245	3.20
Native Hawaiian or Other Pacific Islander	17	0.22
Prefer not to answer	226	2.96
Two or more ethnicities or Multiethnic	108	1.41
White (non-Hispanic)	6,148	80.40
Total	7,647	100.00
Missing	21	
Grand total	7,668	
Region territory of case management practice		
New England	484	6.32
Middle Atlantic	1,151	15.03
East North Central	1,218	15.90
West North Central	437	5.71
South Atlantic	1,700	22.20
East South Central	559	7.30
West South Central	935	12.21
Mountain	483	6.31
Pacific	692	9.04
Total	7,659	100.00
Missing	9	
Grand total	7,668	

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(*continues*)

A far greater percentage of employers—40.36%—now require certification, compared with 35.9% in the 2009 survey. A monetary reward (e.g., increased compensation) is offered by nearly 30% of employers, compared with 26.7% in the 2009 survey.

delay in filling vacant case manager positions will be a reality that organizations cannot afford to ignore.

While most respondents indicated that certification in case management was not required to practice at their organization, more employers are making certification a requirement, as reported by 40.36% of survey respondents. Five years ago, in the 2009 role and function study, 35.9% of employers required certification. In addition, nearly 30% of survey respondents reported that they received monetary rewards/compensation from their employers for achieving certification, an increase from 26.7% in 2009. These findings are interesting and demonstrate that certification in case management is becoming increasingly recognized. More employers appear to value board-certified case managers, not only for their positive impact on the quality of care, but in the economics of health care, as well. This is likely attributable to changes in the regulatory environment and proliferation of the Patient Protection and Affordable Care Act, pay-for-performance, and value-based purchasing models that measure and reward quality and safe outcomes and penalize providers who fail to meet benchmarks for specific indicators such as readmission rates (CCMC, 2015).

Consistent with prior role and function study findings, the most commonly reported professional background for case managers is nursing (88.78%). However, the field is professionally diverse with 5.84% of respondents identifying themselves as social workers, 2.27% vocational rehabilitation specialists, and 1.13% professional counselors. Most of the participants in the study (89%) hold the CCM credential; however, 11% do not, which also reflects the CCMC's efforts to include certified and noncertified professionals in the practice analysis. Among those who reported being CCM credentialed, about one third (32.47%) received the credential after 2010. An additional 21.12% were certified between 2000 and 2005, and 23.55% between 2005 and 2010; 22.86% were certified prior to 2000. Asked to identify all the other credentials currently held, 28.43% of the participants reported to hold the care manager, certified (CMC), 19.9% were registered nurse case manager (RN-CM), 11.5% registered nurse, board-certified (RN-BC), 2.35% certified rehabilitation registered nurse, 2.16% certified disability management specialist, 1.81% certified rehabilitation counselor, 1.33% accredited case manager, and 15% do not hold any additional certifications or are not certified at all. These various certifications, in addition to the CCM (89% of study participants), demonstrate that the case management workforce possess a wide range of qualifications.

Among those surveyed, 70.3% held a bachelor's degree or higher (44.4% bachelor's degree, 24.8% master's degree, and 1.1% doctorate), a 5-percentage point gain from 2009. In addition, 20.7% held associate degrees and 9.0% a nursing diploma. Compared with the 2009 survey, those who hold nursing diploma went down by 3.4 percentage points, while those who hold a master's or doctorate degree increased by 4.61 and 0.39 percentage points, respectively; those holding a bachelor's degree remained about the same. This is another characteristic of the rising qualifications for those who assume case management roles today.

Nearly half of the respondents (46.91%) were between the ages of 51 and 60 years, with the largest age group being 56–60 years (24.69%). Another 14.3% were aged 61–65 years, and 4.7% were over 65 years; while 13.74% were 46–50 years, 10.27% were 41–45 years, and 10% were 40 years of age or younger. These statistics reveal two important insights. First, case management is not an entry-level role; rather, it is a specialty or advanced practice. Those who become case managers have had a number of years in prior roles, such as nursing, social work, or vocational rehabilitation. With 43.7% of respondents older than 55 years and 19% older than 65 years, it raises a concern especially when training for case managers is primarily identified as being on the job. The profession needs to act quickly and strategically to address the impact of a large number of case managers retiring and a lack of qualified replacements (CCMC, 2015).

The vast majority (95.2%) were female and 80% were white (non-Hispanic). Other ethnic groups included black or African-American, 8.5%, Hispanic or Latino, 3.2%, Asian, 2.8%, Native American or Alaska Native, 0.54%, and native Hawaiian or pacific islander, 0.2% (nearly 3.0% preferred not to answer this question). Geographically, the largest percentages of study participants practiced in states in the southern United States, with Texas at 8.4% and Florida at 6.5%. In addition, New York accounted for 7.1% of participants; California at 5.7%, Pennsylvania at 5.5%, North Carolina at 4.8%, and Ohio at 4.7%. Representation of participants in this study reflected the population density of the various states and regions; the larger the population in an area, the higher the percentage of study participants from that

area. The South Atlantic region came in at 22.2%, and East North Central and Middle Atlantic at 15.9% and 15.03%, respectively.

Essential Activities and Knowledge Areas

The data analysis consisted primarily of descriptive statistics: mean, frequencies, and standard deviations. Results reported by CCMs and non-CCMs were combined because of the strength of agreement between the two groups in terms of their ratings of activities and knowledge. To determine the appropriateness of combining responses of the two groups, researchers used the IOA test (Tabachnick & Fidel, 2001; Tahan & Campagna, 2010). Specifically in this instance, this statistical measure was used to show the extent to which CCMs and non-CCMs agreed on which essential activities and knowledge statements are important. The IOA of essential activities and knowledge areas based on CCMs versus non-CCMs was 0.93 and 0.98, respectively, which demonstrated close to perfect agreement. Given the high IOA for CCMs and non-CCMs, it was determined that combining the responses of both subgroups as one group was appropriate, including for evaluating certification test content. This finding was consistent with that of the 2004 and 2009 studies.

As with the 2004 and 2009 role and function studies, the most recent (2014) study applied criterion for interpreting the mean importance ratings based on the 5-point rating scale. This criterion would ensure that only validated essential activities and knowledge statements were used to answer the three research questions (as stated earlier: what are the essential activities/domains of practice of case managers; what are the knowledge areas necessary for effective case management practice, and is there a need to revise the blueprint of the CCM certification examination?). The cut point value for accepting or rejecting a statement was set at 2.50, which is the mid-point between moderately important and important (Tahan, Huber, et al., 2006). This criterion was consistent with the past studies. Detailed results are shown in Tables 2 and 3.

Among the essential activity domains, all 14 statements within "case finding and intake" were given an importance rating of 2.5 or higher, as were all 48 statements of "provision of case management services" and all 18 statements of "psychosocial and economic issues." Within "utilization management activities," 12 out of 15 statements received the requisite importance rating of 2.5, as did 13 out of 17 "outcomes evaluation and case closure" statements. However, only one out of 13 statements in "vocational rehabilitation services" received an importance rating of 2.5 or higher, while five statements achieved a rating higher than 2 (moderate importance) but less than 2.5. These findings are consistent with the 2009 role and function study with regard to essential activities domains associated with vocational rehabilitation. This observation may be reflective of case managers not spending much of their time on vocational and rehabilitation activities, and that such care may be necessary only for a small percentage of the patient population generally served by case managers. In addition, only 1.08% of participants indicated having a rehabilitation-related job title; 1.9% work in a rehabilitation-type setting, and 2.9% have a rehabilitation-related professional background.

