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On the cover: “Tinker Toys” by John E Fortune, MD, is a sculpture of a synthetic femur with multiple simulated fractures, reconstructed using external fixation frames made from five different materials: stainless steel, titanium, carbon fiber, aluminium, and tinker toys. Dr Fortune is Assistant Chief of Orthopaedic Surgery at the Santa Teresita Medical Center in San Jose, CA. His various creative outlets include photography and building three-dimensional “surgical construct” models using surplus (used) orthopaedic implants. His work has been in two previous issues of The Permanente Journal, Summer 2004 and Summer 2006. It can also be viewed online at: www.pbase.com/johnbones/profile. More of Dr Fortune’s work can be found on pages 73 and 80.

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Rapid Intraoperative Parathyroid Hormone Assay in the Surgical Management of Hyperparathyroidism

By Craig M Nelson, PhD, CLS
Noel S Victor, MD

Abstract
Context: Historically, successful surgical management of primary hyperparathyroidism has required bilateral exploration of the neck. By confirming complete removal of hypersecreting tissue, an intraoperative parathyroid hormone (IO-PTH) assay allows use of a more limited procedure.
Objective: Our objective was to evaluate the utility of IO-PTH assay used in 32 parathyroid explorations versus conventional bilateral exploration used before the advent of IO-PTH assays.
Methods: Minimally invasive parathyroidectomy (MIP) was used. Plasma samples were obtained at several intervals and were analyzed for IO-PTH by use of a rapid immunoluminescent assay (ICMA). Outcomes were assessed by univariate inferential testing, yielding one-tailed t-test results.
Results: The study group had a mean plasma IO-PTH level decrease of 87% at ten minutes after excision. All 32 patients who underwent MIP using IO-PTH monitoring had successful surgery. At last postoperative follow-up examination, all 32 patients were normocalcemic. There were statistically significant decreases in duration of surgery, length of hospital stay, and surgery cost.
Conclusions: IO-PTH levels predicted the postoperative outcome for all patients studied, can provide valuable information to surgeons, and can decrease the duration of surgery and hospital stay.

Introduction
Primary hyperparathyroidism (PHPT) has become a common disease, affecting an estimated 28 per 100,000 people each year in the United States. Increased recognition of PHPT—resulting from advances in screening tests—has produced a clinical profile of hyperparathyroidism characterized by mild hypercalcemia with absent or subtle symptoms. The number of parathyroidectomies performed for PHPT has also increased dramatically since 1996. In the surgical management of PHPT, intraoperative PTH (IO-PTH) assays have been shown to improve the success of parathyroid gland surgery. Minimally invasive parathyroidectomy (MIP) has replaced the traditional four-gland bilateral exploration as the procedure preferred by many institutions.

Surgical treatment of PHPT is challenging and carries uncertainty concerning presence or absence of disease in a single gland, two glands, or several hyperplastic glands. Sestamibi scans can provide some information about locating adenomas, but they may not be sensitive enough to detect second adenomas or multigland hyperplasia. Historically, endocrine surgeons have performed bilateral exploration to ensure detection of the reported 5% to 30% incidence of second hyperplastic glands. The success of surgical treatment depends on successfully localizing abnormal glands. Difficulties associated with parathyroidectomy relate to variability in the number of parathyroid glands, different locations of normal and abnormal glands, and problems distinguishing normal from subtly diseased glands.

Although 80% to 85% of parathyroid adenomas are found adjacent to the thyroid gland in its normal location, 15% to 20% are ectopic.
immunochemiluminescent assay (ICMA) in patients undergoing exploration for parathyroid adenoma or multigland hyperplasia. The status of the IO-PTH assay has shifted from investigative to routine clinical tool, the test allows a more limited procedure by confirming complete removal of hypersecreting tissue. It also reduces the need for repeat surgeries and reduces the extent of neck exploration in patients with single-gland disease.

**Methods**

The Kaiser Permanente Southern California Institutional Review Board approved this study. MIP using IO-PTH assays was performed for 32 patients at the Kaiser Permanente (KP) Fontana Medical Center, Fontana, California, between August 2003 and June 2006. Rapid IO-PTH assays were used primarily to determine whether all hyperfunctioning tissue had been removed. In one patient, the MIP was a repeat surgical exploration necessitated by a failed parathyroid surgery done at a non-KP medical center; one patient showed multigland hyperplasia and one exhibited secondary hyperparathyroidism.

We used the Immulite analyzer (Diagnostic Products Corporation, Los Angeles, CA), which employs a solid-phase goat polyclonal anti-PTH and an alkaline phosphatase-labeled mobile-phase goat polyclonal anti-nPTH antibody. The standard PTH assay in the Immulite analyzer has a 60-minute incubation time, requires a serum sample, and has an analytic range of 5 to 5000 pg/mL. The testing method used in this study was a second-generation Immulite PTH assay: the Turbo Intact PTH assay, which shortens incubation time to 14 minutes and produces an analytic range of 10 to 2500 pg/mL. Our laboratory uses a rolling turbo cart with a StatSpin Express 2 primary tube centrifuge (StatSpin, Inc, Norwood, MA) and an uninterrupted power supply for point-of-surgery testing during MIP.

To determine the assay’s clinical utility, we performed univariate inferential testing for duration of surgery, duration of hospital stay, and surgery cost. We wanted to have at least a 95% likelihood of true decreases in these parameters. Our hypotheses were tested with a one-sample, one-tailed t-test.

**Results**

Figure 1 shows the percentage decrease in PTH levels for each of the 32 patients ten minutes after excision. Figure 2 shows the patients’ t-test data.

At our institution, historical mean duration of surgery needed to complete bilateral parathyroid explorations was 210 minutes. This mean reflected length of surgery per bilateral exploration done during the year before advent of MIP with IO-PTH assay.

Our mean time for MIP with IO-PTH assay was 119 minutes, a 43% decrease, with \( t = 2.111 \) (critical value for \( t \) \( .025,31 \) was 2.039). Thus, we estimate a 97.5% likelihood that the mean duration of surgery was decreased by 38% using MIP with IO-PTH assay, compared with the mean duration of surgery for bilateral exploration (Figure 2).

Mean length of hospital stay was also reduced by MIP, compared with the mean duration of hospital stay observed before advent of MIP with IO-PTH assay. Historically, the mean historical duration of hospital stay was 1.3 days. For patients undergoing MIP with IO-PTH assay at our institution, the mean duration was 0.65 days, a 54% decrease \( t = 2.073 \) vs the critical \( t \) table value of
Figure 2. Data from t-test for 32 patients who underwent minimally invasive parathyroidectomy.

2.039). This yields an estimated 97.5% likelihood (p = .025) that, compared with hospital stay required after bilateral exploration, mean duration of hospital stay was decreased by 40% by using MIP (Figure 2).

Historically, the reported mean surgical cost of bilateral exploration in the US during our study period (August 2003 through June 2006) averaged $6865. This figure includes a surgical cost of $4135, as well as a 1.5-day hospital stay, costing $2730. The mean estimated cost for our 32 patients was $3194, 53.4% lower than the reported US average. The estimated t-test value for this comparison was 1.828 (vs 1.695 cited as the critical value in the t table, indicating a 95% likelihood [p = .05] that MIP reduced mean cost per surgery by 45%).

Collectively, the 32 patients had an 87% mean decrease in PTH level measured at ten minutes after excision. Calcium levels of all 32 patients remained normal at last postoperative follow-up examination, and none of the patients showed persistent or recurrent hyperparathyroidism at follow-up examination.

Discussion
Criteria for Predicting Cure

Chemical assays used for intraoperative determination of adequate resection rely on the specific, unique products produced by the parathyroid glands. Whereas standard PTH assays, with routine incubation times and temperatures, can require more than an hour, the rapid PTH assay generally has a higher incubation temperature, uses an agitation cycle, and has a shorter incubation time. First-generation PTH assays were radioimmunoassays, a methodology seldom used today because of lengthy turn-around time and poor diagnostic utility. Test methodology has greatly improved in the second- and third-generation assays, which include immunoradiometric assay (IRMA) and the more current ICMA method.

