Case M
The Piney Woods Hospital Emergency Department

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Piney Woods Hospital (PWH) is a 575-bed not-for-profit community hospital located in the town of Piney Woods, Alabama. With a population of 50,000, Piney Woods is a growing, blue-collar community, valued for its rural scenery and easy access to outdoor activities. Piney Woods Hospital has a Level 2 designation for its emergency services, and is located 50 miles from the next nearest community hospital.

Zach Porter, the Piney Woods Hospital CEO, has dedicated a considerable amount of his time and energy to developing the acute care side of the hospital and has enjoyed positive results in this area. However, he is well aware that the emergency department (ED) presents a different story. Similar to other EDs across the country, the Piney Woods ED suffers from staff shortages, inadequate space, operational inefficiencies, and problems associated with declining reimbursement and a growing number of uninsured patients. Nursing staff are over-worked and over-stressed, evidenced by high rates of staff overtime and high turnover among nurse managers. Porter is particularly concerned about declining satisfaction scores across patient, employee, and physician populations, along with complaints about excessive ED wait times.

Assessing the Situation

Porter recognizes that problems in the ED reflect poorly upon PWH and knows he must do something. In his role as CEO, Porter realizes he has little time to dedicate to evaluating this problem, but he is not without resources. He decides that a situational assessment would be a perfect assignment for his summer resident, Gwen Roberts, who is completing her master of health administration degree.

Calling Roberts into his office, Porter outlines the "big picture" to her as follows:

- The patients are not the only ones dissatisfied. The most recent employee satisfaction survey reported a 62 percent satisfaction score (out of a possible 100 percent) for ED staff when the hospital-wide employee satisfaction score was 82 percent. The emergency physicians scored 3.3

on a 7-point scale (hospital-wide physician satisfaction was 4.6) on their satisfaction survey.

- The emergency department morale, productivity, and quality have declined over the last few years. There has been a lot of turnover in leadership, which has exacerbated the problems. In the past year, the entire hospital adopted an electronic health record system. The emergency physicians were not consulted and as a result there is a lot of ill will on their part. On Porter's latest rounds in the ED, neither staff nor physicians would look him in the eye. You could have cut the tension with a knife.
- The ED physicians' poor attitudes have burned many bridges with other physicians, both those who provide specialty coverage as well as those who serve the Piney Woods community. Hospital leadership has tried for the past 18 months to work with the ED physicians to enhance their productivity, increase chart completion rates, improve morale, and facilitate cooperation, with no success.
- The decrease in cost of physician services in FY 2007 is a result of a drop in patient satisfaction scores. The physicians receive a bonus for good patient satisfaction.
- Building a new ED is not an option at this time.
- Critical success factors for the hospital include:
  - Maintain a high-quality workforce
  - Improve customer service
  - Increase quality of healthcare provided
  - Improve financial results
  - Expand clinical services

Starting the Analysis

Returning to her desk, Roberts feels overwhelmed, but also energized by the challenge of figuring out the ED situation. Porter has outlined a number of serious problems with the ED that clearly have broad implications for PWH overall. Fortunately, Porter's charge has also given her sufficient clout in order to request the data she needs to complete her assignment. Without further deliberation, she e-mails her request for data to the CEO's assistant, focusing on the following list of documents:

- Three-year Piney Woods Hospital comparative income statements (Figure V.9)
- Three-year Piney Woods Hospital comparative balance sheet (Figure V.10)

FIGURE V.9
Piney Woods Hospital Income Statements

Years Ended September 30, 2005, 2006, and 2007
(in thousands)

	2005	2006	2007
REVENUE			
Inpatient revenue	$ 471,794	$ 510,576	$ 543,875
Hospital outpatient revenue	222,602	243,438	264,729
Behavioral health revenue	14,887	14,278	13,571
Home care revenue	31,110	29,682	34,062
Nursing home revenue	5,224	6,137	6,225
Clinic revenue	1,508	2,059	2,342
Total revenue	747,125	806,170	864,804
Deductions from revenue	(340,993)	(379,012)	(433,921)
Net patient revenue	406,132	427,158	430,883
Other operating revenue	10,968	15,083	12,804
	417,100	442,241	443,687
EXPENSE			
Nursing services	76,244	85,624	85,004
Other professional services	97,907	112,222	123,787
General services	20,227	21,815	23,016
Fiscal services	19,277	18,901	19,434
Administration services	58,927	61,319	59,965
Behavioral health expense	8,298	8,291	7,912
Home case expense	21,088	21,954	24,485
Nursing home expense	4,785	5,145	5,233
Clinic expense	3,007	3,730	3,893
Interest	4,443	2,879	3,895
Depreciation and amortization	29,297	31,460	32,789
Bad debt expense	27,930	37,685	39,788
Total operating expense	371,430	411,025	429,201
Operating margin	45,670	31,216	14,486
Non-operating revenue	16,394	14,520	16,852
Accrual for incentive bonus	(5,142)	(6,191)	(16)
Total margin	$ 56,922	$ 39,545	$ 31,322