Among the knowledge domains, 32 out of 35 statements in "case management concepts and strategies" were given an importance rating of 2.5 or greater, along with 13 out of 20 statements in "healthcare management and delivery," eight out of 11 statements in "health care reimbursement," and all 14 statements in "psychosocial and support systems." Consistent with the findings in vocational and rehabilitation essential activities explained earlier, only one out of 14 statements in "rehabilitation and vocational concepts and strategies" received the requisite importance rating of 2.5, while five statements achieved a rating higher than 2 (moderately important) but below 2.5. The essential activity and knowledge area statements that achieved higher than moderately important ratings were reflective of the use of assistive devices, assessment for rehabilitation services, need for rehabilitation after an injury or hospitalization due to serious acute health condition, implementation of a rehabilitation plan of care, and need for environmental modifications to address barriers. These interventions and services make an important and relevant contribution for all case management practice.

Tables 2 and 3 show the mean importance rating of each of the items included in the essential activity and knowledge area domains. The tables also include the percentage of importance ratings of 4 (important) and 5 (very important) combined as well as the percentage of frequency of use ratings of 4 (often) and 5 (very often). These calculations and analyses are necessary for the test specifications committee's consideration of which items are accepted as being a common part of case management practice and which are not. Any item with a mean important rating of 2.5 was automatically considered as common case management practice. Those with ratings lower than 2.5 were considered questionable and would require further exploration. Overall, 106 items (84.8%) of the 125 essential activity items demonstrated 2.5 or greater mean importance ratings, and 68 (72.3%) of the 94 knowledge items demonstrated acceptable mean importance ratings. These items demonstrated their importance for competent performance of case managers.

TABLE 2
Essential Activities—Mean, Standard Deviation, Importance Rating, and Frequency

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
Theoretical domain: Case finding and intake							
1.	Use information from analytic tools (e.g., screening tools, readmission information, length of stay, predictive modeling, high-dollar reporting) in the case finding process	7,646	2.88	1.26	67.37%	65.34%	P
2.	Identify cases with potential for under/overutilization of health care services (e.g., avoidable encounters to health care services such as readmissions to the hospital or emergency department)	7,644	3.00	1.22	72.17%	66.81%	P
3.	Identify cases that meet eligibility criteria for case management services (e.g., multiple chronic illnesses, polypharmacy)	7,643	3.02	1.26	74.02%	68.36%	P
4.	Review information gathered about client (e.g., diagnosis, comorbidity, history, language, prognosis, medications, prior services, health insurance status)	7,637	3.63	0.75	92.46%	90.01%	P
5.	Perform a client assessment using established case management processes and standards	7,643	3.31	1.09	83.07%	76.29%	P
6.	Validate information gathered with client/health care team	7,617	3.30	0.96	83.90%	79.94%	P
7.	Assess client's current physical, emotional, cognitive, psychosocial, and vocational functioning compared with client's baseline function	7,635	3.35	1.03	84.37%	77.83%	P
8.	Assess client for needed interventions and level of care (e.g., observation status, acute, rehabilitation)	7,639	3.24	1.13	80.22%	73.01%	P
9.	Assess client's understanding, readiness, and willingness to engage in case management services	7,635	3.18	1.15	79.88%	73.60%	P
10.	Identify barriers that affect client's engagement in case management services	7,624	3.24	1.11	81.90%	75.35%	P
11.	Assess client's relationship with key stakeholders (e.g., referral source, care providers, payors, employers)	7,629	2.84	1.17	67.53%	63.34%	P
12.	Identify cases that would benefit from additional types of services (e.g., community resources, disease management, physical therapy, durable medical equipment, vocational services, evaluations, counseling, assistive technology)	7,641	3.40	0.99	86.17%	79.78%	P
13.	Comply with legal, regulatory, and accreditation requirements pertinent to the case (e.g., informed consent, Health Insurance Portability and Accountability Act, Americans with Disabilities Act)	7,645	3.70	0.74	93.36%	90.07%	P
14.	Conduct a comprehensive intake interview	7,572	3.20	1.23	80.32%	69.26%	P
Theoretical domain: Provision of case management services							
1.	Verify client's health history and condition (e.g., medical, psychosocial, vocational, financial) with client, family, and health care team	7,643	3.39	1.00	86.22%	79.29%	P
2.	Identify client's needs and concerns (e.g., gaps in care, problem list)	7,646	3.47	0.96	88.10%	82.04%	P
3.	Prioritize client's needs and concerns	7,561	3.40	1.00	87.01%	81.07%	P
4.	Establish comprehensive case management plan, including goals, objectives, interventions, outcomes, and timeframes, in collaboration with client and key stakeholders (e.g., providers, payors, employers)	7,647	3.27	1.13	82.28%	73.52%	P
5.	Consider both behavioral and nonbehavioral health issues and concerns when developing the case management plan of care	7,646	3.26	1.09	83.76%	75.16%	P

(*continues*)

TABLE 2
Activities—Mean, Standard Deviation, Importance Rating, and Frequency (*Continued*)

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
6.	Coordinate care with key providers (e.g., attending physician, specialist, primary care practitioner, therapist, authorized treating physician)	7,646	3.41	1.04	86.58%	77.21%	P
7.	Develop interventions that address barriers to goal achievement	7,645	3.28	1.08	84.33%	75.10%	P
8.	Educate client regarding care choices and resources	7,627	3.35	1.07	85.73%	76.97%	P
9.	Use evidence-based practice guidelines in the development of the case management plan	7,636	3.18	1.11	80.36%	72.37%	P
10.	Coordinate client's social services needs (e.g., housing, transportation, food/meals, financial)	7,646	2.92	1.25	71.79%	53.19%	P
11.	Counsel client on health condition and care interventions/options	7,641	3.15	1.16	80.03%	67.28%	P
12.	Engage client's active participation in the development of their short- and long-term health goals	7,641	3.13	1.19	79.41%	67.56%	P
13.	Consult with other professionals (e.g., medical, vocational, rehabilitation, life care planning)	7,648	3.16	1.05	79.96%	68.01%	P
14.	Establish working relationships with referral sources and multidisciplinary care team	7,647	3.36	0.99	85.64%	78.18%	P
15.	Develop goals that identify the client's health care and safety needs while considering the referral source requirements	7,647	3.17	1.13	80.71%	71.64%	P
16.	Advocate for clients (e.g., address health care needs, negotiate extracontractual benefits)	7,642	3.20	1.14	80.49%	65.68%	P
17.	Coordinate services for the client's safe transition along the continuum of care/health and human services	7,628	3.23	1.14	81.91%	69.27%	P
18.	Analyze the case management plan for cost-effectiveness including feasibility of implementation	7,630	2.91	1.19	71.68%	58.86%	P
19.	Document case management assessment findings and plan of care (e.g., goals, objectives, interventions, outcomes, timeframes)	7,632	3.30	1.13	83.73%	75.55%	P
20.	Communicate case management assessment findings and plan of care to client and key stakeholders (e.g., providers, payors, employers)	7,639	3.20	1.14	81.33%	71.72%	P
21.	Implement the case management plan	7,635	3.30	1.16	84.40%	76.13%	P
22.	Facilitate client's empowerment through the development of self-management skills	7,603	3.04	1.23	75.85%	62.39%	P
23.	Coordinate accommodations for persons with disabilities by adhering to Americans with Disability Act	7,635	2.79	1.33	68.25%	36.88%	P
24.	Research community resources applicable to the client's situation	7,635	3.03	1.18	75.09%	56.95%	P
25.	Coordinate community resources applicable to the client's situation	7,629	2.96	1.23	73.18%	53.84%	P
26.	Coordinate delivery of health care services (e.g., home health, durable medical equipment)	7,634	3.19	1.21	81.22%	65.15%	P
27.	Use cost-effective case management strategies	7,635	3.21	1.11	82.03%	72.61%	P
28.	Initiate referrals to service providers as identified in the case management plan	7,629	3.18	1.17	81.96%	68.60%	P
29.	Maintain ongoing communication with client and key stakeholders (e.g., providers, payors, employers)	7,633	3.33	1.08	85.01%	76.57%	P