IRMAs and ICMA use an excess of capture antibody specific for one end of the PTH molecule. The capture antibody is bound to a solid phase, commonly a bead. After blood specimen collection, serum or plasma is separated and an aliquot is added to the solid phase along with the capture antibody. The PTH in the specimen binds to the capture antibody during incubation. Next, the signal antibody is added because it recognizes an immunologic site (on the PTH molecule) distinct from the site recognized by the capture antibody. After unbound material is removed, the bound signal is measured. The signal output is directly proportional to the level of PTH present in the specimen.

The IRMAs—considered second-generation assays—have disadvantages that are substantially overcome by ICMAs, the third-generation assays. The latter have a long shelf life (six months or longer), are technically easy to use, do not require radioactive safety precautions, and have high analytic accuracy. Portable ICMA automated formats are available so that monitoring can be done directly in the operating room. Carter and Howanitz calculated the cost of reagents for the Immulite turbo assay to be $100.00 per surgery. Our actual cost per surgery averaged $80.00.

The IO-PTH concentration used to indicate a surgical cure relied on the half-life of the PTH molecule and on the postresection interval after which the specimen was drawn.

As our main criterion, we used a >50% drop in PTH measured at ten minutes after resection. When a patient’s PTH level has decreased and been maintained at a level 50% below the baseline value (determined at commencement of surgery), the surgeon can be confident that production of PTH has ceased as a result of complete excision of all hypersecreting tissue. We routinely drew four samples for PTH assay: the preincision baseline sample, the postincision–preexcision (second) baseline sample, the sample drawn five minutes after excision, and the sample drawn ten minutes after excision. The second baseline sample was drawn to determine stability of the original baseline. The higher of the two baseline values was used as our working PTH baseline, from which we calculated the required ≥50% decrease in PTH level.

Comparison with the Literature

Many studies have now demonstrated the clinical utility of IO-PTH testing, which has proven highly effective for predicting the success of MIP done for primary hyperparathyroidism. All of our 32 patients had successful...
surgery, and there were statistically significant decreases in duration of surgery, duration of hospital stay, and surgery cost. Of course, continued follow-up is needed.25

Udelsman's review of 650 cases21 showed that among patients having conventional bilateral explorations without IO-PTH assays, nearly 18% required repeat surgery. Thus, by extrapolation, we might have expected a need to reoperate in about six of our 32 patients. Experienced surgeons can appreciate the promise this technique offers for eliminating the risk of missing hypersecreting tissue.

Future investigations for IO-PTH assays might include evaluating their role in guiding surgeons performing parathyroid surgery in patients with secondary hyperparathyroidism, surgeons performing bilateral exploration in patients with ectopic second adenomas, and surgeons performing parathyroid tissue autotransplantation when surgical hypoparathyroidism might be a risk.❖

Acknowledgment

Katharine O'Moore-Klopf of KOK Edit provided editorial assistance.

References


Perinatal Loss Among Twins

Abstract

Objective: We evaluated prenatal factors related to perinatal loss in twins, using medical records and death certificates, to determine the main perinatal event that contributed to babies’ deaths.

Design: This was a retrospective cohort study of 550 monochorionic diamniotic or diamniotic dichorionic twins who were delivered at Kaiser Permanente Colorado between 1994 and 2001.

Main Outcome: The main outcome of the study was perinatal loss (stillbirth or neonatal death).

Outcomes Measures: Select maternal risk factors (maternal age, race, marital status, assisted conception, past history of preterm birth, cigarette smoking, and placenta) were included in the univariable and multivariable logistic regression analysis. Data on these risk factors came from review of records from our multiple-birth perinatal database. A comprehensive review of clinical events recorded in the medical records and on the death certificate was conducted to assess the main event that contributed to the loss.

Results: In the cohort of 1100 babies, there were 12 stillbirths and 34 neonatal deaths, with an overall frequency of perinatal loss of 4.2%. We found a strong association between a monochorionic diamniotic placenta and perinatal loss (adjusted odds ratio, 3.9; 95% confidence interval, 2.7, 7.7). At delivery, placental pathology and spontaneous preterm birth accounted for 36% and 41%, respectively, of the clinical events contributing to the demise. Compared with the medical record, review of death certificate information did not contribute significantly to the understanding of the sequence of perinatal events leading to the demise.

Conclusions: We conclude that loss in twins is most strongly associated with monochorionic diamniotic placenta. Although this condition is not preventable, early identification (by ultrasound) and referral to subspecialists may decrease the chances of perinatal loss. Prevention of spontaneous preterm birth in all women remains an important initiative in obstetric care to reduce perinatal mortality and neonatal morbidity. We believe that improvements in the reporting on death certificates will allow future research on large data sets and may provide further insight into perinatal loss in twins. We emphasize the importance of a comprehensive clinical review of each case of perinatal loss to fully understand the sequence of clinical events leading to this adverse pregnancy outcome.

Introduction

In the United States the twinning rate has increased 38% since 1990 and 65% since 1980.1 Two principal reasons for this upsurge are the increased availability of and demand for assisted conception and the larger numbers of women who are deferring childbearing until later in life.2 We have known for many years that multiple births are associated with a higher risk of perinatal loss.3,4 The natural history of events preceding multiple birth demise is complex, however. Its study requires assimilation of information from many sources. We now recognize that risk factors early in the antenatal history and course may have a significant impact on the outcome, yet these major contributory factors may be viewed as remote and may be overlooked or not made available to health care professionals completing death certificates.

The changing epidemiology of multiple births led our research group to study the incidence and factors contributing to perinatal loss among twins in a Colorado multiple birth cohort. We designed our own system for reviewing each case of perinatal loss. After this review, we developed a model of prenatal risk factors for perinatal loss and determined the main perinatal clinical event that contributed... risk factors early in the antenatal history and course may have a significant impact on the outcome...
to the baby’s death using information from the medical record and the death certificate.

Materials and Methods

Review of the records of this retrospective cohort of 550 twins (delivered between 1994 and 2001) was approved by the Kaiser Permanente (KP) Northern California Institutional Review Board. The twins were born to women who were KP members at the time of delivery. All mothers received coordinated care from KP obstetric providers. Routine referral to maternal fetal medicine specialists was made by 20 weeks’ gestation for consultation and development of a plan for care in the second half of pregnancy. Women were monitored with serial ultrasound examinations of twins and digital cervical examinations. Repeat twin births, twins born before 20 weeks’ gestation, and monochorionic monoamniotic twins were excluded from the data analysis.

Study outcomes were stillbirth, neonatal mortality, and perinatal mortality (a composite of stillbirths and neonatal deaths). Stillbirth was defined as the intrauterine demise of the fetus after 20 weeks’ gestation. A neonatal death was the death of the baby during the first 28 days of life. Data on stillbirth and early neonatal death (within the first few hours of life) were obtained from a multiple-birth perinatal database, described in detail elsewhere.5–7 Information on deaths later in the neonatal period was primarily obtained from the KP Colorado administrative databases (where information is routinely gathered on deaths of members). We also investigated all stillbirths and neonatal deaths among twins born at Colorado’s KP facilities during the study period using the Colorado Department of Public Health and Environment (CDPHE) matched infant birth and death database. In the state of Colorado, all cases of fetal death are required by law to be submitted to the CDPHE irrespective of gestational age. We reviewed data from multiple sources to ensure that we were missing no cases of perinatal loss. We linked deaths from the CDPHE database to our twin database using the mother’s date of birth and the delivery date of the baby. We imported fields from this database describing the main cause of death, contributory causes of the baby’s death, and pregnancy complications. The fields contained codes from International Classification of Diseases, 9th Revision, and International Statistical Classification of Diseases and Related Health Problems, 10th Revision, that were subsequently decoded to assist our review.