FIGURE V.10
Piney Woods Hospital Balance Sheet

Years Ended September 30, 2005, 2006, and 2007
(in thousands)

	2005	2006	2007
ASSETS			
Operating cash	$ 1,574	$ 3,736	$ 32
Investments	230,150	244,152	255,239
Patient accounts receivable			
Accounts receivable, net of contractual adjustments	127,798	132,697	131,734
Third-party receivables	3,001	4,077	2,661
Allowance for uncollectibles	(48,648)	(49,104)	(52,734)
Net patient receivables	82,151	87,670	81,661
Intercompany receivables	38,954	33,783	51,561
Inventories	5,731	6,092	6,638
Prepaid expenses	15,584	15,547	17,674
Other current assets	4,135	6,366	5,403
Property, plant, and equipment	485,799	508,195	541,992
Construction in progress	9,388	11,697	3,396
Accumulated depreciation	(262,403)	(276,928)	(308,277)
	232,784	242,964	237,111
Bond fund	30,205	22,437	15,042
Other assets	88	38	148
Expansion fund cash and investments	31,311	33,895	38,421
Total assets	$ 672,667	$ 696,680	$ 708,930
LIABILITIES AND NET ASSETS			
Accounts payable	$ 9,688	$ 8,206	$ 9,643
Accrued payroll and withholdings	18,043	20,877	10,768
Due to third parties	7,688	8,419	8,284
Other liabilities	1,888	2,467	1,926
Bonds payable	161,171	152,071	146,059
Total liabilities	198,478	192,040	176,680
Net assets	474,189	504,640	532,248
Total liabilities and net assets	$ 672,667	$ 696,680	$ 708,930

FIGURE V.11
Piney Woods Hospital Vital Statistics

Years Ended September 30, 2005, 2006, and 2007 (in thousands)

	2005	2006	2007
Patient days	150,278	150,735	142,092
Adjusted patient days	230,481	231,377	220,190
Discharges	29,220	29,902	27,917
Adjusted discharges	45,130	46,251	43,575
Home care visits	270,199	249,570	277,748
Nursing home days	38,194	38,028	37,394
Clinic visits	13,812	17,281	18,726
EMERGENCY ROOM			
Emergency room visits	54,229	55,439	57,539
Emergency room total charges	$17,405,333	$17,357,754	$16,979,267
Inpatient admissions through ED	11,495	11,864	11,289
ED RN FTEs*	48	48	49
Unit clerk FTEs	4	4	4
ER tech FTEs*	10	17	17
Left without being seen/AMA	1,030	1,497	2,301
Average turnaround time (min.)	177	247	312
Average time to be seen by physician (min.)	23	129	152
RN vacancy	4.4%	11.0%	13.0%

* In FY 2006 an observation unit was created in the ED. Eight RN FTEs were added in FY 2006 to staff this unit. ER techs increased by 8 FTEs in FY 2006 and 4 in FY 2007.

- Three-year Piney Woods Hospital vital statistics (Figure V.11)
- Three-year Piney Woods Hospital payer mix and emergency charges (Figure V.12)
- Three-year Piney Woods Hospital emergency department expense (Figure V.13)
- Physician satisfaction and employee satisfaction survey results (Figure V.14)
- Emergency department floor plan (Figure V.15)

Situational Analysis Results

Roberts's review of Porter's initial outline of the PWH problems and the documents she requested suggested a host of problems to tackle at Piney