(*continues*)

TABLE 2
Activities—Mean, Standard Deviation, Importance Rating, and Frequency (*Continued*)

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
30.	Communicate client's summary of care to providers (e.g., physician, case managers, social worker, nurse) at the time of transition to the next level of care	7,631	3.17	1.19	80.40%	66.00%	P
31.	Monitor client's progress in achieving the goals, objectives, and outcomes of the case management plan at specified timeframes (e.g., direct observation, interviews, record reviews)	7,636	3.22	1.16	81.89%	71.60%	P
32.	Evaluate health care services received (e.g., home health, durable medical equipment, community resources)	7,640	3.00	1.21	74.96%	59.60%	P
33.	Communicate client's progress in achieving the goals, objectives, and outcomes of the case management plan to the client and key stakeholders (e.g., providers, payors, employers)	7,620	3.08	1.20	78.10%	66.53%	P
34.	Document client's progress with the case management plan (e.g., goals, objectives, outcomes, necessary modifications)	7,622	3.19	1.18	81.84%	72.79%	P
35.	Modify plan to deliver health care services (e.g., home health, durable medical equipment, community resources) to meet client's changing needs and condition	7,621	3.13	1.22	80.15%	65.02%	P
36.	Protect client's privacy and confidentiality	7,629	3.87	0.54	97.71%	95.89%	P
37.	Adhere to ethical standards that govern case management practice and other professional licensure or certification	7,625	3.84	0.56	97.43%	95.96%	P
38.	Adhere to legal, regulatory, and accreditation standards that govern case management practice and professional licensure or certification	7,629	3.83	0.57	97.12%	95.43%	P
39.	Facilitate the completion of the client's transition of care summary	7,624	2.88	1.34	72.32%	57.46%	P
40.	Follow up on the client postepisode of care (e.g., hospitalization, clinic visit, telephonic triage call)	7,618	3.05	1.31	76.98%	59.51%	P
41.	Develop plan for the client's transition to the next level of care, provider, or setting	7,619	3.08	1.25	78.21%	62.47%	P
42.	Discuss with client and health care team potential costs of treatment options, including cost comparisons and alternative services	7,623	2.78	1.29	67.35%	48.15%	P
43.	Evaluate client's understanding of care instructions (e.g., verbalize, demonstrate, Teach Back)	7,625	3.24	1.21	82.66%	69.83%	P
44.	Clarify client's care instructions	7,607	3.20	1.20	81.92%	68.24%	P
45.	Reinforce care instructions given by involved providers	7,559	3.19	1.21	81.99%	68.69%	P
46.	Research alternate treatment programs (e.g., pain management clinic, home health agencies, community-based services/resources)	7,616	2.99	1.18	75.13%	56.90%	P
47.	Facilitate achievement of optimal wellness, functioning, or productivity (e.g., return to work, return to school, other activities)	7,622	3.03	1.28	75.94%	58.04%	P
48.	Document case management (e.g., notes) with accuracy and in a timely manner to comply with state, federal, and payor/contractual regulations	7,616	3.55	0.99	90.63%	85.13%	P
Theoretical domain: Psychosocial and economic issues							
1.	Assess client's language needs	7,624	3.30	1.14	83.59%	65.03%	P
2.	Coordinate language interpreter services	7,621	3.17	1.22	80.50%	38.22%	P
3.	Assess client's health literacy	7,502	3.23	1.13	82.26%	66.36%	P

(*continues*)

TABLE 2
Activities—Mean, Standard Deviation, Importance Rating, and Frequency (*Continued*)

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
4.	Assess client's social, educational, psychological, and financial/economic status (e.g., income, living situation, insurance, benefits, employment, health literacy)	7,620	3.32	1.08	84.62%	74.02%	P
5.	Assess client's social, emotional, and financial support systems (e.g., family, friends, significant others, community groups)	7,627	3.34	1.07	85.05%	75.70%	P
6.	Identify multicultural, spiritual, and religious factors that may affect the client's health status	7,620	3.09	1.16	77.87%	61.90%	P
7.	Incorporate the effects of the client's multicultural, spiritual, and religious factors in the development of the plan of care and service delivery	7,620	3.02	1.20	75.75%	55.72%	P
8.	Evaluate capability and availability of the client's caregiver to provide the needed services	7,618	3.26	1.16	83.18%	69.96%	P
9.	Assess respite needs of client's caregiver (e.g., fatigue, burnout)	7,620	2.82	1.33	70.56%	44.53%	P
10.	Coordinate resources that meet the respite needs of the client's caregiver	7,583	2.64	1.38	64.61%	32.22%	P
11.	Identify the potential need/eligibility for private- and public-sector funding sources for services (e.g., Medicaid, charitable funds, State Waiver Programs, Affordable Care Act subsidies, Veterans Administration benefits)	7,626	2.82	1.38	69.96%	45.55%	P
12.	Identify formal and informal community resources and support programs	7,623	2.90	1.26	71.43%	50.33%	P
13.	Refer clients to formal and informal community resources and support programs	7,612	2.85	1.27	70.28%	46.73%	P
14.	Educate client on private- and public-sector funding sources and limitations of services	7,608	2.69	1.34	65.58%	42.25%	P
15.	Facilitate client access to programs, services, and funding (e.g., SSI, SSDI, Medicare, Medicaid, Affordable Care Act subsidies, Veterans Administration benefits)	7,618	2.73	1.39	66.97%	39.51%	P
16.	Facilitate the completion of legal documents (e.g., advance directive, health care proxy, financial Power of Attorney, advance, guardianship)	7,620	2.59	1.47	63.33%	32.01%	P
17.	Assess the client's level of readiness for change and involvement in lifestyle behavior changes	7,614	2.98	1.25	74.17%	56.81%	P
18.	Use client engagement techniques (e.g., motivational interviewing, counseling, coaching, behavioral change)	7,588	2.97	1.27	73.52%	57.93%	P
Theoretical domain: Utilization management activities							
1.	Review documentation for determination of medical necessity and benefit coverage (e.g., coverage, exclusions, extra contractual provisions)	7,614	3.01	1.33	74.53%	61.24%	P
2.	Identify clients who would benefit from alternate levels of care (e.g., subacute, skilled nursing, homecare) applying specified eligibility criteria including availability of health insurance benefits for that level	7,615	2.95	1.36	73.04%	56.21%	P
3.	Discuss appropriateness of level of care with the health care team	7,614	3.09	1.24	77.61%	62.74%	P
4.	Educate health care team about utilization of resources in accordance with established criteria (e.g., clinical, financial) and regulatory requirements	7,608	2.87	1.33	70.96%	54.23%	P
5.	Obtain required preauthorization or notification of services based upon payor requirements	7,613	2.92	1.44	72.73%	52.97%	P

(*continues*)

TABLE 2
Activities—Mean, Standard Deviation, Importance Rating, and Frequency (*Continued*)