Risk factors examined in this study included maternal age (≥35 years versus <35 years), race (African American versus others), marital status (married versus single), assisted (ovulation induction or assisted reproductive technologies) conception (yes or no), past history of a preterm delivery (yes or no), cigarette smoking during pregnancy (yes or no), and placentation as outlined below. Data on these risk factors were obtained from our multiple-birth perinatal database. These factors were chosen on the basis of our previous experience with this cohort5–7 and of the existing literature on this topic.8

Placentation was classified as monochorionic diamniotic or dichorionic diamniotic. We assumed that all twins who were of the opposite sex (n = 72) were dichorionic diamniotic. The placental histology was reviewed on the remaining 478 sets of twins to determine their chorionicity. A diagnosis of twin-to-twin transfusion was made on the basis of prenatal ultrasound evidence of monochorionic diamniotic placentation (single placenta, absence of twin peak sign, thin membrane, same twin sex), clinical evidence of polyhydramnios in the recipient twin and oligohydramnios in the donor twin, discordant growth, and findings on postnatal placental examination confirming diamniotic monochorionic placentation with shared placental vascularity. All cases of twin-to-twin transfusion were managed by maternal fetal medicine specialists and were treated with reduction amniocentesis at the discretion of the provider. None of these patients had laser ablation of the vascular connections in the placenta.

All cases of perinatal death were reviewed by Drs Lynch and McDuffie. The maternal medical record, the baby’s medical record, pathology records, and information on the death certificate were studied and discussed on each of the 46 cases of perinatal death. The purpose of the review was to determine the main perinatal event that contributed to the baby’s death. A third reviewer was consulted on four cases where there was difficulty reaching a consensus about the cause of death.

Statistical Analysis

The data were analyzed in SAS 9.1 (SAS Institute, Cary, NC). First, we determined the association of the risk factors with perinatal loss. The relative risk (RR) was used as a measure of association. Measures of association were tested using the χ²-square or Fisher exact test. Statistics are presented with 95% confidence intervals (CI; p < .05). We developed a multivariable logistic regression model to determine the independent association of each of these risk factors with perinatal loss.
The odds ratio (OR) was used as an approximation of the RR. We described the major determinant of perinatal death as concluded from our medical record review and the clinical information on the death certificate using descriptive univariable statistics.

**Results**

There were 550 women with twin gestations in the cohort. Of those, 424 (77%) women were non-Latina White, 61 (11%) were Latina, 48 (9%) were African American, and 17 (3%) were of other races. There were 193 pregnancies (35%) that resulted from assisted conception. Diamniotic dichorionic placentas were found in 439 (80%) of the twin gestations, and the remaining 110 (20%) placentas were monochorionic diamniotic. Histology of the placenta for one set of twins was missing. Eighteen (3.3%) pregnancies resulted in the twin-to-twin transfusion syndrome.

Table 1 shows the RR of early pregnancy risk factors for perinatal loss among 1110 births from 550 twin pregnancies. The odds ratio (OR) was used as an approximation of the RR. There was a strong association between monochorionic placentaion and perinatal death. In addition, we found that women whose fetuses had twin-to-twin transfusion syndrome were more likely to have a perinatal death than women whose fetuses did not have the syndrome. Race (African American), marital status (single), nulliparity, and cigarette smoking were associated with an elevated risk of perinatal loss. However, these associations were not statistically significant. Adjusted for other risk factors, the OR of monochorionicity for perinatal loss was 3.9 (CI, 2.7-7.7).

There were 46 (4.2%) perinatal deaths during the study period. However, when we removed cases of twin-to-twin transfusion from the data set, the incidence of perinatal death decreased to 3.3%. Twelve were stillbirths and 34 were neonatal deaths (Table 2). The mean (± SD) gestational ages (weeks) at delivery of the stillborn infants and of the infants who died after birth were 30 ± 6 and 25 ± 4 weeks, respectively. Fifteen pairs of twins died. In the remaining 16 perinatal deaths, one of the twin pair survived (twin A = 6; twin B = 10).

The main perinatal events contributing to loss are shown in Table 2. After medical record review, we found that in 17 (37%) cases, a significant perinatal event preceded the death and was related to a problem with the placenta (twin-to-twin transfusion, placenta previa, placental abruption). The incidence of perinatal mortality due to twin-to-twin transfusion was evenly distributed among the stillbirths and neonatal deaths. Deaths as a result of placental abruption or placenta previa were limited to the neonatal period. Further, we found that 19 (41%) were related to spontaneous preterm birth (preterm premature rupture of the membranes, cervical incompetence, preterm labor, primary chorioamnionitis with preterm birth). All of the perinatal deaths associated with chorioamnionitis, preterm labor, or congenital anomalies occurred in the neonatal period. Of five cases of cervical incompetence, three involved a congenital uterine anomaly that had been surgically corrected. Four deaths were due to congenital anomalies. Five perinatal deaths could not be assigned a definite cause of death. Interestingly, all of these five babies...
... review of the information from the death certificate did not contribute significantly to the understanding of the sequence of perinatal events leading to the demise.

died in utero. In spite of repeated review of these cases, we were unable to identify a major clinical event in the time near the demise. The only indication of an intrauterine disturbance was the finding of unexplained intrauterine growth restriction in two of these unexplained cases.

All of the stillbirths and neonatal deaths in our database were also found in the database at the CDPHE. The cause of death was listed as "stillbirth" on the death certificate in 11 cases. One stillborn infant who died from complications of twin-to-twin transfusion was assigned an underlying cause of death of "renal disease." Twenty-one (61%) of the neonatal deaths were attributed to perinatal loss compared with women with a dichorionic diamniotic placenta. Women whose pregnancies later developed twin-to-twin transfusion were over three times more likely to have a perinatal loss compared with women with a dichorionic diamniotic placenta. Women whose pregnancies later developed twin-to-twin transfusion were nine times more likely to have developed twin-to-twin transfusion syndrome. Twenty-one (61%) of the neonatal deaths were attributed to perinatal loss compared with women with a dichorionic diamniotic placenta. Women whose pregnancies later developed twin-to-twin transfusion were over three times more likely to have a perinatal loss compared with women with a dichorionic diamniotic placenta. Women whose pregnancies later developed twin-to-twin transfusion were nine times more likely to have developed twin-to-twin transfusion syndrome.

## Discussion

We found a monochorionic diamniotic placenta was the leading prenatal risk factor for perinatal loss. Adjusted for other risk factors, women with a monochorionic diamniotic placenta were over three times more likely to have a perinatal loss compared with women with a dichorionic diamniotic placenta. Women whose pregnancies later developed twin-to-twin transfusion were nine times more likely to have an infant who died than were women whose pregnancies did not have this adverse complication. The leading perinatal events that contributed to perinatal loss were abnormalities of the placenta and spontaneous preterm birth. Compared with the medical record, review of the information from the death certificate did not contribute significantly to the understanding of the sequence of perinatal events leading to the demise.

The finding of monochorionic diamniotic placentation as the leading early risk factor for perinatal loss agrees with the results of a similar study from Norway. None of the other risk factors included in our analysis were significantly associated with perinatal death. We acknowledge that this is a study with a small sample size and a retrospective review of clinical information. We were unable to confirm the contribution of some risk factors to perinatal loss (eg, race, birth order), possibly because of the small number of study subjects. We did not examine the contribution of the route of delivery to the outcome because the decision to perform a cesarean delivery was based on standard maternal fetal indications, and in fact, all of the stillbirths occurred prior to delivery, so the route of delivery did not make a difference to this outcome. However, the study’s strengths include its population-based nature, completeness of ascertainment thorough confirmation by state records, and uniform care by one group of health care providers.

