LEARNING OBJECTIVES
1. Provide an example of when narrative inquiry would be the most appropriate qualitative research approach.
2. Identify the activities involved in data collection.
3. Define and describe narrative thematic data analysis.
4. Discuss data verification and validation strategies used in qualitative research approaches.

INDEX TERMS: Data coding, data validation, identity, narratives, narrative inquiry, professional identity, qualitative research methods

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INTRODUCTION
When selecting a research design, such as quantitative, qualitative, or mixed methods, Patton (2002) suggested reflecting on the purpose of the inquiry and the types of answers you seek. Qualitative methods allow the researcher to study issues in depth with data collection often occurring through open-ended questions permitting “one to understand and capture the points of view of other people without predetermining those points of view through prior selection of questionnaire categories.” Results include a wealth of detailed information about a small number of people; therefore, leading to an increase in the depth of understanding of these select individuals.

As Creswell (2013) stated, “Those undertaking qualitative studies have a baffling number of choices of approaches.” Qualitative approaches of inquiry are diverse and can be numerous depending upon how they are classified as some classification schemes include 20 plus approaches. Regardless of how they are classified, the traditional 5 approaches are represented, in some fashion, in all classification schemes. These include case studies, ethnography, grounded theory, narrative, and phenomenology. This article will provide the reader with a better understanding of narrative approach or narrative inquiry.

Narrative inquiry is the approach of which I have the most knowledge and the most experience with as it was the approach I selected for my doctoral research study. Narrative inquiry is a form of qualitative research in which the stories themselves become the raw data. This approach has been used in many disciplines to learn more about the culture, historical experiences, identity, and lifestyle of the narrator. The narrative approach involves inquiry directed at narratives of human experience or inquiry that produces data in narrative form. Examples of inquiries that yield narrative data include interviews that solicit stories or oral histories, or written autobiographies and biographies.

Defining features of the narrative approach include the collection of narrative (stories) from individuals or small groups. Most often there is collaboration with the researcher as storytelling engages the audience. These stories tell of individual experiences that often exposes the researcher to the identities of that individual. Narratives are often collected through interviews but other qualitative forms of data collection, such as observations and documents may be used. Analysis of narrative data varies as there is no universal approach however narrative researchers have published guidelines and processes. The narrative data analysis process should be selected based on your purpose and research questions.

The narrative approach originated from the social
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sciences (anthropology and sociology) yet it now expands into education, healthcare, and humanities.2,7 It has grown exponentially over the last few decades, it is now cross-disciplinary, and often used in healthcare to collect illness narratives in order to better understand the lives of those with life limiting diseases.8 There are several benefits of using the narrative approach in qualitative studies. First, humans are natural storytellers and as such it is easy to elicit stories. Second, gathering in-depth data is easily accomplished as narratives usually provide thick descriptions. Last, it is possible to gather in-depth meaning as participants usually reveal themselves in their stories.9

PURPOSE
As indicated above, your research purpose and questions guide you to qualitative, quantitative or mixed methods research designs. Patton (2002) used the following example, if you want to know how much a person weighs then you conduct a quantitative research study and collect numerical data but if you want to understand what their weight means to them then you must conduct a qualitative research study to learn about their experiences and hear their stories.1 When is it appropriate to use qualitative research and approaches? When you have a problem or issue that you need to explore, when you need a better and/or detailed understanding of an issue or phenomenon, when you want to empower individuals, or when you want to develop a theory.2

Simply, qualitative methods are used when you want to find out “what people do, know, think, and feel by observing, interviewing and analyzing documents”.1 Qualitative research articles can be found in medical laboratory science publications such as Blood, Clinical Laboratory Science, and Transfusion. Examples in medical laboratory science might include interviewing inpatients and outpatients to assess quality of phlebotomy service, practitioners to evaluate implementation of new processes, exiting practitioners to better understand their career decisions, students’ experiences and perceptions of laboratory mentorship or training, and patients’ perceptions on the role or value of medical laboratory practitioners, etc.

Throughout this article, I will use my doctoral research study as an example so you gain a better understanding of the narrative approach. The purpose of my research study was to understand how medical laboratory practitioners viewed themselves, their profession, and their professional identity, as represented through their narratives. I sought to better understand the professional identity of practitioners. The narrative approach was selected because it is often used to better understand identity since “narratives provide us with access to people’s identity and personality”.1 In essence, I studied the personal and professional identities of medical laboratory practitioners through their narratives which allowed for a greater understanding of the professional identity of the medical laboratory science profession.

As with quantitative research studies, theory was a major component of my doctoral research study as it guided my theoretical framework. Merriam (2009) defined a theoretical framework as “the underlying structure, the scaffolding or frame of your study”.10 The supporting theoretical framework for my study was narrative identity theory as proposed by McAdams (2001).11 The concept of studying identity through narratives began in the 1980’s and has expanded into a subdiscipline of personality psychology known as narrative identity research.11,12 One of the first narrative identity researchers was McAdams (2008), who defined narrative identity as “an individual’s internalized, evolving, and integrative story of the self”.13 McAdams (2008) explained narrative identity as:

Stories we construct to make sense of our lives are fundamentally about our struggle to reconcile who we imagine we were, are, and might be in our heads and bodies with who we were, are, and might be in the social contexts of family, community, the workplace, ethnicity, religion, gender, social class, and culture writ large.13

DATA COLLECTION
Data in qualitative research may include data collected through interviews and observations or from documents. Almost all qualitative research studies collect data through interviews but a study can collect data from observations and/or documents as the data collection process is about “asking, watching and reviewing”.10 Data collection can be visualized as a series of activities the researcher engages in during this phase of their study, see Figure 1.

For my qualitative research study, the primary type of
data collection was in-depth interviews of participants. Participants were medical laboratory practitioners currently working in a hospital laboratory. As an educator in a medical laboratory science program I had access to many hospital affiliations that permitted the use of convenience sampling.

Interview participants were selected with the aid of a demographic questionnaire. Demographic questionnaires were distributed amongst three hospitals and completed questionnaires were reviewed for 10 maximum variation cases, which were cases that exhibited a wide range of variation in experiences.1,14 This purposeful sampling strategy promoted maximum variation, as the demographic questionnaires allowed me to sample a wide variety of participants (including gender, educational background, discipline area, and years in the profession). Maximum variation sampling was preferred because it allowed for documentation of the range of variation in the narratives and individuals and to determine whether common themes or patterns were present across this variation.14

Sample size is not straightforward in qualitative research as, “There are no rules for sample size in qualitative inquiry”.1 Sample size is ambiguous, as it depends on the answers being sought, theoretical framework, type of data collected, resources and time, etc.1,10 The purpose of my study was to maximize information. Therefore sampling was terminated when no new information was forthcoming, which is a common strategy in qualitative studies known as sampling to the point of redundancy.1,10 As Patton (2002) suggested, determine a minimum sample size and increase if necessary to reach redundancy, therefore my doctoral dissertation committee set my minimum sample size at ten.1

Patton (2002) stated, “there are three basic approaches to collecting qualitative data through open-ended interviews” which includes informal conversational interviews, standardized open-ended interviews, and the general interview guide approach.1 An informal conversational interview consists of spontaneous generation of questions in the natural flow of conversation, whereas standardized open-ended interview questions are carefully prepared ahead of time and each participant is asked the same question in a certain sequence. The general interview guide approach sits in the middle of the other two approaches and includes the use of an outline of questions ensuring that all pertinent topics are covered.1

My qualitative study utilized the general interview guide approach to solicit narrative yet keep consistency and structure in the interview process. To solicit narratives, suggestions provided by narrative researchers for encouraging storytelling were used. These suggestions included using open ended questions framed in everyday language that are also broad enough to allow respondents to provide detailed stories, asking questions worded to elicit narratives, and consisting of a minimum number of broad primary questions complemented with probing questions.15,16 My general interview guide consisted of seven broad primary questions with multiple probing questions listed under each primary question.

Participants were interviewed individually during two separate interview sessions. The objective of the first interview was completion of the interview guide while the second allowed for clarification and follow-up questions. Interviewing a participant more than once is optimal because it provides an opportunity to reflect upon the first interview and to “build upon and explore the participants’ responses” in the second interview, thereby providing richer and thicker descriptions.17

DATA ANALYSIS
Qualitative data analysis is simply “the process of making sense out of the data”.10 To do this one immerses oneself in the data and consolidates the data focusing on those segments that may provide insight (even a glimmer) into your research questions. Then the researcher compares segments looking for patterns/themes in the data. The researcher interprets what was said and makes meaning from the pattern/themes. These meanings or understandings become the findings within your study.10

Data collection and analysis is not a step by step procedure as collection and rudimentary analysis is a simultaneous activity. Initial analysis begins during the first interview or observation while the researcher identifies emerging insights or hunches. This can direct the researcher to probe further or refine the interview questions. Once data collection is complete, a more intensive analysis begins.
Narrative analysis is one form of qualitative data analysis that is often used in narrative inquiry. There are no set procedures for narrative analysis but several narrative researchers have published guidelines and processes for analyzing narratives. Narrative analysts may use one of four approaches. The most common of the four approaches is narrative thematic analysis in which content within the text is the primary focus; therefore, this was the approach I selected. The second approach is structural analysis in which the focus is on the way a story is told or put together. The third approach is dialogic/performance analysis and the focus is on the “dialogic process between teller and listener.” Lastly, visual narrative analysis is a broad area encompassing words and images and it incorporates images into narrative analysis alongside written or spoken text.

The narrative thematic analysis process I used consisted of five stages: (a) organization and preparation of the data, (b) obtaining a general sense of the information, (c) the coding process, (d) categories or themes, and (e) interpretation of the data. The organization and preparation of the data stage began with transcribing audio tapes immediately or shortly after the interview. While transcribing the tapes from the interviews, any rudimentary patterns or themes were noted in the transcript margins. The two transcripts (each participant was interviewed twice) were compiled into one document for each participant, non-narrative lines, such as casual conversation, were deleted, participants were assigned fictitious names, and any participant identifiers (e.g., names, locations) were replaced or removed.

The coding process was the next stage in which the data was coded manually. I elected to complete my data analysis manually; however, there are qualitative analysis software programs available. Glesne (2006) defined coding as “a progressive process of sorting and defining...”
and defining and sorting those scraps of collected data ...that are applicable to your research purpose.”

The coding process consists of re-reading the transcripts and identifying recurring words, ideas, or patterns generated from the data.

I re-read the narratives and highlighted, within each narrative, prominent ideas and any recurring words or messages. Then I developed a corresponding code, a shorthand designation to easily identify the recurring words/ideas, for that passage and placed it in the margin. After completion of coding the first transcript, a master code list was constructed. As I proceeded with the next transcript, codes were pulled from the master list if applicable or new codes were created and added to the master list. My initial master code list contained 54 codes (recurring patterns).

Codes were then placed into a logical category or “a word or phrase describing some segment of your data that is explicit.” Categories should reflect the themes that have become apparent and represent the major findings of the study. For this study, the codes were condensed into six major categories or themes including: (a) changes within the profession, (b) entry pathways into medical laboratory science profession, (c) lack of awareness (of the profession), (d) being misunderstood by fellow healthcare professionals, (e) retention issues, and (f) role and value of medical laboratory practitioners. See Table 1 for an example of the stages of narrative thematic analysis I performed on an interview participant transcript.

The last stage of narrative thematic analysis was interpretation of the data or simply making meaning from the data. This stage is not necessarily a separate stage as it can be simultaneous with the coding and categorizing stages. Interpretation consisted of studying the categories and their corresponding codes to determine if there were any overarching themes or theories that provided insight on the professional identity of medical laboratory practitioners. The six major themes listed previously are the overarching themes that were generated from the narratives and

<table>
<thead>
<tr>
<th>Transcript passage</th>
<th>Initial code(s)</th>
<th>Corresponding category/theme</th>
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</thead>
<tbody>
<tr>
<td>X: Tell me about an incident or experience that made you proud to be a clinical</td>
<td>1) Experiences of perceived</td>
<td>1), 2) Role and value of clinical laboratory</td>
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<tr>
<td>laboratory practitioner.</td>
<td>recognition or respect</td>
<td>practitioners</td>
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<tr>
<td>KAREN: My brother-in-law, this is a personal example, my brother-in-law was just</td>
<td>2) Proud to be practitioner</td>
<td></td>
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<td>recently diagnosed with Good-Pasteur’s syndrome. Before they diagnosed him, he was</td>
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<td>very sick, and they were running a lot of tests, and my sister called me a lot.</td>
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<td>This is what they are running and what does it mean, what are they looking for.</td>
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<td>It made me feel like she was recognizing what I do and letting me help her through</td>
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<td>this really difficult process, I think in a personal way, it made me feel proud that</td>
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<td>she looked to me as the source of knowledge to help her understand what was being</td>
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<td>done and what was going on. So that is probably the most immediate one I can think</td>
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<td>of. And here again, I’m sure there are others but I just can’t think of them right</td>
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<td>now.</td>
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<tr>
<td>X: Tell me about an incident or experience in which you were disappointed with being</td>
<td>3) Negative experience with physician</td>
<td>3), 4), 5) Being misunderstood by fellow</td>
</tr>
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<td>a clinical laboratory practitioner.</td>
<td></td>
<td>healthcare team members</td>
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<td>KAREN: Oh like the time the doctor said you are just a med tech. It was when I was</td>
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<td>in client services and I wish I could remember the specifics of what she had called</td>
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<td>for or called about but I’m trying to explain it to her and she wouldn’t listen and</td>
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<td>finally she just blurted out, “what do you know you’re just a med tech”. You are</td>
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<td>calling about lab tests this is what I do. That would be like me questioning her and</td>
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<td>I was just so stunned I couldn’t say anything. But it made me feel really diminished</td>
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<td>that she didn’t have any more respect for the profession or for me. Who else were</td>
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<td>you going to call with this question? You didn’t know it or you wouldn’t have had to</td>
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<td>ask. But that definitely was a humbling moment.</td>
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resulted in a better understanding of the professional identity of medical laboratory practitioners.

**DATA VERIFICATION AND VALIDATION**
Creswell (2014) defined qualitative validity and reliability as the steps a researcher takes in order to check “for the accuracy of the findings by employing certain procedures”.20 There are numerous strategies to promote validity and reliability that qualitative researchers can employ to provide evidence their data is valid and reliable. There are no specific strategies for the narrative approach so I selected strategies commonly used in qualitative inquiry. Creswell (2013) recommends that researchers utilize at least two strategies in any given study.2 Strategies promoting credibility (internal validity) began with the utilization of member-checking, the “sharing interview transcripts, analytical thoughts, and/or drafts of the final report with research participants to make sure you are representing them and their ideas accurately”.21 Second, I had an expert audit review as an expert serving on my doctoral committee assessed the quality of data analysis.1,10 Last, I clarified the bias that I as the researcher brought to the study. I openly and honestly discussed my biases (past experiences, assumptions, and orientation) that would shape my interpretation of research findings and my approach to the study.2

A strategy used for consistency (reliability) was the documentation of an audit trail which is authentication of the findings of a study by following the trail or steps of the original researcher; therefore, I provided detailed procedures used for data collection and analysis. Strategies promoting transferability (external validity) included providing rich, thick descriptions. The term thick description is described as “a highly descriptive, detailed presentation of the setting and in particular, the findings of a study”.10 I provided a description of the interview participants and presented findings with supporting evidence presented as narrative quotes. A second strategy was to employ maximum sample variation which I used during sample selection that allowed for the greater range of application by consumers.10

**DATA RESULTS**
Reporting and disseminating of qualitative results can be drastically different than those of quantitative results. In qualitative research studies, there is no standard format for reporting data and some qualitative researchers have presented their data in a variety of creative formats such as poetry, art, books, collages, film, photographs, scripts, songs, etc.7,10 As Merriam (2009) indicated, “Diversity in style of reporting has characterized qualitative research over the years and is even more experimental today” if accepted by one’s colleagues and profession.10 Since I had aspirations of publishing my qualitative study results in a medical laboratory science journal, I selected to report my findings in the traditional written report format. Commonly, written findings are presented by category or theme and as such my findings were organized by themes. I began with a brief overview of that theme and then supported it with several narrative quotes. Inclusion of narratives allowed me to provide rich, thick descriptions of my data and by keeping the narratives intact ensured clarity and meaning was conveyed.

I presented quotes, in narrative form, for each of the six themes to provide evidence of my findings. Being misunderstood by fellow healthcare professionals was one theme that emerged from the data. Within this theme participants shared several experiences of negative interactions between themselves and other healthcare professionals due to a physician or nurse not fully understanding medical laboratory testing or the role of practitioners. The following is one of the narrative quotes I used to support this finding.

I was in chemistry and I had a specimen on a baby that they [healthcare providers] wanted a slew of tests on but they only sent me one bullet and it was only half full. Well as you know with babies they have high crits [hematocrits] so you don’t get very much serum off of one bullet. I did the absolute best that I could, I tried to run it, I got what results I could get off of it and I called and spoke with the floor and I explained to them “I don’t have enough, could you send me two more bullets?” They sent me two, but they didn’t fill them, and I still couldn’t get all the tests that the doctor wanted and I called them back and apologized. I said, “I was able to get X, Y, and Z tests done but I couldn’t get these other ones done because I just don’t have enough [sample], the analyzers require a certain amount.” I explained to them that I did the
absolute best that I could. The doctor physically came down to the lab, walked into chemistry and asked why he couldn’t get those [tests] done so I told him…. He said, “we will just have to do a cardiac stick on the baby”…. They just don’t understand, you try to explain it and they don’t want to hear it.

Since qualitative researchers prefer more creative means of sharing their findings, the narratives I collected could have been shared orally in a film or script in order to support the findings of my doctoral research study.

LIMITATIONS
Before considering the narrative approach, if appropriate based on research purpose and questions, and theoretical framework, one should be aware of its limitations. Narrative inquiry is not feasible for studies of large numbers and it is “not suitable for investigators who seek an easy and unobstructed view of subjects’ lives”.23 The researcher has to collect extensive information about the participant in order to fully understand the context of that individual. Therefore analysis may be extremely slow and meticulous.2,23 In addition, anonymity may become an issue as some participants do not want their anonymity protected as they want their stories to be shared.7

CONCLUSION
Narrative inquiry is one of the traditional 5 approaches of qualitative research. I selected narrative inquiry for my doctoral research study because through narratives I gained insight into the identity of medical laboratory practitioners which corresponded to my purpose and research questions. In qualitative research studies, data can be collected through interviews and observations and/or from documents. I chose to collect data from interviews with ten medical laboratory practitioners. There are four primary approaches to performing narrative data analysis and I used thematic analysis as my focus was to identify themes within the narratives. From narrative thematic analysis six themes regarding the professional identity of medical laboratory practitioners emerged thereby providing a better understanding of the identity of the profession.

REFERENCES