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
6.	Negotiate rates to optimize the utilization of available funding and/or benefits to meet the client's health care needs	7,604	2.35	1.53	56.61%	24.96%	F
7.	Incorporate client's health insurance benefits (e.g., covered treatments, carve outs) into the development of the case management plan	7,607	2.76	1.45	68.08%	51.50%	P
8.	Perform utilization management activities (e.g., authorization or denial for services, termination of benefits, precertification for services, concurrent/ retrospective review) using recognized criteria, guidelines, and benefit plan language	7,605	2.71	1.53	66.81%	47.34%	P
9.	Monitor utilization management activities (e.g., authorization or denial of services, termination of benefits, precertification for services, concurrent/ retrospective review) using recognized criteria, guidelines, and benefit plan language	7,614	2.81	1.45	69.60%	53.42%	P
10.	Identify actual and potential delays in service and care progression	7,621	3.06	1.25	77.05%	60.71%	P
11.	Mitigate identified delays in service and care progression	7,604	2.87	1.33	72.13%	49.29%	P
12.	Advocate for the provision of health care services in the least restrictive setting	7,607	2.91	1.32	72.83%	53.22%	P
13.	Educate clients regarding their rights to appeal service denials	7,605	2.88	1.32	71.73%	44.94%	P
14.	Perform service denial appeal (not certified/not authorized) or assist in the appeal process	7,601	2.37	1.55	57.31%	26.05%	F
15.	Collaborate with the physician advisor in mitigating service denials	7,582	2.48	1.54	60.31%	31.09%	F
Theoretical domain: Vocational and rehabilitation services							
1.	Arrange for vocational assessment and services	7,590	1.87	1.52	41.45%	15.60%	F
2.	Arrange for rehabilitation assessment and services	7,588	2.47	1.51	59.66%	38.43%	F
3.	Collaborate with health care providers to clarify restrictions and limitations related to client's physical or vocational functioning	7,586	2.58	1.49	62.91%	42.17%	P
4.	Identify the need for specialized services to facilitate achievement of optimal level of wellness or functioning (e.g., work hardening, ergonomics, therapies)	7,587	2.40	1.54	57.70%	35.86%	F
5.	Assess the need for environmental modifications to address accessibility barriers (e.g., worksite, home)	7,584	2.44	1.48	58.43%	31.44%	F
6.	Refer for job analysis to determine job modification and accommodation	7,581	1.87	1.60	43.48%	17.99%	F
7.	Perform job analysis to determine job modification and accommodation	7,573	1.69	1.61	39.55%	12.44%	F
8.	Recommend modifications and accommodations to training sites and employers	7,577	1.67	1.60	38.84%	12.91%	F
9.	Collaborate with legal representative, disability management company, or other agencies representing the rehabilitation client	7,575	1.84	1.61	42.86%	18.62%	F
10.	Recommend case management interventions or services based on workers' compensation or disability management treatment guidelines	7,571	1.99	1.66	47.30%	25.93%	F
11.	Facilitate implementation of the plan of care for achieving rehabilitation/vocational services	7,579	2.05	1.61	48.75%	26.97%	F
12.	Coordinate vocational and rehabilitation plans with client, employer, and other stakeholders	7,565	1.93	1.62	45.51%	22.50%	F

(*continues*)

TABLE 2
Activities—Mean, Standard Deviation, Importance Rating, and Frequency (*Continued*)

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
13.	Coordinate specialized rehabilitative services or assistive devices (e.g., prosthetics, text telephone device, teletypewriter, telecommunication device for the deaf, orientation and mobility services)	7,570	2.14	1.57	49.97%	18.63%	F
Theoretical domain: Outcomes evaluation and case closure							
1.	Collect client-related outcomes data (e.g., clinical, financial, utilization, quality, client experience)	7,580	2.59	1.43	62.34%	45.10%	P
2.	Collect health care organization/agency related outcomes data (e.g., clinical, financial, productivity, utilization, quality, client experience)	7,583	2.40	1.49	57.04%	38.07%	F
3.	Analyze client and health care organization/ agency related outcomes data	7,581	2.32	1.50	54.85%	33.87%	F
4.	Document client's response to case management interventions	7,576	2.96	1.31	74.51%	63.15%	P
5.	Evaluate the availability and timeliness of delivered treatments and services (e.g., variances, delays in care, avoidable days)	7,579	2.81	1.35	69.51%	54.26%	P
6.	Evaluate the quality of treatments, interventions, and services	7,579	2.90	1.30	72.23%	57.03%	P
7.	Evaluate the cost-effectiveness of treatments and services	7,564	2.65	1.40	64.86%	45.44%	P
8.	Evaluate the effectiveness of the case management plan (e.g., goals, objectives, interventions, outcomes, timeframes, cost-effectiveness)	7,579	2.98	1.30	74.81%	61.62%	P
9.	Evaluate actual client outcomes in relation to expected outcomes	7,575	2.86	1.33	71.05%	56.22%	P
10.	Coordinate referrals for potential quality of care and risk management issues, or client's complaints/grievances	7,575	2.70	1.37	66.01%	36.84%	P
11.	Refer appropriate cases for clinical peer review (e.g., physician review, quality review)	7,582	2.77	1.36	68.64%	39.40%	P
12.	Identify when case management services are no longer indicated for the client	7,579	2.88	1.36	73.65%	59.22%	P
13.	Discuss the need to conclude case management services with the client and stakeholders	7,579	2.68	1.44	67.25%	50.58%	P
14.	Conclude case management services	7,573	2.80	1.42	71.15%	57.44%	P
15.	Document case closure (e.g., rationale, discharge summary, transfer summary, cost savings)	7,578	2.88	1.42	73.05%	59.44%	P
16.	Prepare outcome reports in compliance with federal, state, and local regulatory requirements	7,570	2.17	1.62	52.62%	29.99%	F
17.	Generate reports about key outcome measures (e.g., clinical, financial, productivity, utilization, quality, client experience)	7,564	2.27	1.59	55.08%	32.46%	F

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F = fail; F1 = delivering case management services; F2 = accessing financial and community resources; F3 = delivering rehabilitation services; F4 = managing utilization of healthcare services; F5 = evaluating and measuring quality and outcomes; F5 = adhering to ethical, legal and practice standards; NA = not included in factor analysis because it was dismissed as unimportant based on the mean importance rating; P = pass.
[a]Sum of improtance ratings of 4 (*important*) and 5 (*very important*).
[b]Sum of frequency ratings of 4 (*often*) and 5 (*very often*).

Analysis of Findings by Participant Subgroups

The researchers analyzed the role and functions study data to determine how similar or different the perceptions of the various participants were relevant to their importance ratings of the essential activities and knowledge areas, using the IOA test statistic. As with prior analyses, if the subgroups' mean importance ratings were above the critical importance value (at or above 2.50), there was agreement that the content is important. If the subgroup ratings were below the critical level (<2.50), then the subgroups were in agreement that the content is considered less important. Any differences in mean importance ratings

TABLE 3
Knowledge Areas—Mean, Standard Deviation, Importance Rating, and Frequency