FIGURE V.12
Piney Woods Hospital Payer Mix and Emergency Charges

Years Ended September 30, 2005, 2006, and 2007	2005	2006	2007
INPATIENT PAYER MIX PERCENTAGES			
Commercial	21%	17%	16%
Managed care	4%	4%	5%
Medicaid	10%	11%	11%
Medicare	57%	59%	58%
Self-pay	8%	9%	10%
	100%	100%	100%
CHARGES INCURRED BY EMERGENCY PATIENTS (in thousands)			
Commercial	$ 38,007	$ 31,092	$ 30,947
Managed care	13,826	11,760	13,085
Medicaid	36,316	35,703	28,162
Medicare	46,569	41,812	51,742
Self-pay	29,734	30,759	36,361
	$ 164,452	$ 151,126	$ 160,297
EMERGENCY DEPARTMENT PAYER MIX			
Commercial	22%	21%	19%
Managed care	9%	8%	8%
Medicaid	22%	23%	18%
Medicare	29%	28%	32%
Self-pay	18%	20%	23%
	100%	100%	100%

FIGURE V.13
Piney Woods Hospital Emergency Department Expense

Years Ended September 30, 2005, 2006, and 2007 (in thousands)	2005	2006	2007
Salaries—RN	$ 2,662	$ 2,750	$ 2,764
Salaries—other	589	838	807
Benefits	235	255	259
Administrative expense	90	107	92
Patient-related expense	456	570	616
Physician services	763	839	516
Liability insurance	428	477	538
Total	$ 5,223	$ 5,836	$ 5,592

FIGURE V.14
Satisfaction Survey Results

PHYSICIAN SATISFACTION SURVEY

2002		
	Total Hospital	**ED**
Physicians Surveyed	79	4
General Satisfaction	5.43	6.5

2005		
	Total Hospital	**ED**
Physicians Surveyed	75	3
General Satisfaction	4.61	3.33

NOTE: The survey is based on a seven-point scale, 1 being negative and 7 being positive. This survey measures overall physician satisfaction concerning working relationships with the hospital.

EMPLOYEE SATISFACTION SURVEY

	Hospital	**ED**
2003	79	67
2005	79	78
2007	82	68

NOTE: Employee opinion survey is conducted every other year. The score represents the percentile with 1% being the lowest and 100% being the highest possible score.

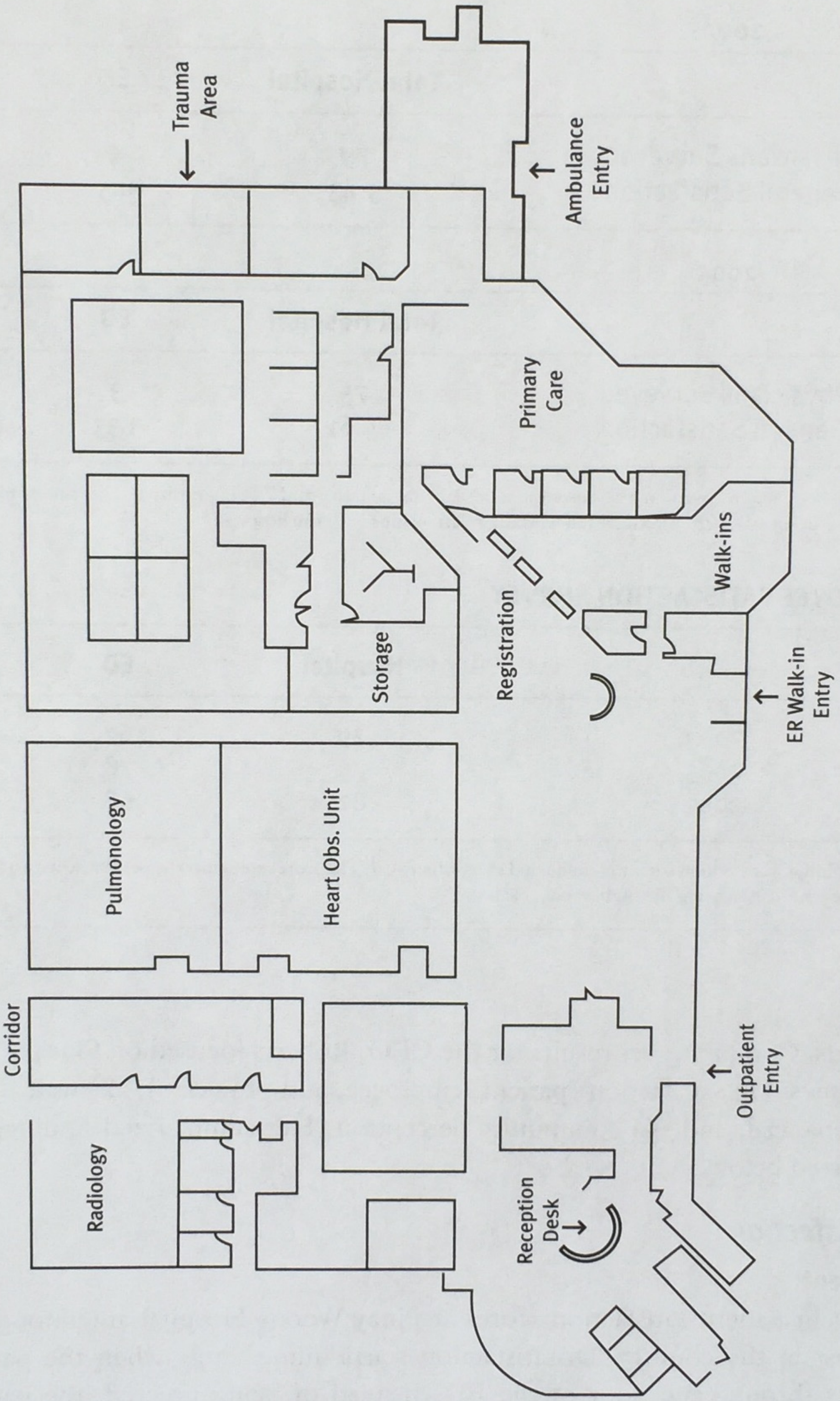
Woods. Compiling her results for the CEO, Roberts focused on four particular issues: (1) satisfaction (patient, employee, and physician), (2) wait times, (3) financial, and (4) community perception. Her summarized findings are reported below:

