# New and Emerging Occupations in the 2000 Occupational Employment Survey

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The Occupational Employment Statistics (OES) survey conducted by the U.S. Bureau of Labor Statistics (BLS) is an important source of information about new and emerging occupations. Jobseekers, curriculum planners, and students are among those interested in knowing where the future job opportunities are going to be. Labor market analysts at the national, State and local levels estimate current employment for occupations and also project future employment for occupations, as well as openings due to the need to replace workers currently in an occupation. The process for developing the current and future employment for an occupation is systematic—starting with collecting information on the current workforce and concluding with analysis leading to projections of this employment. In addition to measuring employment for existing occupations, many of the aforementioned consumers of data also want information on new occupations.

## Background

The identification of new occupations is problematic. By the time that one can conclusively confirm that there indeed is a new occupation in the workforce, the occupation is often no longer new. Complicating the process is the distinction between an occupation and a job title. An occupation is a broader concept that generally includes numerous job titles. When a new title emerges in the workforce, it usually relates to activities that fall under the definition of an already existing occupation. Conversely, the occupation title sometimes stays the same, but the core activities that define the occupation change. In the former case there is not a new occupation. In the latter case, a determination must be made as to whether a new occupation has arisen. These situations describe most of what occurs in the attempt to determine whether there is a new occupation. Occasionally, a new occupation appears that has a new title and clearly includes duties that do not fall within the definition of any existing occupation. (Typically, these new occupations are coded into one of the residual classifications of the Standard Occupational Classification. See appendix A.) In addition to the above, some occupations, although not new, are emerging in industries in which they were not previously found.

## Methodology

The observations in this report were obtained from establishments responding to the OES survey. This survey is conducted by the State Employment Security Agencies in cooperation with BLS. The responding establishment is initially provided with a limited list of occupations and their definitions. Establishment respondents are asked to indicate on the survey questionnaire how many workers they have in these occupations, by specific wage intervals. They are further asked to enter the occupation title and definition for any worker not covered by the provided occupations and definitions.

Labor market analysts in the State agency take the respondent entries for occupations not included in the survey form and determine the occupation classification in which the associated data should be placed. The occupation classification structure used in the OES survey is the 2000 Standard Occupational Classification (SOC) system. (See appendix A for a description of the SOC system.) Entries that cannot be assigned to a specific detailed occupation in the SOC are usually assigned to 'all other' categories in some of the occupational divisions. These entries form a potential pool for identifying new occupations.

Sometimes, the respondent entry is such that the decision as to which occupation it relates to is not clear. In such cases, the State agency analyst tries to determine whether the entry falls within the core definition for any occupation existing in the SOC. If the State analyst determines that the entry does not appear to relate to any occupation in the SOC, including the 'all other' categories, he or she may opt to seek assistance from a BLS coding expert. These inquiries form another potential pool for identifying new occupations.

The information in this report was obtained from the 2000 OES survey. States forwarded the relevant survey entries dealing with potentially new occupations to BLS for review. At BLS, the information submitted by all States is reviewed and grouped by potential occupation. There is a great deal of judgment that must be exercised at every stage of this process. As a result, there are no corresponding employ-

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Chart 1. **New and emerging occupations by establishment employment size, 2000**