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
Theoretical domain: Case management concepts and strategies							
1.	Accreditation standards and requirements	7,412	3.18	1.15	78.68%	71.79%	P
2.	Adherence to care regimen	7,402	3.16	1.11	80.42%	76.94%	P
3.	Behavioral change theories and stages	7,392	2.60	1.30	59.46%	49.65%	P
4.	Case load calculation	7,385	2.37	1.47	54.39%	41.26%	F
5.	Case management models	7,382	2.41	1.35	53.45%	41.65%	F
6.	Case management process and tools	7,388	3.03	1.17	75.04%	69.37%	P
7.	Case recording and documentation	7,389	3.46	0.99	88.25%	84.55%	P
8.	Client activation	7,369	2.74	1.36	67.46%	60.08%	P
9.	Client empowerment	7,368	3.10	1.21	77.92%	70.20%	P
10.	Client engagement	7,378	3.25	1.14	82.76%	75.89%	P
11.	Conflict resolution strategies	7,372	2.99	1.17	74.42%	53.88%	P
12.	Cost containment principles	7,378	2.90	1.23	71.08%	57.86%	P
13.	Cost–benefit analysis	7,371	2.51	1.40	59.50%	38.66%	P
14.	Data interpretation and reporting	7,343	2.66	1.38	63.52%	48.64%	P
15.	Ethics related to care delivery (e.g., advocacy, experimental treatments and protocols, end of life, refusal of treatment/services)	7,380	3.24	1.14	81.17%	64.96%	P
16.	Ethics related to professional practice (e.g., code of conduct, veracity)	7,386	3.51	0.89	89.52%	79.76%	P
17.	Factors used to identify client's acuity or severity levels	7,381	3.04	1.19	76.02%	67.21%	P
18.	Goals and objectives of case management practice	7,376	3.24	1.08	82.12%	76.16%	P
19.	Health care and disability-related legislation (e.g., Americans with Disabilities Act, Occupational Safety and Health Administration regulations, Health Insurance Portability and Accountability Act)	7,266	3.03	1.20	74.26%	59.98%	P
20.	Health coaching	7,265	2.68	1.35	63.39%	50.81%	P
21.	Interpersonal communication (e.g., group dynamics, relationship building)	7,263	3.20	1.11	79.95%	73.56%	P
22.	Interview techniques	7,271	3.18	1.13	80.35%	74.28%	P
23.	Legal and regulatory requirements	7,263	3.35	0.95	84.50%	75.97%	P
24.	Management of clients with multiple chronic illnesses	7,270	3.31	1.10	84.04%	75.42%	P
25.	Negotiation techniques	7,257	2.65	1.31	62.53%	44.82%	P
26.	Privacy and confidentiality	7,269	3.81	0.57	96.97%	95.04%	P
27.	Program evaluation and research methods	7,248	2.44	1.37	55.22%	38.75%	F
28.	Quality and performance improvement concepts	7,265	2.96	1.18	71.82%	57.52%	P
29.	Quality indicators techniques and applications	7,257	2.75	1.27	64.86%	50.62%	P
30.	Risk management	7,246	2.77	1.28	65.59%	47.17%	P
31.	Self-care and well-being as a professional	7,194	3.33	0.99	84.82%	72.07%	P
32.	Sources of quality indicators (e.g., Centers for Medicare & Medicaid Services, Utilization Review Accreditation Commission, National Committee for Quality Assurance, National Quality Forum, Agency for Healthcare Research and Quality	7,261	3.04	1.22	74.27%	61.33%	P
33.	Standards of practice	7,267	3.49	0.85	89.05%	83.53%	P
34.	Transitions of care /transitional care	7,220	3.04	1.18	75.46%	63.80%	P
35.	Types of quality indicators (e.g., clinical, financial, productivity, utilization, quality, client experience)	7,238	2.98	1.16	73.00%	60.08%	P

(*continues*)

TABLE 3
Knowledge Areas—Mean, Standard Deviation, Importance Rating, and Frequency (*Continued*)

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
Theoretical domain: Health care management and delivery							
1.	Alternative care facilities (e.g., assisted living, group homes, residential treatment facilities)	7,168	2.69	1.38	63.49%	46.37%	P
2.	Complementary alternative medicine	7,156	1.86	1.33	33.90%	16.19%	F
3.	Continuum of care/continuum of health and human services	7,153	2.83	1.25	67.34%	54.95%	P
4.	Critical pathways, standards of care, practice guidelines, and treatment guidelines	7,171	3.08	1.14	76.36%	67.28%	P
5.	Health care analytics (e.g., health risk assessment, predictive modeling, Adjusted Clinical Group)	7,158	2.24	1.44	49.01%	34.73%	F
6.	Health care delivery systems	7,159	2.80	1.24	66.04%	55.43%	P
7.	Health care providers including behavioral health and community vendors	7,154	3.03	1.15	74.90%	62.18%	P
8.	Hospice, palliative, and end-of-life care	7,159	2.74	1.44	66.95%	44.71%	P
9.	Interdisciplinary care team	7,144	2.96	1.28	72.02%	60.33%	P
10.	Levels of care and care settings	7,133	2.98	1.23	72.69%	61.93%	P
11.	Management of acute and chronic illness and disability	7,135	3.18	1.14	80.22%	70.12%	P
12.	Meaningful use (e.g., electronic exchanges of summary of care, reporting specific cases to specialized client registries, structured electronic transmission of laboratory test results, use of electronic discharge prescriptions)	7,153	2.59	1.44	61.71%	49.96%	P
13.	Medication therapy management and reconciliation	7,155	3.01	1.30	74.70%	61.19%	P
14.	Models of care (e.g., patient centered medical home, accountable care organization, health home, special needs plan, chronic care model)	7,152	2.47	1.43	56.81%	41.42%	F
15.	Pay for performance/value-based purchasing	7,147	1.71	1.53	35.96%	20.69%	F
16.	Regional health collaboratives	7,128	1.84	1.48	37.78%	21.58%	F
17.	Regional health information exchange organizations	7,137	1.78	1.48	36.37%	20.44%	F
18.	Roles and functions of case managers in various settings	7,153	2.70	1.28	61.95%	47.70%	P
19.	Roles and functions of other providers in various settings	7,147	2.71	1.24	63.08%	49.82%	P
20.	Vocational and rehabilitation service delivery systems	7,127	2.29	1.41	50.85%	32.21%	F
Theoretical domain: Health care reimbursement							
1.	Affordable Care Act	7,150	2.52	1.44	58.08%	42.56%	P
2.	Coding methodologies (e.g., Diagnosis-related group, *Diagnostic and Statistical Manual of Mental Disorders*, *International Classification of Diseases*, Current Procedural Terminology)	7,144	2.54	1.39	58.06%	47.30%	P
3.	Financial resources (e.g., waiver programs, special needs trusts, viatical settlements)	7,150	2.14	1.51	47.57%	30.04%	F
4.	Insurance principles (e.g., health, disability, workers compensation, long-term care)	7,155	3.00	1.23	72.58%	60.40%	P
5.	Managed care concepts	7,145	2.93	1.24	70.83%	62.12%	P
6.	Military benefit programs (e.g., TRICARE, VA, CHAMPVA, TRICARE for Life)	7,130	2.02	1.52	44.47%	25.66%	F

(*continues*)

TABLE 3
Knowledge Areas—Mean, Standard Deviation, Importance Rating, and Frequency (*Continued*)

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
7.	Private benefit programs (e.g., pharmacy benefits management, indemnity, employer-sponsored health coverage, individual-purchased insurance, home care benefits, COBRA)	7,150	2.55	1.42	59.51%	44.82%	P
8.	Public benefit programs (e.g., SSI, SSDI, Medicare, Medicaid)	7,151	2.81	1.34	67.18%	54.01%	P
9.	Reimbursement and payment methodologies (e.g., bundled, case rate, prospective payment systems, value-based purchasing)	7,147	2.20	1.50	48.96%	33.70%	F
10.	Resources for the uninsured or underinsured	7,151	2.54	1.51	59.63%	42.34%	P
11.	Utilization management principles and guidelines	7,115	2.89	1.29	68.62%	57.98%	P
Theoretical domain: Rehabilitation and vocational concepts and strategies							
1.	Absence and productivity management	7,091	1.74	1.53	36.81%	24.04%	F
2.	Assistive devices (e.g., prosthetics, text telephone device, teletypewriter, telecommunication device for the deaf, orientation and mobility services)	7,096	2.24	1.41	48.41%	24.15%	F
3.	Ergonomics and assistive technologies	7,097	2.03	1.47	43.47%	21.64%	F
4.	Functional capacity evaluation	7,076	2.08	1.58	47.44%	30.10%	F
5.	Job analysis, job modification, and job accommodation	7,089	1.83	1.61	41.09%	24.07%	F
6.	Job development and placement	7,087	1.57	1.56	34.25%	15.44%	F
7.	Life care planning	7,084	1.81	1.55	39.17%	18.49%	F
8.	Occupational information resources (e.g., O*NET)	7,081	1.40	1.49	28.29%	12.44%	F
9.	Physical functioning and behavioral health assessment	7,098	2.48	1.45	57.88%	43.47%	F
10.	Rehabilitation post an injury, including work-related	7,090	2.33	1.57	54.63%	38.89%	F
11.	Rehabilitation posthospitalization or acute health condition	7,094	2.69	1.42	65.70%	50.33%	P
12.	Vocational aspects of chronic illness and disability	7,088	1.95	1.52	42.73%	23.54%	F
13.	Vocational assessment	7,085	1.62	1.54	34.72%	14.52%	F
14.	Work adjustment, transitional employment, and work hardening	7,074	1.77	1.63	40.23%	22.41%	F
Theoretical domain: Psychosocial and support systems							
1.	Abuse and neglect (e.g., emotional, psychological, physical, financial)	7,099	3.02	1.24	73.48%	46.39%	P
2.	Behavioral health concepts (e.g., dual diagnoses; substance use, abuse, and addiction)	7,100	3.04	1.16	74.69%	52.75%	P
3.	Client self-care management (e.g., self-advocacy, self-directed care, informed decision making, shared decision making, health education)	7,097	3.09	1.17	76.91%	65.40%	P
4.	Community resources (e.g., elder care services, fraternal/religious organizations, government programs, meal delivery services, pharmacy assistance programs)	7,097	2.90	1.31	70.96%	54.02%	P
5.	Crisis intervention strategies	7,088	2.67	1.34	63.01%	28.58%	P
6.	End-of-life issues (e.g., hospice, palliative care, withdrawal of care, do not resuscitate)	7,099	2.71	1.48	65.88%	40.87%	P
7.	Family dynamics	7,088	3.07	1.17	75.62%	59.95%	P
8.	Health literacy assessment	7,035	2.81	1.28	67.46%	50.89%	P
9.	Multicultural, spiritual, and religious factors that may affect the client's health status	7,091	2.95	1.18	71.75%	52.56%	P
10.	Psychological and neuropsychological assessment	7,089	2.91	1.21	70.88%	51.03%	P