Satisfaction

Patient

Current patient satisfaction scores at Piney Woods Hospital are among the lowest in the country. Dissatisfaction starts immediately when the patient walks through the door of the ED. Instead of being greeted, the patient must navigate his or her way to one of the three registration desks, none of which is located in plain view. After registration, the patient is not given a time estimate, but rather is told to have a seat and wait until being called back to the nursing desk. There is no additional communication with the patient until he or she is called to head through the double doors to the nurs-

FIGURE V.15
Emergency Department Floor Plan



ing desk. Once again, instead of being greeted and escorted to the nursing desk, it is up to the patient to find his or her own way.

At this point, the patient is not only upset with his or her medical condition, but also with the service he or she has received. On average, it takes a patient two and one-half hours to be seen by a physician. This long wait time and lack of communication resulted in over 2,000 patients leaving without being seen or against medical advice (AMA) in the past year.

Another issue on the rise for patient satisfaction is the number of Hispanic immigrant workers now residing in the area. Most of these workers do not speak English, nor do they have health insurance. This cultural difference creates a barrier between the staff and patients.

Employee

Employee satisfaction at PWH ED increased between 2003 and 2005 but decreased to 68 percent in 2007. Work overload and poor work relationships contribute to increased stress for nurses (Institute of Medicine 2007). Stress from increased crowding is evident as PWH nurses are frustrated and tired of dealing with angry patients. In addition, the nursing schedule is inflexible and results in frequent overtime. Unfortunately, the employees at PWH do not have a consistent leader with whom to address their concerns. The lack of leadership in the ED may have been the cause for the drop in employee satisfaction after its previous increase. Satisfied employees are critical to the provision of customer service and high-quality care, so it is essential PWH leaders focus on employee satisfaction.

Physician

In 2002, physician satisfaction with the ED was 6.5 on a scale of 7, but in 2005, the survey response rate dropped, and the score declined to 3.33. The scores for the total hospital followed a similar pattern, but did not drop as sharply as those for the ED. This indicates physician dissatisfaction is a hospital-wide issue, and not just limited to the ED. Maintaining working relationships with physicians is crucial to the success of any health service institution.

The decrease in ED physician satisfaction is attributable to the high turnover in leadership. Since leadership has been inconsistent, morale, productivity, and quality have all declined in the past few years. The physicians are also upset that they were not consulted about the hospital switching to electronic health records. Since their opinions were not valued, the physicians currently do not have a good working relationship with Zach Porter, PWH CEO. Further, the contract with the physician group is set up to reward physicians on the basis of patient satisfaction, so the decline in satisfaction has cost the physicians income. Destabilization of income is disruptive to the

satisfaction of any group of stakeholders. The working arrangement of the hospital with the physicians is a key area to be addressed.

Wait Times

Long wait times are another weakness of PWH's ED. The current process flow includes several points where patients endure waits. When patients arrive, they wait to be registered. Then, patients wait to be called to the nursing desk for triage. The triage process only distinguishes two levels of acuity—primary care and life-threatening trauma; as a result, most patients fall in between and wait again for a bed. After patients secure a bed they are likely to wait for nurses, physicians, and test results. Even after disposition, admitted patients may wait for inpatient beds.