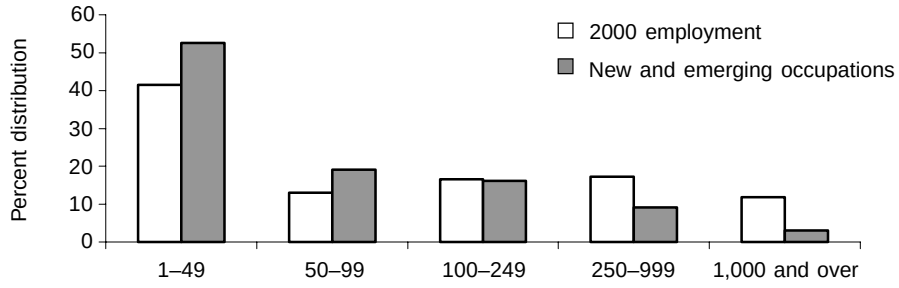
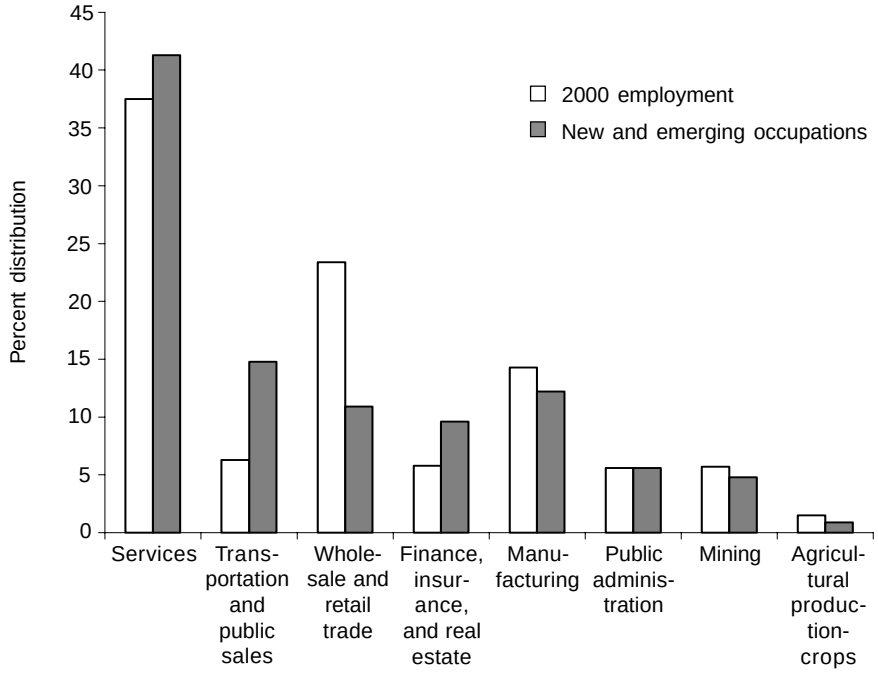



Chart 2. **New and emerging occupations by industry, 2000**




ment estimates for these occupations. Nonetheless, the information provided should be useful in the overall effort to identify new occupations.

### Patterns of new and emerging occupations

The 230 selections of potential new and emerging (N&E) occupations were analyzed as a group with respect to a variety of distributions. These are establishment-size, industry, wage, regional, and SOC classification distributions.

*Establishment size*. Chart 1 shows that more than 50 percent of the N&E occupations were reported by establishment units having fewer than 50 employees. This compares with about 40 percent of the employed workforce being in establishments with fewer than 50 employees. It appears that small firms have an edge in the creation of N&E occupations. These surveyed units could have been either small firms or special operating units within larger firms. The smallest percentage of N&E occupations was reported by firms with more than 1,000 employees.

*Industry*. New and emerging occupations arise in a number of industries. More than 40 percent arise in services. This dominant major group consists of several sectors, including health, social services, legal assistance, and education, as well as personal, business, and amusement and recreation

Chart 3. **Relative wage distribution of new and emerging occupations, 2000**

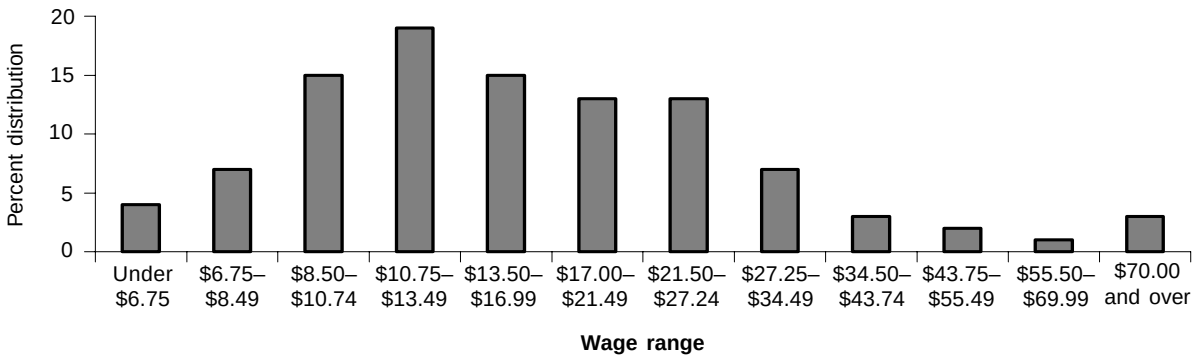
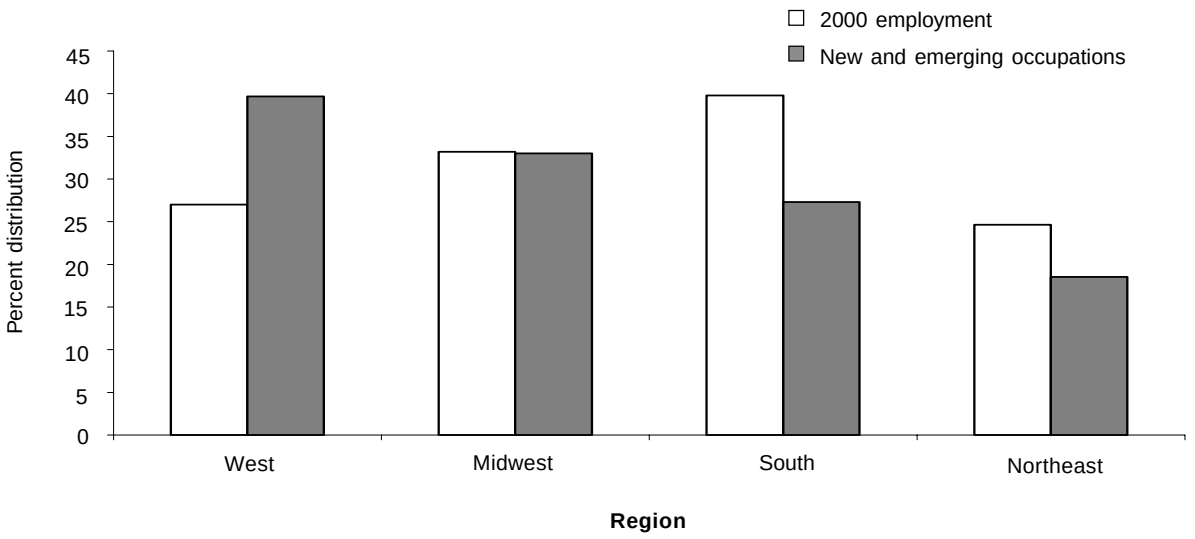



Chart 4. **Regional comparisons of new and emerging occupations, 2000**



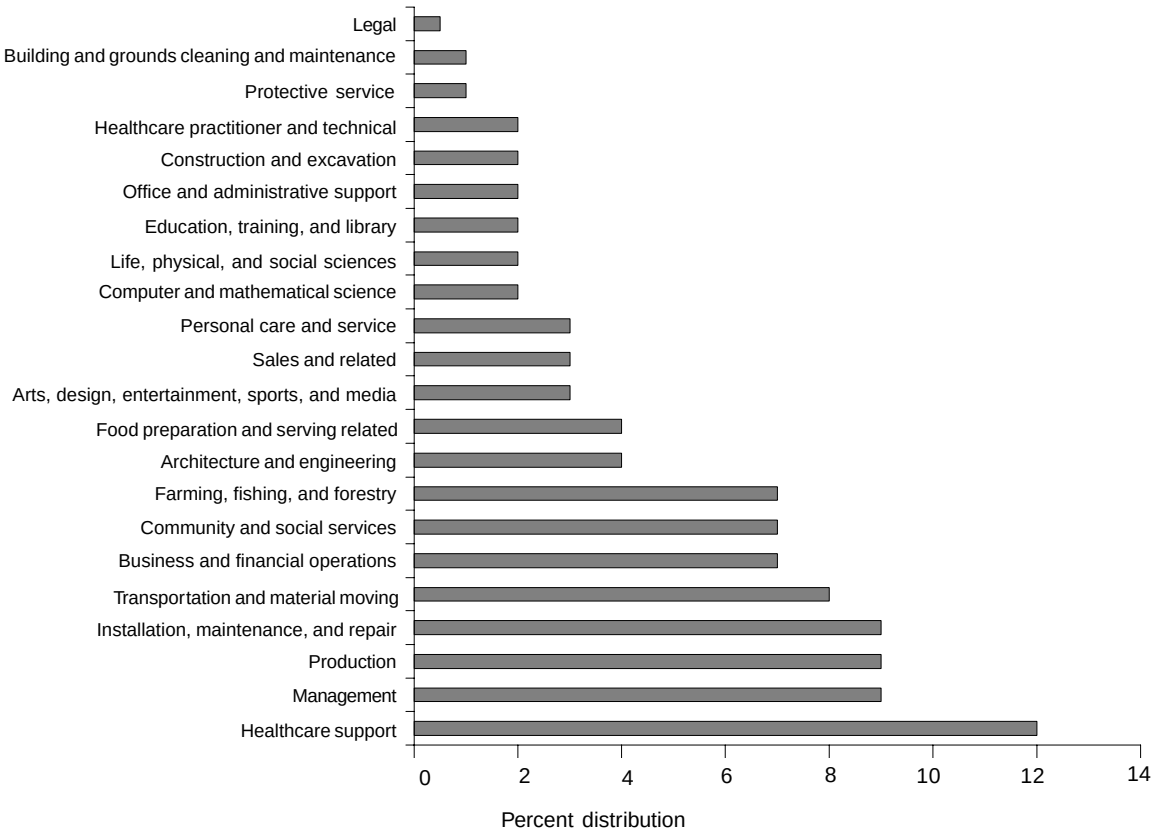

services. Within manufacturing, the durable goods sector is the primary source of N&E occupations. As indicated in chart 2, a variety of other industries account for the remaining occupations.

Almost one-half of the new and emerging occupations are found in the group of wage ranges from $8.50 to $16.99. Most of the remaining occupations are found in ranges that start at $17 and higher. The number of N&E jobs in the highest wage category reflects new positions for emergency medical physicians at a number of hospitals.

*Region*. While the chart 4 suggests that some regions may account for larger percentages of N&E occupations, no one State dominates in this regard. The number of new and emerging occupations is relatively high in Western States, proportional in the Central States, and low in Southern and Northeastern States when compared with total employment in each region.[1]

[1] The following States and areas constitute the regions for which data are presented in chart 4: **Northeast**—Connecticut, Delaware, District of Columbia, Maine, Massachusetts, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; **South**—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; **Midwest**—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; and **West**—Alaska, Arizona, California, Colorado, Guam, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

Chart 5. **New and emerging occupations by classification, 2000**




*SOC classification.* From an occupational classification perspective, the pattern of N&E occupations consists of a complex distribution that cuts across previously noted industry patterns. Study and experience show that, within industry classifications, many positions fall into occupational patterns that cut across industry lines. For example, the healthcare industry obviously requires healthcare support workers, but it also needs managers; installation, maintenence, and repair personnel; transportation workers; and personnel to staff business and financial operations. These occupations, in turn, are common to many other industries. Further detail on these occupations is presented in the next section.

## Developments in selected occupational groups

This section highlights and briefly discusses specific occupations flagged as new or emerging, based on the results of the 2000 OES survey round.

*Occupations in the field of information technology*

- GIS project managers
- GIS analysts—map production
- GIS analysts—land use

The pivotal role of visual information in land use decisionmaking at the local government level continues to generate emerging Geographical Information System (GIS) occupations. Local government infrastructure investments and land-use regulations require systemic development plans and other land use data in visual form. Among other uses, GIS information and models aid in discussions and negotiations between local governments and various private entities, including developers.

***Manufacturing processes.***

- Senior engineers—operations due diligence
- Quality control crew leaders—production line

The concept of "due diligence" typically refers to a profound review of financial and accounting documents in the acquisition of a firm or in the process of investing in a firm. The concept also applies to the engineering and production activities, for which functional plans and systems may assume equal importance with the financial picture of a firm. Industry adoption of the International Standards Organization (ISO) 9000 procedures is closely related to the creation of a variety of management and technical positions that cer-

tify the efficacy of the engineering and production functions. Positions intended to certify manufacturing standards and quality production through use of well-documented procedures and processes continue to emerge.

***Healthcare.***

- Credentialing positions
- Eligibility, necessity, and utilization reviewers
- Selected medical specialties
- Adjuvant therapists

In the health field, N&E occupations have addressed concerns with legal liabilities, responses to advancing medical technologies, administrative adjustments to rising costs, and alternative medical approaches. As a consequence, increased attention has been directed toward establishing and updating the credentials and certifications of medical personnel. New technologies and related certifications have created or changed work content in emergency medicine, endoscopy, enterostomal therapy, sonography, and retinal angiography, to list only some areas. Rising costs have created the need for additional cost-containment positions that determine the necessity of treatment, the form of treatment, the duration and location of treatment, and approved providers, among other cost control measures. Adjuvant, or "helping," therapies of alternative varieties have created additional occupational opportunities as insurers extend coverage options. Included among providers of adjuvant therapies are acupuncturists, cultural healers, biofeedback clinicians, and sleep technicians.

***Human service occupations.***

- Death and burial management
- Chaplains and religious educators
- Bereavement specialists
- Behavioral modification and adaptation

The aging of the American population continues to create occupations related to deaths and burials. Some associated occupations include "death-call drivers," who handle initial disposition of human remains. Others are cemetery personnel, who handle grave preparation and graveside arrangements. Other positions exist for persons who help in the management of bereavement and subsequent grief management.

Chaplain occupations and others dealing with religious education have been reported in nontraditional areas such as home healthcare services, residential care facilities, other health and allied services, labor unions and similar labor organizations, and some units of local government. The need for behavior modification and adaptation by other means has created demand for habilitation specialists, alcohol education instructors, Americorp volunteers, victim-witness coordinators, and interpreters for the deaf. For example, aggressive enforcement and control efforts, including rehabilitation, have necessitated education and training programs for persons convicted of driving while intoxicated.

***Transportation.***

- Aircraft line and support technicians
- Armored car drivers
- Aircraft interior refurbishers
- Ship container placement planners

N&E transportation occupations are aircraft-line personnel, armored car drivers, and ship container placement planners. Aircraft occupations are associated with corporate aircraft ownership. These aircraft owners require line technicians to move, fuel, and clean airplanes. The growth in the number of corporate aircraft has led to demand for interior refurbishers to maintain and renew interior accommodations. The continued growth of various convenience stores and fast-food outlets, among other factors, has created a need for armored car drivers to collect receipts and deliver operating funds. Finally, international trade and current ship container technology have resulted in occupations for specialists who plan the loading and placement of containers aboard ships.

***Security.***

- Security screeners
- Crisis response specialists—telephone
- Surveillance analysts
- Construction traffic control officers
- 9-1-1 coordinators
- Alarm monitoring center operators

In 2000, a variety of airport screening occupations appeared. These included managers and assistant managers of airport screeners, screening supervisors, and screeners. Similar occupations were created for work in the lobbies and public areas of commercial and government buildings. Camera surveillance of retail sites created the need for analysts to review videotapes and reports. The need for telephone companies to support 9-1-1 call systems required the use of various coordinators to oversee the installation and maintenance of required switches. The expansion of telephone call centers of 9-1-1 type systems required increased staffing of crisis response specialists. The management of traffic around construction and utility repair sites called for the employment of specialized traffic control personnel. Finally, an ex-

panded reliance upon silent alarm systems at businesses and homes supported the need for alarm monitoring personnel at central alarm locations, partly due to local police complaints about having to respond to false alarms.

***Management support.***

- Total quality management
- Bankruptcy coordinators
- Governmental affairs specialists
- Disaster business plan specialists
- Regulatory specialists
- Supply chain and process control managers
- Overseas operations specialists
- Conflict of interest specialists

The total quality management label denotes a number of related occupations that incorporate integrated management functions: Total quality manager of process and International Standards Organization (ISO) compliance; ISO management representative in human resources, data processing, and safety; document control/safety manager, ISO Procedures; and safety director/quality control, among others. These integrated managerial positions have resulted from widespread adoption of the process improvement approach to management. The positions of governmental affairs specialist and manager of environmental affairs were created to address conditions outside of internal operations. Other regulatory specialist functions are more internal, such as those performed by regulatory compliance managers; directors, regulatory affairs and quality assurance; compliance representatives, software sales; regulatory specialists, branch level; and compliance/document control specialists.

Global business opportunities and requirements have spurred demand for international sales managers, senior managers of international affairs, overseas operations specialists, directors of international accounting, and export/import trade representatives. Domestically, business failures and personal credit problems have created the need for bankruptcy coordinators at a variety of loan and consumer finance establishments. At another level, concerns about business disruptions resulting from natural and other disasters have provided opportunities for specialists who prepare contingency plans that address possible risks.

Modern systems development and related processes have created an entirely new set of integrated operations management functions. These require managers of supply chains, resource managers of material or manufacturing resources planning (MRP), supply chain managers, and process and inventory control managers.

Law firms have increasingly found themselves in need of protection against conflict of interest charges. As a result, growing numbers of such firms have added conflict of interest specialists to their administrative staffs.

***Technology-specific.***

- Satellites
- Wheelchair and scooter maintenance
- Environmental care
- Nonmetallic technicians
- Underground operations
- Salvage technicians

The extensive development of satellite technology has created occupations such as satellite engineers, satellite tracking technicians, field engineers for satellite uplink systems, satellite tracking equipment repairers, telecommunications switch technicians, and cable/satellite technicians. Increased attention to environment management and care has led to growth in the numbers of restoration cleaning technicians, fire and water damage restoration technicians, mine cleanup technicians, waste water technicians dealing with disposal to city systems, and reverse osmosis repair and service technicians. The expanded use of underground routings of various pipeline and cable systems has boosted demand for underground utility locators, underground directional boring specialists and operators, and cathodic protection specialists. The mobility needs of an expanding senior population have driven increases in the numbers of wheelchair and scooter repair and service technicians. The prevalence of nonmetallic materials in everyday products has created positions for laminator/welders of fiberglass tanks and pipes, plastic welders, and laminators. Finally, the high intrinsic value of components and materials going into high-technology products has resulted in an increase in salvage activities and in the growth of occupations engaged in the salvage of such goods as automobile parts and materials in x-ray units.

## Summary and conclusions

The data from the supplemental sheet of the 2000 OES survey questionnaire have yielded a number of observations about potentially new and emerging occupations. However, as indicated in the earlier discussion of study methodology, the methods used to analyze the data more closely resemble case-study techniques than standard statistical procedures. No claim is made about statistical significance and reliability; however, comparisons with total employment patterns suggest the reasonableness of the observations. A number of occupations have been highlighted here to substantiate patterns with specific details.

If any conclusions are possible, they are that new and emerging occupations are appearing throughout the economy, in many industries in many States. Increasing human needs and new technology serve as the engine and fuel for the creation and expansion of these jobs. ■