(*continues*)

TABLE 3
Knowledge Areas—Mean, Standard Deviation, Importance Rating, and Frequency (*Continued*)

		No. of Respondents	Mean Importance	Standard Deviation	% Importance[a]	% Frequency[b]	Pass/ Fail Test
11.	Psychosocial aspects of chronic illness and disability	7,084	3.02	1.16	74.93%	58.54%	P
12.	Spirituality as it relates to health behavior	7,075	2.65	1.27	61.57%	38.97%	P
13.	support programs (e.g., support groups, pastoral counseling, disease-based organizations, bereavement counseling)	7,093	2.66	1.31	62.50%	39.25%	P
14.	Wellness and illness prevention programs, concepts, and strategies	7,067	2.82	1.27	67.61%	48.29%	P

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F = fail; F1 = care delivery and reimbursement methods; F2 = psychosocial concepts and support systems; F3 = rehabilitation concepts and strategies; F4 = quality and outcomes evaluation and measurement; F5 = ethical, legal and practice standards; NA = not included in factor analysis because it was dismissed as unimportant based on the mean importance rating; P = pass; SSDI = social security disability insurance; SSI = supplemental security income.
[a]Sum of improtance ratings of 4 (*important*) and 5 (*very important*).
[b]Sum of frequency ratings of 4 (*often*) and 5 (*very often*).

among subgroups indicated that there was disagreement as to whether the content is important. The IOA computed score usually range from 0 to 1, with 1 being perfect agreement and 0 being perfect disagreement. The researchers evaluated the IOA results among the participant subgroups, applying the following criteria:

- Perfect agreement when IOA = 1.00
- High agreement when IOA ≥0.80 but <1.00
- Moderate agreement when IOA <0.80 and ≥0.70
- Disagreement when IOA <0.70

The IOA ranges for essential activities (see Table 4) by participant subgroups were as follows:

- Job title: 0.20–0.97
- Percentage of time in direct case management services: 0.22–1.00
- Work/practice setting: 0.12–0.96
- Years of experience in case management: 0.84–0.99
- Requirement of work on weekends: 0.95–0.97
- Professional background/discipline: 0.63–0.97
- Presence of CCM certification: 0.93
- Geographic region: 0.93–1.00
- Highest academic degree achieved: 0.93–0.99
- Age: 0.84–1.00
- Gender: 0.95
- Ethnicity: 0.92–1.00

The IOA ranges for knowledge areas (to be discussed in Part 2) by participant subgroups were as follows:

- Job title: 0.34–0.98
- Percentage of time in direct case management services: 0.46–0.99
- Work/practice setting: 0.36–0.97
- Years of experience in case management: 0.67–1.00
- Requirement of work on weekends: 0.87–0.91
- Professional background/discipline: 0.50–0.90
- Presence of CCM certification: 0.89
- Geographic region: 0.85–0.98
- Highest academic degree achieved: 0.85–0.97
- Age: 0.84–0.98
- Gender: 0.91
- Ethnicity: 0.86–0.99

The IOA analyses showed high agreements among the subgroups for both the essential activities and knowledge areas, except for job titles, practice settings, professional background, years of experience (knowledge-related only), and percentage of time in direct case management. These subgroups demonstrated some varied degrees of agreement and disagreement.

For the essential activities analysis using job title subgroups, when taking the case/care manager as the central job title subgroup and comparing it against the other 15 job title subgroups (see Table 4), there was strong agreement of ratings between the care/case manager and disease manager, administrator/director, social worker, health coach, clinical nurse, workers' compensation, transitional care, care/case coordinator, and director subgroups. However, disagreements existed with consultant, admission liaison, disability manager, insurance benefit manager, case management educator, and quality specialist titles.

Concerning the primary work/practice settings, among the 15 subgroups, all IOAs in the essential activities analyses were higher than 0.75 with the majority IOAs higher than 0.80 except for the liability and disability insurer subgroup, which demonstrated the most disagreements with the rest of the subgroups. The IOAs for liability and disability insurer subgroup compared with the others ranged between 0.12 and 0.32. This subgroup consisted of 99 participants, slightly more than 1% of the total sample. This observation was consistent in knowledge areas in which IOAs for the liability and disability insurer ranged between 0.38 and 0.53 compared with the remaining

TABLE 4
Index of Agreement in Essential Activities Among Various Subgroups (SG)

Job title Subgroup (*N* = sample size)	SG 1	SG 2	SG 3	SG 4	SG 5	SG 6	SG 7	SG 8	SG 9	SG 10	SG 11	SG 12	SG 13	SG 14	SG 15	SG 16
SG 1: Care/case manager/ discharge planner/ intake coordinator (*N* = 4219)	–	0.84	0.94	0.48	0.33	0.79	0.51	0.40	0.82	0.78	0.70	0.95	0.57	0.20	0.97	0.94
SG 2: Disease manager (*N* = 61)	–	–	0.80	0.62	0.38	0.70	0.61	0.37	0.90	0.94	0.86	0.84	0.71	0.33	0.87	0.84
SG 3: Administrator/director of case management/care management (*N* = 502)	–	–	–	0.44	0.29	0.75	0.46	0.38	0.78	0.74	0.66	0.96	0.53	0.22	0.93	0.96
SG 4: Consultant (*N* = 203)	–	–	–	–	0.72	0.53	0.71	0.63	0.59	0.66	0.73	0.48	0.80	0.66	0.51	0.48
SG 5: Admissions liaison/ bill auditor (*N* = 50)	–	–	–	–	–	0.34	0.50	0.82	0.44	0.43	0.48	0.33	0.65	0.78	0.36	0.33
SG 6: Workers' compensation specialist (*N* = 238)	–	–	–	–	–	–	0.70	0.37	0.68	0.67	0.70	0.76	0.60	0.22	0.76	0.73
SG 7: Disability specialist/ rehabilitation counselor/ vocational evaluator/ work adjustment specialist (*N* = 82)	–	–	–	–	–	–	–	0.41	0.58	0.65	0.65	0.46	0.62	0.45	0.48	0.45
SG 8: Insurance benefits manager/utilization reviewer/manager (*N* = 358)	–	–	–	–	–	–	–	–	0.42	0.39	0.42	0.42	0.58	0.74	0.43	0.40
SG 9: Social worker (*N* = 172)	–	–	–	–	–	–	–	–	–	0.88	0.85	0.82	0.70	0.30	0.86	0.82
SG 10: Health coach/health navigator (*N* = 56)	–	–	–	–	–	–	–	–	–	–	0.87	0.78	0.75	0.37	0.82	0.78
SG 11: Staff/clinical nurse (*N* = 142)	–	–	–	–	–	–	–	–	–	–	–	0.70	0.80	0.42	0.74	0.70
SG 12: Transitional care nurse/transition of care nurse (*N* = 43)	–	–	–	–	–	–	–	–	–	–	–	–	0.57	0.22	0.97	0.95
S 13: Case management educator (*N* = 52)	–	–	–	–	–	–	–	–	–	–	–	–	–	0.58	0.60	0.57
SG 14: Quality specialist (*N* = 73)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.23	0.26
SG 15: Care/case coordinator (*N* = 421)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.97
SG 16: Director, other/manager/supervisor (*N* = 824)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
Primary work/practice setting																
SG 1: Ambulatory/outpatient care/mental health center (*N* = 410)	–	0.75	0.78	0.86	0.83	0.83	0.86	0.87	0.12	0.77	0.82	0.86	0.81	0.77	0.75	
SG 2: Disease management agency/program (*N* = 138)	–	–	0.90	0.90	0.89	0.82	0.82	0.80	0.32	0.82	0.90	0.84	0.94	0.84	0.92	
SG 3: Government agency/military treatment facility/Veterans health administration agency (*N* = 346)	–	–	–	0.91	0.90	0.86	0.88	0.85	0.30	0.84	0.91	0.87	0.93	0.84	0.87	
SG 4: Health insurance company/reinsurance/telephonic (*N* = 2157)	–	–	–	–	0.96	0.91	0.84	0.86	0.23	0.91	0.95	0.93	0.94	0.88	0.88	
SG 5: Home care agency (*N* = 169)	–	–	–	–	–	0.90	0.83	0.85	0.24	0.87	0.94	0.92	0.94	0.90	0.87	
SG 6: Hospital (*N* = 1647)	–	–	–	–	–	–	0.80	0.83	0.27	0.84	0.90	0.95	0.86	0.90	0.79	
SG 7: Independent care / case management (*N* = 538)	–	–	–	–	–	–	–	0.95	0.25	0.78	0.86	0.82	0.86	0.75	0.82	
SG 8: Independent rehabilitation company/insurance affiliate/rehabilitation facility acute/subacute (*N* = 293)	–	–	–	–	–	–	–	–	0.23	0.82	0.86	0.85	0.84	0.78	0.78	
SG 9: Liability insurer/life/disability insurer (*N* = 99)	–	–	–	–	–	–	–	–	–	0.32	0.26	0.24	0.26	0.29	0.32	

(*continues*)

TABLE 4
Index of Agreement in Essential Activities Among Various Subgroups (SG) (*Continued*)

SG 10: Third party administrator (*N* = 194)	–	–	–	–	–	–	–	–	–	–	0.88	0.84	0.86	0.79	0.82
SG 11: Hospice (*N* = 28)	–	–	–	–	–	–	–	–	–	–	–	0.91	0.94	0.86	0.86
SG 12: Long-term acute care/adult daycare/community residential program (*N* = 84)	–	–	–	–	–	–	–	–	–	–	–	–	0.86	0.90	0.81
SG 13: Medical home/health home (*N* = 67)	–	–	–	–	–	–	–	–	–	–	–	–	–	0.85	0.91
SG 14: Skilled nursing facility/long-term care facility (*N* = 76)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	0.79
SG 15: Wellness organization (*N* = 34)	–	–	–	–	–	–	–	–	–	–	–	–	–	–	–
% of time spent in provision of direct case management services															
SG 1: 0% (not involved in direct case management services at all) (*N* = 903)	–	0.30	0.29	0.24	0.22	0.22	0.23	0.23	0.23	0.23	0.22				
SG 2: 1%–10% (*N* = 796)	–	–	0.94	0.90	0.88	0.87	0.89	0.87	0.87	0.87	0.87				
SG 3: 11%–20% (*N* = 406)	–	–	–	0.94	0.92	0.91	0.93	0.91	0.91	0.91	0.91				
SG 4: 21%–30% (*N* = 409)	–	–	–	–	0.98	0.98	0.99	0.98	0.98	0.98	0.98				
SG 5: 31%–40% (*N* = 313)	–	–	–	–	–	0.99	0.99	0.99	0.99	0.99	0.99				
SG 6: 41%–50% (*N* = 441)	–	–	–	–	–	–	0.98	0.98	0.98	0.98	1.00				
SG 7: 51%–60% (*N* = 483)	–	–	–	–	–	–	–	0.98	0.98	0.98	0.98				
SG 8: 61%–70% (*N* = 488)	–	–	–	–	–	–	–	–	1.00	1.00	0.98				
SG 9: 71%–80% (*N* = 810)	–	–	–	–	–	–	–	–	–	1.00	0.98				
SG 10: 81%–90% (*N* = 833)	–	–	–	–	–	–	–	–	–	–	0.98				
SG 11: 91%–100% (*N* = 1785)	–	–	–	–	–	–	–	–	–	–	–				
Years of experience in case management															
SG 1: Less than 1 (*N* = 36)	–	0.94	0.93	0.94	0.93	0.93	0.91	0.92	0.84	0.88					
SG 2: 1–2 (*N* = 362)	–	–	0.97	0.96	0.97	0.98	0.97	0.98	0.90	0.94					
SG 3: 3–5 (*N* = 1060)	–	–	–	0.99	0.98	0.98	0.97	0.96	0.88	0.92					
SG 4: 6–10 (*N* = 1758)	–	–	–	–	0.99	0.98	0.96	0.95	0.87	0.91					
SG 5: 11–15 (*N* = 1614)	–	–	–	–	–	0.98	0.97	0.96	0.88	0.92					
SG 6: 16–20 (*N* = 1326)	–	–	–	–	–	–	0.97	0.98	0.90	0.94					
SG 7: 21–25 (*N* = 834)	–	–	–	–	–	–	–	0.99	0.91	0.94					
SG 8: 26–30 (*N* = 413)	–	–	–	–	–	–	–	–	0.92	0.94					
SG 9: 31–35 (*N* = 196)	–	–	–	–	–	–	–	–	–	0.93					
SG 10: 36 or more (*N* = 69)	–	–	–	–	–	–	–	–	–	–					

(*continues*)

TABLE 4
Index of Agreement in Essential Activities Among Various Subgroups (SG) (*Continued*)

Professional background / discipline									
SG 1: Licensed/Clinical/ Masters Social Worker (*N* = 447)	–	0.94	0.91	0.66					
SG 2: Licensed Professional Clinical Counselor/Licensed Professional Counselor (*N* = 87)	–	–	0.97	0.66					
SG 3: Registered Nurse (*N* = 6772)	–	–	–	0.63					
SG 4: Occupational Therapist Registered/Disability Manager/ Vocational Rehabilitation Counselor/ Specialist (*N* = 200)	–	–	–	–					
Employer requires case managers work on weekend									
SG 1: Yes (*N* = 2871)	–	0.95	0.97						
SG 2: No (*N* = 3765)	–	–	0.95						
SG 3: On Call Only (*N* = 1031)	–	–	–						
CCM certification status									
SG 1: No (*N* = 844)	–	0.93							
SG 2: Yes (*N* = 6824)	–	–							
Geographical regional									
SG 1: New England (*N* = 484)	–	0.98	0.98	0.93	0.97	0.96	0.97	0.98	0.98
SG 2: Middle Atlantic (*N* = 1151)	–	–	1.00	0.94	0.99	0.98	0.96	0.98	1.00
SG 3: East North Central (*N* = 1218)	–	–	–	0.94	0.99	0.98	0.96	0.98	1.00
SG 4: West North Central (*N* = 437)	–	–	–	–	0.93	0.94	0.90	0.92	0.94
SG 5: South Atlantic (*N* = 1700)	–	–	–	–	–	0.98	0.97	0.99	0.99
SG 6: East South Central (*N* = 559)	–	–	–	–	–	–	0.94	0.97	0.98
SG 7: West South Central (*N* = 935)	–	–	–	–	–	–	–	0.98	0.96
SG 8: Mountain (*N* = 483)	–	–	–	–	–	–	–	–	0.98
SG 9: Pacific (*N* = 692)	–	–	–	–	–	–	–	–	–
Highest educational degree									
SG 1: Associate's Degree (*N* = 1590)	–	0.99	0.99	0.98	0.94				
SG 2: Nursing Diploma (*N* = 689)	–	–	0.98	0.98	0.94				
SG 3: Bachelor's Degree (*N* = 3405)	–	–	–	0.98	0.93				
SG 4: Master's Degree (*N* = 1900)	–	–	–	–	0.94				

(*continues*)

TABLE 4
Index of Agreement in Essential Activities Among Various Subgroups (SG) (*Continued*)

SG 5: Doctoral Degree (*N* = 84)	–	–	–	–	–					
Age (years)										
SG 1: 30 or Younger (*N* = 94)	–	0.95	0.91	0.92	0.92	0.93	0.92	0.91	0.92	0.84
SG 2: 31–35 (*N* = 244)	–	–	0.96	0.97	0.97	0.98	0.97	0.94	0.94	0.84
SG 3: 36–40 (*N* = 431)	–	–	–	0.99	0.99	0.98	0.99	0.97	0.94	0.85
SG 4: 41–45 (*N* = 786)	–	–	–	–	1.00	0.99	1.00	0.98	0.95	0.86
SG 5: 46–50 (*N* = 1052)	–	–	–	–	–	0.99	1.00	0.98	0.95	0.86
SG 6: 51–55 (*N* = 1701)	–	–	–	–	–	–	0.99	0.97	0.94	0.85
SG 7: 56–60 (*N* = 1890)	–	–	–	–	–	–	–	0.98	0.95	0.86
SG 8: 61–65 (*N* = 1097)	–	–	–	–	–	–	–	–	0.98	0.88
SG 9: 66–70 (*N* = 292)	–	–	–	–	–	–	–	–	–	0.90
SG 10: Older than 70 (*N* = 68)	–	–	–	–	–	–	–	–	–	–
Gender										
SG 1: Female (*N* = 7251)	–	0.95								
SG 2: Male (*N* = 327)	–	–								
Ethnicity										
SG 1: American Indian or Alaska Native (*N* = 41)	–	0.97	0.98	0.97	0.98	0.95				
SG 2: Asian (*N* = 214)	–	–	0.98	1.00	0.99	0.92				
SG 3: Black or African-American (*N* = 648)	–	–	–	0.98	0.98	0.94				
SG 4: Hispanic or Latino (*N* = 245)	–	–	–	–	0.99	0.92				
SG 5: Two or more ethnicities or multiethnic (*N* = 108)	–	–	–	–	–	0.93				
SG 6: White - Non-Hispanic (*N* = 6148)	–	–	–	–	–	–				

SG: Subgroup

subgroups that were consistently higher than 0.71, with the majority of the IOAs higher than 0.80. Most of the IOAs in the 0.71–0.79 range were those of the wellness organization subgroup consisting of 36 participants.

Upon careful examination of the professional background subgroups, the disagreements were prominent in the subgroup with rehabilitation backgrounds (i.e., physical therapy, disability manager, and vocational rehabilitation). Indexes of agreement ranged between 0.63 and 0.66 for essential activities and between 0.50 and 0.57 for knowledge areas in this subgroup. When compared with the IOAs of the other three subgroups, IOAs of essential activities ranged between 0.91 and 0.97 while those for knowledge areas ranged between 0.89 and 0.90. This was not a surprise, considering that most of the below-acceptable mean importance ratings were in the vocational and rehabilitation domains of activities and knowledge.

For percentage of time spent in provision of direct case management services, the subgroup that demonstrated disagreement based on the IOA test was the no (or 0%) direct involvement subgroup. Indices of agreement for essential activities for this group ranged between 0.22 and 0.30, and between 0.46 and 0.61 for the knowledge area. Interestingly, for the knowledge areas, eight IOAs were greater than 0.50, implying a 50–50 agreement/disagreement. This demonstrates that despite the lack of involvement in provision of direct case management services, this subgroup still agreed 50% of the time with the other subgroups on what knowledge areas were important for the practice. Indexes of agreement for the other subgroups ranged between 0.82 and 0.99 for essential activities and 0.83 and 1.00 for knowledge areas demonstrating acceptable to perfect agreement.

Subgroup analyses based on years of experience demonstrated acceptable to perfect IOAs in both the essential activities (0.84–0.99) and knowledge areas (0.67–1.00), except for the subgroup of less than 1 year of experience. This subgroup had an IOA of 0.67 in knowledge areas when compared against the subgroup with 1–2 years of experience.

Comprehensiveness of the Case Manager Role and Function Study Instrument

The researchers asked the study participants to indicate at the end of each of the essential activity and knowledge domain sections of the study instrument how well the statements reflected important case management practice in the domain's specific focus area. Participants used a 5-point rating scale (1 = *poorly representative*, 5 = *very well representative*).

For each essential activity or knowledge domain, at least 98% of the participants rated the content as "adequately," "well," or "very well" in covering the essential activity or knowledge domain area. In addition, the comprehensiveness of the essential activity domains ranged from 4.16 to 4.37 and the knowledge domains from 4.11 to 4.23, both indicating well to very well representation. These favorable results indicated that the construct and content of the study instrument were comprehensive enough and therefore appropriate to describe the case manager's role and function from the perspective of those currently in actual practice.

After rating the content coverage of each essential activity or knowledge domain, the survey participants had the opportunity to write in (free text) any essential activity or knowledge statements that they believed were missing from the delineation. Upon review of these responses by researchers and subject-matter experts on the test specifications committee, it was found that they were either located in other essential activity or knowledge domains already part of the delineation, covered as a subset of another essential activity or knowledge statement, or were deemed unnecessary to include.

Conclusion

The role and function study revealed the profile of a case manager: someone who holds the title care/case manager (54%), is white (80%), female (95%), over 55 years of age (44%), spends more than 60% of her time in direct case management care provision (51%), works in either a health insurance plan or in a hospital (52%), has worked as a case manager for more than 10 years (58%), is a registered professional nurse (89%), holds a bachelor's degree (44.5%) and the CCM credential (89%), learned the case manager's role on-the-job (89%), and practices in South Atlantic region (22%) or in the State of Texas (15.5%). The study also answered the research questions 1 and 2. It identified what activities and knowledge areas are current and common practice in case management. Part 2 will answer research question 3 and the activity and knowledge domains based on case management practice.

As case management professionals, who may be known by various titles, gain increased visibility and importance they must possess the requisite knowledge and competency in the essential activities of the profession. The 2014 role and function study has identified and evaluated these requirements through a rigorous, scientifically based, large national survey and practice analysis. Research findings, as will be discussed in Part 2, are also used to inform the content and composition of the CCM certification examination, based on new essential activities domains and new knowledge domains identified via the 2014 role and function survey and analysis.

Part 2 will be published in the January–February 2016 issue of Professional Case Management.

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