Nearly 80 percent of patients' time in an ED is non-value added wait time, and longer waits correlate with lower patient satisfaction and with higher rates of patients leaving without being seen (Advisory Board Company 2004; Crane 2007; Institute of Medicine 2007). As shown in Table V.1, PWH's experience is similar to that reported in the literature. From 2005 to 2007, PWH's average time to see a physician increased over 500 percent and average turnaround time increased 76 percent; as expected, patient satisfaction is low and the number of patients who left without being seen or against medical advice increased 124 percent. Since improving customer service and quality of care are critical success factors for the hospital, PWH's ED must reduce wait times.

Financial

The hospital has obviously been in a downturn over the past three years. Year-to-year bottom lines have been declining, leaving fewer resources available for updating and expanding the current services. Surprisingly, analysis of ED performance shows this department is not significantly draining on the hospital. There are other places the hospital should be more concerned about when evaluating overall financial performance.

For example, growth of expenses in "other professional services" has been quite large. The increase in these costs accounted for 82 percent of the

TABLE V.1 Status of Emergency Department Visits

	2005	2006	2007	'05–'07
Visits	54,229	55,439	57,539	6.1%
Left w/o being seen/AMA	1,030	1,497	2,301	123.4%
% left w/o being seen/AMA	1.9%	2.7%	4.0%	
Average turnaround time (min.)	177	247	312	76.3%
Average time to physician (min.)	23	129	152	560.9%

total margin decline from 2005 to 2006. There may be revenue associated with these costs, but they do not appear to adequately offset the costs. Also, there has been an enormous amount of growth in the home care business. This rapid expansion, 633 percent growth from 2005 to 2006, may have flown under the radar of the business office, which could be struggling to collect. Lack of management attention might lead to high expenses in the business office, preventing it from covering costs. These two issues alone are more financially alarming than the situation in the ED.

The most immediate financial problem presented by the ED is the influx of self-pay patients, particularly the uninsured. These individuals seem to be causing a large amount of stress on the staff. Lack of attention to the special requirements of billing and collecting from self-pay patients makes the situation more burdensome than need be. Appropriate and proactive collection methods could assuage this.

Community Perception

Little information was available regarding the current state of the PWH brand. However, the state of the ED has significantly damaged the brand of the hospital, whether there is an official brand strategy or not. The patrons—patients and their families—of PWH form perceptions about the hospital based on the care and satisfaction they receive while there. They pass along these perceptions to their friends by word of mouth. Every institution, private or public, for-profit or non-profit, has an image and associated set of values. PWH needs to actively improve that image and those perceptions by managing the brand. Managing the ED brand and the hospital's brand are not mutually exclusive.

What's Next?

Porter appreciated Roberts's detailed review of the Piney Woods situation, and decided he needed some concrete suggestions about what to do next. In particular, he wanted solutions to address the four issues Roberts outlined.

Case Questions

1. What could be done at Piney Woods Hospital to reduce ED wait times?
2. What steps could be taken to improve the patient payer mix?
3. How could PWH improve patient satisfaction scores?
4. What could be done to improve employee satisfaction?
5. How could physician satisfaction issues be addressed?
6. What could be done to improve community perceptions about PWH?

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Case N
An Investment Decision at Central Med Health System

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Background

Central Med Health System (CMHS) was created on January 1, 1996, with the mission of "providing expert healthcare to the people of North Central Iowa." The non-profit organization is comprised of two general, acute care hospitals, Central Med Hospital and Shelty Hospital, with a combined total of 395 beds. The service area consists of a six-county region in North Central Iowa: Rich, Crawford, Ashville, Morris, Huron, and Knowell counties. Central Med is the largest provider of healthcare services between the cities of Cletan and Flagship. The health system provides a complete range of primary care and specialty practices. Central Med Hospital offers a Level II trauma center and a Level II perinatal department. Other featured services include cardiac care, comprehensive neurological services, cancer care, behavioral health, maternity services, sports medicine, surgical services, pediatric therapy services, speech therapy services, industrial health and safety services, home care, and hospice care.

All services and business units are driven by the mission, vision, and values of Central Med. Central Med's vision is to provide "expert care close to home." The organization seeks to be the provider of choice for residents of North Central Iowa and strives to dissuade residents from traveling to Cletan or Flagship for care. The core values as stated by Central Med include: