

**Table 1: Initial List of Database Design Skills**

<b>Database Design Skills</b>	
1. End-user analysis	26. Ability to analyze end-user workflow and integrate analysis into database design
2. Defining data elements	27. Ability to interpret and respond to error messages generated in Access and SQL
3. Ability to perform data retrieval and reporting	28. Ability to adapt to changing database design issues
4. Thorough understanding of the relational model	29. Ability to perform proper indexing to enhance query performance
5. Ability to partition data	30. Ability to perform enhanced entity relationship diagramming
6. Ability to normalize data	31. Ability to back up and restore a database
7. Ability to read the data dictionary	32. Ability to identify common database failures
8. Fluency in the SQL command language	33. Ability to control database for concurrent access
9. Ability to use the open database connectivity administrator	34. Ability to tune database for performance
10. Ability to reference and alter dates	35. Ability to manage data quality
11. Using Access and SQL: Knowledge of how to create tables, queries, forms, and reports and how they are used, created, and interrelated	36. Ability to design and develop a data warehouse
12. Ability to secure databases (HIPAA)	37. Ability to use online analytical processing tools
13. Ability to create conceptual, logical, relational models and convert them into a physical model	38. Ability to understand a solid design and implementation methodology (Spiral Methodology)
14. Ability to allocate disk space for a database	39. Ability to document security integrity
15. Understand how networks operate to ensure access to all who need the database	40. Ability to articulate and flow chart how data integrity will be maintained
16. Ability to perform denormalization	41. Knowledge of the most common large-scale database software programs (Oracle, Sybase, Informix, Microsoft SQL, Pervasive SQL)
17. Ability to create and use if/then statements	42. Ability to creatively solve problems
18. Ability to perform entity-relationship diagramming	43. Knowledge of computer programming
19. Ability to create views customized to the needs of various levels of users	44. Knowledge of how medical charges are billed
20. Ability to create calculations and aggregate functions within queries	45. Ability to listen to and understand user requests
21. Ability to test the database to ensure relationships are correct and needed queries and reports can be produced	46. Knowledge of proper customer service
22. Ability to perform right, left, union, and equi-joins and understand the different results they return	47. Exposure to existing commercial clinical database systems
23. Ability to communicate effectively	48. Experience interfacing databases with Web pages
24. Ability to document database design	49. Ability to work as a member of database

processes	design team
25. Ability to perform flow charting	50. Knowledge of the difference between data marts and data warehouses