Monochorionic diamniotic placentation occurs because of division of the embryo three to four days after conception. It is therefore an event that occurs very early in pregnancy and is associated later with twin-to-twin transfusion syndrome. Although we determined placentation

### Table 2. Major clinical events among 46 cases of perinatal loss in a cohort of 1100 babies from 550 twin pregnancies

<table>
<thead>
<tr>
<th></th>
<th>Total number of cases of perinatal loss (n = 46)</th>
<th>Stillbirth (n = 12)</th>
<th>Neonatal loss (n = 34)</th>
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<tr>
<td></td>
<td>N</td>
<td>Percentage</td>
<td>N</td>
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<tr>
<td>Twin-to-twin transfusion</td>
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<td>24</td>
<td>3</td>
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<td>11</td>
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in the postnatal period, we believe that it is justified to include placentation as a risk factor because determination of chorionicity can be made reliably in the first half of pregnancy on the basis of ultrasound criteria (eg, single placenta, same sex, thin membrane separating embryos).

There were five deaths for which we could find no cause. Interestingly, these were all stillbirths. The fetuses were delivered at somewhere between 30 and 35 weeks’ gestation. In two cases, the mothers had intrauterine growth restriction, which brings into question the role of the placenta in this select group of unexplained stillbirths. It is concerning that in a high proportion of the stillbirths, the cause of death on the death certificate was listed as stillbirth or prematurity, with no further details given. The use of these terms does not reflect the pathophysiology of loss and contributes little to the understanding the predominant clinical events leading to the loss. The National Institute of Child Health and Human Development and other researchers acknowledged these frustrating gaps in our explanation of the cause and other issues surrounding stillbirth. These and other data gaps have also been discussed by other authors.\textsuperscript{18-19}

In 2001, a workshop was convened to set a national agenda for stillbirth research. This workshop resulted in funds being allocated for the study of the scope, cause, and pathogenesis of stillbirth, which is currently underway at five sites across the United States.\textsuperscript{20} Our review concluded that cause-of-death information on the death certificates reflected the dominant clinical event in the baby at the time of death. In the majority of cases, these were prematurity-related problems. However, the cause of death did not take into account the prenatal problems that contributed to the prematurity. We emphasize the need to retrace the sequence of events that leads to these adverse outcomes and to comprehensively review each case of perinatal death. We were encouraged that all stillbirths were reported to the CDPHE and that there was no discordance in the reporting of congenital anomalies. These are problems that have been reported by other authors.\textsuperscript{17}

Among most cases of perinatal death in our cohort, the main perinatal event contributing to the demise of the baby was determined clinically, and in only a small proportion of cases was the underlying cause unclear, requiring closer investigation and a second opinion. However, to the emotionally traumatized parents, all of these events are complex and require explanation. We propose a comprehensive review of all cases of perinatal death followed by an interview with the parents, which should include not only a complete explanation of the events leading to the demise but also a referral to local and national perinatal loss support organizations (see sidebar).\textsuperscript{21,22}

We conclude that loss in twins is most strongly associated with monochorionic diamniotic placentation. Although this condition is not preventable, early recognition and referral to subspecialists may improve the outcome. Prevention of spontaneous preterm birth in all women remains an important initiative in obstetric care to reduce perinatal mortality and neonatal morbidity. We hope that improvements in the reporting on death certificates will allow future research on large data sets and may provide further insight into perinatal loss in twins.

### Prevention of spontaneous preterm birth in all women remains an important initiative in obstetric care ...

#### Some suggested resources for patients suffering perinatal loss

- www.CLIMB-support.org
- www.twinlesstwins.org
- www.compassionatefriends.org
- www.nationalSHAREoffice.com
- www.marchofdimes.com
- www.forgottengrief.com
- www.missfoundation.org
- www.coloradopregnancyloss.org
- www.hospicecareonline.org

Resource specifically addressing twin-to-twin transfusion:
- www.tttsfoundation.org

These are just a few of the national resources available on the Internet; many more local and national resources are available.

#### Acknowledgment

Katharine O’Moore-Klopf of KOK Edit provided editorial assistance.

#### References


A Hard Battle

Be kind, for everyone you meet is fighting a hard battle.

— Plato, C 427-347 BCE, Greek philosopher and educator
Heart Failure Etiology Is Usually Pluricausal Whether or Not There is Associated Coronary Disease

Abstract

The heart failure syndrome (HF) has diverse etiologies. In a 22-year study of predictors of HF in 126,235 persons, we attempted to identify etiologic factors independent of associated coronary heart disease (CAD) in 2594 persons hospitalized for the condition. For this purpose, subjects were stratified according to whether CAD was present. Of the subjects, 60% had evidence for CAD (CAD-HF). Because we also wished to study HF predictors in subjects without associated CAD according to specific HF etiology, the paper records of the other 40% of subjects (non-CAD-HF) underwent a detailed review so that we could determine the apparent primary etiology and contributory factors. A random sample of all subjects with CAD-HF underwent a similar paper record review so that we could ascertain contributory factors. The primary etiology among the subjects with non-CAD-HF was categorized as systemic hypertension (HTN) in 354, valve disease in 110, cardiomyopathies (including alcoholic and idiopathic) in 93, other specific miscellaneous in 55, and primary etiology not evident (unclear) in 423. The unclear-group subjects generally had multiple probable contributing factors. In addition to the preponderant etiology in subjects with non-CAD-HF, the mean number of contributory factors was 1.5; among subjects with CAD-HF, the mean number of contributory factors was 1.9. Frequent additional factors, in both CAD-HF and non-CAD-HF, were HTN, diabetes mellitus, atrial fibrillation, and heavy alcohol consumption. These data show that primary HF etiology is often uncertain and that HF etiology is usually multifactorial, whether or not CAD is present.

Introduction

The heart failure (HF) syndrome has diverse etiologies, with comorbid conditions often contributing to HF development or recurrence.1–5 Causes of HF have traditionally been classified by singular disease processes (eg, coronary artery disease [CAD], hypertension [HTN], valve disease), but clinicians understand the importance of dealing with all remediable factors.1,6 The concept of multiple risk factors, well established for CAD, is increasingly being applied to primary and secondary HF prevention.1,4,6

Atherosclerotic CAD is considered the major cause of HF in developed countries.5,6,7 Thus, established CAD risk factors, such as diabetes mellitus, HTN, smoking, and lipid abnormalities would be expected to predict HF associated with CAD.5,7 In a study intended as an analysis of HF precursors in a large population, we sought to minimize the confounding problem introduced by the CAD relation, by separating analyses of predictors of HF associated with CAD (CAD-HF) and of HF not associated with CAD (non-CAD-HF). We also attempted stratification of subjects with non-CAD-HF by evident cause. The classification efforts proved their value by showing apparent disparate roles of alcohol in CAD-HF and non-CAD-HF.8 Although the classification process was intended to be part of the infrastructure of the study and not a data endpoint, we were surprised by some of the results, especially the difficulty in assigning an evident cause in many subjects with non-CAD-HF. Because we believe that others might also benefit from the lessons we learned, we present our observations here. Our data strongly reinforce the wisdom of the multiple risk factor approach to HF etiology.

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**Materials and Methods**

**Study Population and Data**

The study protocols were approved by the Institutional Review Board of the Kaiser Permanente Medical Care Program. All subjects gave written informed consent for use of data. Baseline data for 1978 to 1985 were from health examination questionnaires completed by 126,235 members of a comprehensive prepaid health care program in San Francisco and Oakland, California. The examination included self-classified ethnicity, health measurements, and queries about sociodemographic status, habits, and medical history.

**HF Ascertainment**

We screened Health Plan data for persons with ≥1 primary hospitalization discharge diagnosis of code 428 (“heart failure”) from the International Classification of Diseases, 9th Revision, Clinical Modification through December 2000. This yielded a group of 2787 persons. Accepted as having CAD-HF without paper record review confirmation were 880 subjects with separate discharge diagnoses of acute myocardial infarction, a coronary intervention, or an angiogram showing occlusion of ≥50% diameter of at least one major vessel. All other records were reviewed for confirmation of HF, using the Framingham Heart Study HF criteria, and for classification as CAD-HF or non-CAD-HF. We excluded 193 persons, mostly as not having HF. Of the remaining 2594, 60% (1559) were classified as having CAD-HF and 40% (1035) were classified as having non-CAD-HF.

We performed detailed review of all 1035 subjects with non-CAD-HF, attempting to identify a single probable preponderant HF etiology. Strict criteria for HF were used for classification of preponderant etiology as HTN, valvular disease, various cardiomyopathies, etc. Attribution to idiopathic dilated cardiomyopathy required that there be no apparent preponderant cause or major factors. Alcoholic cardiomyopathy required evidence of heavy alcohol intake as the only potential major factor. If there were contributing factors but none seemed severe enough to be the cause of HF, the etiology was labeled unclear. Probable contributing factors in addition to the preponderant etiology were tabulated for the 1035 subjects with non-CAD-HF. For comparison with respect to contributory factors, we did a similar detailed review of a randomly selected subset (n = 263) of all subjects with CAD-HF.

When data were available (81% of subjects with a paper record review), we also classified subjects according to left ventricular (LV) systolic function. If an ejection fraction (EF) estimate was available (n = 670), it was used to stratify LV function as good (EF ≥ 50%), fair (EF = 35%–49%), or poor (EF < 5%). If an imaging study stated no EF, we used written subjective evaluations (n = 382) or fractional shortening data (n = 26).

Further details about methodology have been published.

<table>
<thead>
<tr>
<th>Group</th>
<th>Study group n (column %)</th>
<th>CAD-HF n (column %)</th>
<th>Non-CAD-HF n (column %)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>126,235 (100)</td>
<td>1559 (100)</td>
<td>1035 (100)</td>
</tr>
<tr>
<td>Men</td>
<td>55,658 (44.1)</td>
<td>874 (56.1)</td>
<td>460 (44.4)</td>
</tr>
<tr>
<td>Women</td>
<td>70,577 (55.9)</td>
<td>685 (43.9)</td>
<td>575 (55.6)</td>
</tr>
<tr>
<td>Age &lt; 50 years</td>
<td>89,311 (70.7)</td>
<td>219 (14.0)</td>
<td>182 (17.6)</td>
</tr>
<tr>
<td>Age &gt; 50 years</td>
<td>36,924 (29.3)</td>
<td>1340 (86.0)</td>
<td>853 (82.4)</td>
</tr>
<tr>
<td>Black</td>
<td>34,109 (27.0)</td>
<td>494 (31.7)</td>
<td>390 (37.7)</td>
</tr>
<tr>
<td>White</td>
<td>69,970 (55.4)</td>
<td>911 (58.4)</td>
<td>550 (53.1)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5655 (4.5)</td>
<td>39 (2.5)</td>
<td>29 (2.8)</td>
</tr>
<tr>
<td>Asian</td>
<td>13,467 (10.7)</td>
<td>90 (5.8)</td>
<td>51 (4.9)</td>
</tr>
<tr>
<td>Other</td>
<td>3084 (2.4)</td>
<td>25 (1.6)</td>
<td>15 (1.5)</td>
</tr>
<tr>
<td>College graduate</td>
<td>45,406 (35.7)</td>
<td>282 (18.1)</td>
<td>175 (16.7)</td>
</tr>
<tr>
<td>Smoke ≥1 pack of cigarettes per day</td>
<td>11,530 (9.1)</td>
<td>187 (12.0)</td>
<td>113 (10.8)</td>
</tr>
<tr>
<td>Alcohol: 1 or 2 drinks/day</td>
<td>22,695 (17.8)</td>
<td>236 (15.1)</td>
<td>196 (18.9)</td>
</tr>
<tr>
<td>Alcohol: ≥3 drinks/day</td>
<td>10,192 (8.0)</td>
<td>116 (7.4)</td>
<td>108 (10.4)</td>
</tr>
<tr>
<td>BP &gt; 149/90 mmHg</td>
<td>39,233 (30.1)</td>
<td>1,187 (76.1)</td>
<td>778 (74.0)</td>
</tr>
<tr>
<td>Total cholesterol in 4th quartile</td>
<td>31,705 (25.0)</td>
<td>854 (54.8)</td>
<td>423 (40.3)</td>
</tr>
<tr>
<td>Blood glucose in 4th quartile</td>
<td>29,250 (25.0)</td>
<td>873 (56.0)</td>
<td>488 (46.6)</td>
</tr>
<tr>
<td>4th quartile BMI ≥30 kg/m²</td>
<td>14,346 (11.3)</td>
<td>400 (29.2)</td>
<td>284 (26.9)</td>
</tr>
</tbody>
</table>

*Not all subjects had a record of a test; the percentage is of those with a test.

BMI = body mass index; BP = blood pressure; CAD = coronary artery disease; HF = heart failure.
Heart Failure Etiology is Usually Pluricausal Whether or Not There is Associated Coronary Disease

Table 2. Selected baseline traits of largest etiologic subgroups among subjects with non-CAD–associated heart failure

<table>
<thead>
<tr>
<th>Study group (percentage of total)</th>
<th>HTN (n = 354) column %</th>
<th>Valve disease (n = 110) column %</th>
<th>CM (n = 93) column %</th>
<th>Unclear (n = 423) column %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men (44)</td>
<td>39</td>
<td>39</td>
<td>48</td>
<td>50</td>
</tr>
<tr>
<td>Women (56)</td>
<td>61</td>
<td>61</td>
<td>52</td>
<td>50</td>
</tr>
<tr>
<td>Age &lt; 50 years (71)</td>
<td>22</td>
<td>18</td>
<td>37</td>
<td>11</td>
</tr>
<tr>
<td>Black (27)</td>
<td>53</td>
<td>18</td>
<td>42</td>
<td>31</td>
</tr>
<tr>
<td>White (56)</td>
<td>36</td>
<td>66</td>
<td>45</td>
<td>61</td>
</tr>
<tr>
<td>College graduate (36)</td>
<td>11</td>
<td>21</td>
<td>16</td>
<td>19</td>
</tr>
<tr>
<td>Smoke ≥ 1 pack of cigarettes per day (9)</td>
<td>8</td>
<td>8</td>
<td>16</td>
<td>13</td>
</tr>
<tr>
<td>Alcohol: 1 or 2 drinks/day (18)</td>
<td>17</td>
<td>24</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>Alcohol: ≥ 3 drinks/day (8)</td>
<td>5</td>
<td>4</td>
<td>16</td>
<td>15</td>
</tr>
<tr>
<td>BP ≥ 149/90 mmHg (30)</td>
<td>85a</td>
<td>58</td>
<td>50</td>
<td>73</td>
</tr>
<tr>
<td>Total cholesterol in 4th quartile</td>
<td>40</td>
<td>35</td>
<td>44</td>
<td>40</td>
</tr>
<tr>
<td>Blood glucose in 4th quartile</td>
<td>51</td>
<td>35</td>
<td>34</td>
<td>48</td>
</tr>
<tr>
<td>BMI ≥ 30 kg/m² (11)</td>
<td>34</td>
<td>12</td>
<td>24</td>
<td>26</td>
</tr>
</tbody>
</table>

* Fifteen percent of persons were judged to have HF mostly because of HTN; they had a BP < 140/90 at the baseline examination, with other evidence of HTN.

BMI = body mass index; BP = blood pressure; CAD = coronary artery disease; CM = cardiomyopathy; HTN = hypertension.

Analytic Methods

Subjects were monitored until one of the following occurred: December 31, 2000, admission for HF at a Health Plan facility, or termination of Plan membership. The mean duration of follow-up was 14.4 years, yielding an estimated 1,820,200 person-years. Comparisons of proportions with individual underlying factors or combinations of factors entailed the use of c-square tests.

Results

Baseline Traits of Subjects with CAD-HF and Those with Non-CAD-HF

Persons with CAD-HF (vs non-CAD-HF) were more likely to be male, white, obese, and smokers but less likely to be college graduates or heavy drinkers (Table 1). Mean age at HF diagnosis was similar: 74.0 years for CAD-HF and 73.6 years for non-CAD-HF. Baseline HTN was present in approximately three quarters of both groups, but the highest quartile of total cholesterol and glucose levels were more prevalent in the CAD-HF group.

Baseline Traits of Etiologic Subgroups of Subjects with Non-CAD-HF

The preponderant HF etiology among subjects with non-CAD-HF (Table 2) was judged to be HTN in 354 (34%), valve disease in 110 (11%), cardiomyopathy in 93 (9%), and unclear in 423 (41%). The remaining 73 had other specific causes (eg, arrhythmia, infection, anemia). Among the 93 subjects with cardiomyopathy, 31 were judged to have alcoholic cardiomyopathy, 30 had other specific types, and 32 had idiopathic cardiomyopathy. Mean age at diagnosis was 72.6 years for those with HTN, 72.9 years for valve disease, 66.2 years for those with cardiomyopathy, and 76.3 years for the unclear group. Disproportionately represented were women in the HTN and valve disease groups and black persons in the HTN group. Smokers and heavy drinkers of alcohol were overrepresented in the cardiomyopathy and unclear groups, and persons with a high body mass index or high blood glucose level were overrepresented in the HTN group.

Contributing Factors

The subjects with CAD-HF averaged 1.9 factors in addition to CAD, making a total of 2.9 factors. Only 7% of those with CAD-HF had no additional factors, whereas 24% had ≥3. Subjects with non-CAD-HF averaged 1.5 factors in addition to the primary etiology, making a mean total of 2.5 probable factors; 20% of these had ≥3. Among unclear-group subjects, almost half (46%) had ≥3 factors. The small number of probable factors in the cardiomyopathy group (mean = 0.5) is a consequence of the exclusionary definitions of idiopathic dilated cardiomyopathy and alcoholic cardiomyopathy. The remaining subjects with cardiomyopathy, composed of several small groups (postpartum, infiltrative, hypertrophic), averaged 1.5 additional factors.
The frequencies of probable factors (Table 3) indicate important roles for HTN, diabetes, and atrial fibrillation in both CAD-HF and non-CAD-HF. The prominent role of HTN in non-CAD-HF is revealed by adding the 354 subjects considered to have HTN as the preponderant etiology to the 403 others with HTN as a probable factor, making a total of 757 (73% of those with non-CAD-HF). The role of heavy alcohol drinking in non-CAD-HF is shown by the 31 subjects with alcoholic cardiomyopathy and many of the 167 with alcohol as a probable factor, making a possible total of 198 (19%). By definition, atrial fibrillation was considered a factor if present at the time of HF diagnosis.

LV Function Categories

Combining the subjects with CAD-HF and those with non-CAD-HF with LV function data, the mean number of factors in addition to the primary etiology in 430 subjects with good LV function was 1.53; in 268 with fair LV function, it was 1.62; and in 378 with poor LV function, it was 1.62. These differences are not statistically significant. When subjects with CAD-HF and those with non-CAD-HF with LV function data were studied separately, there were also no significant differences between those in the various LV function categories in the number of additional factors (data not shown).

Discussion

HF Etiology Is Often Uncertain

We anticipated difficulty in ascertaining a preponderant cause in some subjects with non-CAD-HF but were surprised that the unclear subgroup was the largest subgroup. Most subjects in the unclear group had multiple apparent HF factors but no factor appearing strong enough to be assigned a primary role. Although we cannot rule out some degree of subjectivity in our judgments, we attempted to assign primary etiology in subjects with non-CAD-HF to create etiologic categories. We cannot quantitate the likelihood that the 41% of those with non-CAD-HF judged unclear is an underestimate or an overestimate. Whatever the actual proportion of unclear etiologies might be, the finding clearly indicates a need for caution when determining a cause of HF.

We did not attempt to determine whether CAD association with HF meant CAD etiology. The presence of CAD seemed likely to ensure the predictive power of CAD risk factors. Causality of CAD for HF involves a more difficult judgment than presence of CAD. It is not uncommon for patients with severe CAD but no history or evidence of myocardial infarction to develop HF. If myocardial infarctions from CAD are the usual basis of HF, some subjects assigned to the CAD-HF group by our criteria of CAD association might have HF as a consequence of other factors.

HF Usually Has More Than One Probable Causative Factor

Both the subjects with non-CAD-HF and those with CAD-HF usually had more than one probable causative factor (Table 4). The importance of HTN, atrial fibrillation, and diabetes mellitus for both non-CAD-HF and CAD-HF and of heavy alcohol consumption in non-CAD-HF comes as no surprise (Table 3). The substantial prevalence of valvular disease in subjects with CAD-HF is noteworthy and may reflect the presence of similar risk factors for both.

### Table 3. Probable HF factors in CAD-HF and non-CAD-HF

<table>
<thead>
<tr>
<th>Trait</th>
<th>CAD-HF (%)</th>
<th>Non-CAD-HF (%)</th>
<th>χ²-square value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Alone or in combination</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total n reviewed</td>
<td>263</td>
<td>1,035</td>
<td>—</td>
</tr>
<tr>
<td>HTN</td>
<td>78</td>
<td>38</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>41</td>
<td>25</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Atrial fibrillation</td>
<td>24</td>
<td>30</td>
<td>0.04</td>
</tr>
<tr>
<td>Heavy alcohol</td>
<td>10</td>
<td>16</td>
<td>0.02</td>
</tr>
<tr>
<td>Valve disease</td>
<td>18</td>
<td>7</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Licit drugs</td>
<td>9</td>
<td>6</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Renal failure (creatinine ≥ 2.0 mg/dL)</td>
<td>5</td>
<td>7</td>
<td>0.22</td>
</tr>
<tr>
<td>COPD</td>
<td>3</td>
<td>8</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Anemia (hemoglobin &lt; 10 g/dL)</td>
<td>2</td>
<td>5</td>
<td>0.01</td>
</tr>
<tr>
<td>Cancer</td>
<td>0.4</td>
<td>3</td>
<td>0.02</td>
</tr>
<tr>
<td><strong>Factor plus primary etiology (CAD-HF same as above)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HTN</td>
<td>78</td>
<td>72</td>
<td>0.04</td>
</tr>
<tr>
<td>Heavy alcohol</td>
<td>10</td>
<td>19</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Combinations of ≥2 factors</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>HTN/diabetes</td>
<td>37</td>
<td>11</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HTN/atrial fibrillation</td>
<td>15</td>
<td>14</td>
<td>0.55</td>
</tr>
<tr>
<td>HTN/alcacohol</td>
<td>7</td>
<td>11</td>
<td>0.06</td>
</tr>
<tr>
<td>Atrial fibrillation/diabetes</td>
<td>5</td>
<td>5</td>
<td>1.00</td>
</tr>
<tr>
<td>Atrial fibrillation/alcohol</td>
<td>4</td>
<td>5</td>
<td>0.52</td>
</tr>
<tr>
<td>Diabetes/alcacohol</td>
<td>6</td>
<td>4</td>
<td>0.08</td>
</tr>
<tr>
<td>Atrial fibrillation/valve disease</td>
<td>5</td>
<td>3</td>
<td>0.07</td>
</tr>
<tr>
<td>Atrial fibrillation/COPD</td>
<td>18</td>
<td>3</td>
<td>0.28</td>
</tr>
<tr>
<td>HTN/valvular</td>
<td>14</td>
<td>4</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>HTN/licit drug</td>
<td>7</td>
<td>2</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

*Randomly selected from 1559 subjects with CAD-HF.

1. Records of all subjects with non-CAD-HF were reviewed.

2. In addition to CAD association for subjects with CAD-HF, in addition to primary etiology for subjects with non-CAD-HF, except for “all HTN” and “all heavy alcohol.” Where not defined in the table, the etiology is a judgment from all available data. Other single factors with n ≥ 10 included bradycardia (n = 20), sleep apnea (n = 16), HF (n = 10), and illicit drugs (n = 10).

3. CAD = coronary artery disease; COPD = chronic obstructive pulmonary disease; HF = heart failure; HTN = hypertension.
Diabetes May Be an HF Factor Independent of CAD

In view of the association of diabetes mellitus with vascular pathology and endothelial dysfunction, undiagnosed atherosclerotic or microvascular CAD might explain the substantial apparent role of diabetes in non-CAD-HF. Additionally there may be an independent diabetes-specific cardiomyopathy. Reports suggest a disproportionate association of HF or LV dysfunction in persons with diabetes or poor glycemic control. The diabetic cardiomyopathy concept is further supported by evidence in patients with diabetes of myocyte glucolipotoxicity and various metabolic perturbations.

Strict Definitions Probably Reduce the Numbers in Some Categories

Exclusionary definitions resulted in small numbers of subjects with HF attributable to alcoholic or idiopathic dilated cardiomyopathy. Problems in defining these entities are well known. Alcohol cardiomyopathy is often subclinical and alcohol intake is often underestimated; some unclear-group subjects probably had alcoholic cardiomyopathy. The true prevalence of alcoholic cardiomyopathy is higher than the 3% of non-CAD-HF so labeled. Traits influencing development of alcoholic cardiomyopathy may include genetic factors, autoimmune phenomena, and other cardiotoxins.

There Are Unproven and Unknown HF Factors

An underlying genetic substrate probably underlies many cases of idiopathic dilated cardiomyopathy, is likely in alcoholic cardiomyopathy, and indeed may be present in some proportion of HF cases of almost any etiology. Several studies suggest the importance of psychosocial factors, especially depression, in HF risk. Other factors of possible importance in HF include postinfectious or other autoimmune conditions and nutritional factors. If we had been able to ascertain these traits, their addition would have increased the number of factors for many subjects with HF.

This study is limited by the descriptive nature of the data. Assignment of HF factors was based on judgments from chart review only of subjects with HF, precluding case-control comparisons. Use of HF hospitalization as an endpoint leaves unexplored factors in patients with milder HF who are not hospitalized. Incomplete follow-up due to Health Plan termination could affect the data if termination were systematically related to the traits studied. Incomplete chart review of subjects with CAD-HF, due to limited resources, resulted in a small proportion of cases of misdiagnosed HF and of CAD association. We consider it unlikely that any of these limitations affected our main results.

Conclusion

Ready attribution of HF to a single underlying cause often does not fit the facts. In a majority of cases, multiple contributory factors, rather than a specific medical diagnosis, are involved. It is time to retire the traditional disease-specific HF classification.

Acknowledgments

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References

Heart Failure Etiology is Usually Pluricausal Whether or Not There is Associated Coronary Disease


Things Done Quickly

Do not be desirous of having things done quickly. Do not look at small advantages. Desire to have things done quickly prevents their being done thoroughly. Looking at small advantages prevents great affairs from being accomplished.

— Confucius, 551-479 BCE, Chinese thinker and social philosopher
Communication Practices of Physicians With High Patient-Satisfaction Ratings

Introduction
How do primary care physicians with outstanding patient-satisfaction ratings communicate with their patients? Which specific practices distinguish them from less effective communicators on the basis of measured performance? To answer this question, we videotaped 92 adult primary care visits in Southern California and Hawaii and interviewed both physicians and patients separately. Each participating physician and patient viewed the tapes of the visit and shared their perceptions of the communication aspects of the visit. We also audiotaped these debriefing sessions. To identify successful physician communication practices, exam room visit behaviors and comments from the postvisit debriefs were coded and compared with each physician’s panel-level patient satisfaction. In the final section, we describe communication strategies reported by physicians with high patient-satisfaction ratings.

The quality of physician-patient communication in primary care visits is related to patient satisfaction, adherence, litigation, quality of data collection, utilization patterns, and clinical outcomes. There is evidence that communications between physicians and patients are sometimes inadequate. In addition, disruptive communications reduce the quality of worklife for physicians. Thus, improvement in physician communication skills has great potential for both the quality of medical care and for the physician work environment.

Methods
Participants
Physicians: Fifty-five adult primary care physicians from Southern California and Hawaii Kaiser Permanente (KP) clinics volunteered to be videotaped with their patients (one to four patients per physician). The physicians were stratified into three groups on the basis of patient-satisfaction ratings obtained from their patient panel. High Group physicians had mean ratings in the upper third of physicians within their region. Medium Group physicians had mean ratings in the middle third of physicians, and the Low Group physicians had mean ratings in the bottom third of the distribution.

Patients: We videotaped 92 adult primary care visits with patients who were already scheduled to see these physicians during the time of filming. We invited patients to participate in a videotaped visit with their physicians. To respect privacy, the camera was covered...
Communication Practices of Physicians With High Patient-Satisfaction Ratings

The goal was to identify communication practices that emerged from observed behavior rather than to test existing theories ...

during some physical examinations. Patients and physicians were informed that all comments would be completely anonymous.

**Audiotaping of Postvisit Commentary**
Following the exam room visit, the patients reviewed the videotapes of the visit with a research assistant to elicit comments on the visit (technique known as stimulated review or grounded ethnography). We asked patients to describe aspects of the communication that they found to be “new, different, or anything [they] liked or disliked about the communication.” Using the same protocol, the physicians reviewed the videotapes and commented on the visit.

**Narrative Analysis**
A qualitative analysis of the audiotaped debriefing was conducted, guided by the principles of grounded theory. Each tape was reviewed at least twice. Extensive notes were taken and potential coding categories were developed from the data using the constant comparative method. All the physician and patient debrief audiotapes were reviewed (blind to the satisfaction rating of the physician) to identify communication practices for exploration and to develop a coding system for these practices. The goal was to identify communication practices that emerged from observed behavior rather than to test existing theories and then to assess the association between these observed practices and patient satisfaction ratings. Behaviors were rated as present (1), intermediate (0.5), or absent (0).

Up to three sources of data were used for coding: researcher, patient, and physician perspectives. When two or three perspectives were present, it was possible to assess multiple perspectives on the same visit, ie, a form of triangulation. Sometimes the physician or the patient commented on a topic but not both. Occasionally the patient and the physician both commented on the same issue, but disagreed. In these cases, discrepancies were typically resolved in favor of the patient’s opinion. For example, if the patient believed the physician explained well, but the physician or the researcher did not, the patient’s opinion was used. Some categories were coded on the basis of researcher observations, such as the number of consecutive sentences of storytelling.

Additional detail on sources of data and priorities for resolving discrepancies are found in Table 1. Further details on the definition of the coded practices are included in the findings section. A large database was used to record notes, large sections of the visit dialogue, physician and patient comments, and to assign codes. The coder had no information on the physician’s patient satisfaction scores when performing the coding. Later the performance data was added to this database.

**Correlations Between Practices and Patient Satisfaction**
Physicians in Southern California and Hawaii Regions were rated by their patient panels using different scales and the means of the distributions varied, plus the rankings were relative to other physicians in the same region. Thus the relative ratings from the two Regions were not directly comparable. The correlations were based on the High (3), Medium (2), or Low (1) Group classification within their respective Regions. One randomly selected visit was selected for each physician to adhere to the independence assumption of the statistical test. Nonparametric rank order Spearman correlations were calculated between the patient satisfaction data and behaviors coded as present (1), intermediate (0.5), or not present (0).

**Results**
Spearman rank order correlations between physician practices and patient satisfaction scores with correlations exceeding \( r = 0.35 (p \leq .01, n = 45-55) \) are presented in Table 1. Twelve coded practices met this criterion. These practices were examined to look for higher order commonalities. After several iterations, five major categories of practice emerged that described the behaviors that discriminated between High, Medium, and Low Group physicians. The resulting model and the relationships between the categories are illustrated in Figure 1.

The following sections describe the categories and practices found in Table 1. Quotations from the exam room visit are used to exemplify each practice found to be related to patient satisfaction.
In effect, they helped the patient be an active participant in their care. For example, the first remark by one High Group physician was “I do a lot of reassuring for this patient … I think what she came in for is dialogue.”

### Table 1. Practices that discriminated between High, Medium, and Low Group physicians on the basis of panel level patient-satisfaction ratings

<table>
<thead>
<tr>
<th>Categories</th>
<th>Practices</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus on the patient’s agenda</td>
<td>Focus on patient needs vs primarily clinical issues and/or time management</td>
<td>0.65</td>
</tr>
<tr>
<td></td>
<td>Use simple, active listening responses during patient storytelling (eg, periodic statements of “okay,” “uh-huh,” etc)</td>
<td>0.61</td>
</tr>
<tr>
<td></td>
<td>Listen to 3-5 uninterrupted sentences (which typically required less than 30 seconds)</td>
<td>0.48</td>
</tr>
<tr>
<td></td>
<td>Give patient opportunity to express fears and concerns</td>
<td>0.35</td>
</tr>
<tr>
<td></td>
<td>Ask probing questions, especially regarding patient concerns</td>
<td>0.47</td>
</tr>
<tr>
<td></td>
<td>Use physician self-disclosure (for patient education)</td>
<td>0.46</td>
</tr>
<tr>
<td>Draw out the story</td>
<td>Respond empathically (showing understanding of patient’s point or the implications of their situation)</td>
<td>0.54</td>
</tr>
<tr>
<td></td>
<td>Show caring (patient used the word “caring” or physician did something extra in terms of listening or helping)</td>
<td>0.59</td>
</tr>
<tr>
<td></td>
<td>Show familiarity with the patient’s medical or social history</td>
<td>0.43</td>
</tr>
<tr>
<td>Demonstrate understanding</td>
<td>Explain what is happening and why (eg, explaining etiology, genetic contributions, normalizing, using pictures, giving suggestions, explaining why new drug is important, problem solving, or giving handouts with explanation)</td>
<td>0.45</td>
</tr>
<tr>
<td></td>
<td>Present options to patients</td>
<td>0.37</td>
</tr>
<tr>
<td>Provide detailed explanation</td>
<td>Deliver what was promised or negotiate until later—issues of concern to the patient are addressed or at least acknowledged—(responding to patient questions, remembering the referral, phone number, medication, etc)</td>
<td>0.46</td>
</tr>
<tr>
<td>Complete the patient’s agenda</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1 = researcher observation of visit dialogue; 2 = patient observations during debriefing session; 3 = physician observations during debriefing session; 4 = patients and physicians had access to information that was not available on tape regarding follow-up actions occurring after participants left the exam room.

**Focus on the Patient’s Agenda (Rather than Focusing Primarily on Clinical Issues or Visit Management)**

The content of the physician debriefing sessions differed across the three groups. Even though the physicians knew the study was focused on communication, the Low Group physicians frequently talked at length about clinical issues, managing time, limited resources, and problems with systems, computers, and uncooperative patients. A few felt they didn’t have time for minor medical problems and patient satisfaction. One said, “I am here to keep multisystem patients out of the hospital. My time is for sicker patients. I am not here for a popularity contest. You need to prioritize. My patients come in [with multiple complaints].”

In contrast, physicians from the Medium Group and, especially, High Group were focused much more on the patient. They attended fully to the patient’s medical concerns, and also considered what the patient would need to move forward in the management of his/her condition(s). They were cognizant of the patient’s history and barriers to progress. They assessed current patient concerns, affect, readiness for next steps, and tailored their actions to support the patient’s development.

**Drawing Out the Story**

Use Active Listening Responses During Patient Storytelling

Typical active listening responses used frequently by the High Group and Medium Group physicians included frequent utterances such as: “Uh huh … uh huh,” “Oh,” “All right,” “Okay,” “I see,” or “Hmm.”

Some patients mentioned their physician’s active listening responses

“I liked that he responds with ‘uh-huh,’ ‘yes,’ ‘okay,’ ‘great,’ ‘good’ … It’s like he has had some training in active listening.”

Users of active listening responses were generally unaware that they were responding in this manner. When they listened to their videotapes, some were surprised that they were saying “okay” or “uh huh” so much. One physician wondered if it might annoy the patient, but none of the patients in the debriefing sessions indicated...
cated dislike for these responses. To the contrary, during those sections of the visit, patients often mentioned that they appreciated that the physician was listening.

**Active listening responses appear to serve several functions. They may:**
- Indicate the physician is attending
- Give the patient permission to continue
- Keep the patient focused on the story

Low Group physicians were more likely to either be silent throughout the storytelling or they might interrupt the patient to start the biomedical questioning.

**Listen to 3-5 Uninterrupted Patient Sentences**

Low Group doctors were more likely to interrupt the patient after only one or two sentences were communicated. High Group physicians typically left room for patients to relate three to five consecutive sentences during storytelling. (Active listening responses were not counted as interruptions.) Typically, sufficient listening required less than 30 seconds, consistent with time frames reported in the literature.\(^1^3\) Note that important storytelling did not always occur at the start of this visit. Often the first minutes were used in rapid dialogue about lab or test results. One or more stories of interest to the patient often came up later in the visit.

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**Does length matter?**

Patient satisfaction ratings were not significantly correlated with the length of the visit. This suggests improving communication does not necessarily require more time.

Some Low Group physicians could not tolerate nonpertinent “digressions.” The patient would respond to having their question ignored by repeatedly bringing up their issue, to which the physician would still not respond.\(^1^4\) This situation was unpleasant for both parties. One physician whose patient had multiple serious conditions objected, “This is a waste of time here. I just wanted the chronology.”

An interrupted story doesn’t simply drift away.

It stays with the patient. Sometimes the patient’s issue was not important medically, but it so occupied the patient’s attention that the patient did not attend to what the doctor had to say.

Another consequence of failure to listen effectively was observed among some of the Low Group physicians who failed to detect and/or address language barriers, cultural differences, or literacy problems that could have affected the relationship.

Listening did not always open a Pandora’s Box. Only a few of the patients took advantage of physicians who were good listeners. Even an emotional story could conclude in good time when the patient felt heard and understood. In the following transaction, a High Group physician noted: “If patients have a chance to say what is on their mind, they often return to the medical issues on their own,” as illustrated in this dialogue with her patient.

**Physician:** “Well hello there. Good to see you.

How was your holiday?”

**Patient:** “We had a fire.”

**Physician:** “Oh my!”

**Patient:** “I am living with my niece now. I was going to move, then the fire.”

**Physician:** “Oh!”

**Patient:** “Everything turned out pretty good.

Everything is put in place now. So, what was my blood pressure?”

**Physician:** “It was 112. That is pretty good, much better …”

**Give Patients the Opportunity to Express Fears and Concerns**

High Group physicians were more likely to hear patient worries about medical problems (beyond the presenting complaint), including concerns about the meaning of symptoms. Frequently patients wanted to determine if the symptoms were normal and why they occurred. They worried about abnormal test results sent in the mail, their family health history, pain or risks associated with procedures, and side effects of medicines. Some of their concerns were of a personal nature. Patients shared their embarrassment about symptoms they were having. They described struggles with weight, relationship problems, grieving, and health problems of family members, anger management, depression, sexual dysfunction, panic attacks, and suicidal cognitions.

**Ask Probing Questions, Especially Regarding Patient Concerns**

Patients expect detailed biomedical questions from their physicians. For patients, such questions indicate physician competence and even caring. Several patients said thorough probing was one of the things they liked about their physicians. They particularly wanted exploration of sufficient depth around medical issues the patient raised during the visit. The difference in the questioning was a mat-
Communications Practices of Physicians With High Patient-Satisfaction Ratings

Despite positive patient perceptions of medical questioning, some Low Group physicians felt uncomfortable about patient perceptions of probing questions. Some assumed patients disliked medical questions because it seemed like they were “interrogating” the patient or being too “nosy.” Patients did not report objections to physicians asking questions.

**Use Physician Self-Disclosure (for Patient Education)**

Some of the High Group physicians were comfortable using self-disclosures to normalize, to teach, or to build a sense of commonality with the patient. For example, one physician shared that her husband was also on statins. She thought sharing that information would be more memorable than hearing a risk reduction percentage. Women physicians with children often shared this fact with patients. Patients often commented that they liked having their physician share personal information with them. These physicians were selective in their use of self-disclosure. The disclosures were always relevant to the patient’s development. For those who used this approach, it felt natural and they were confident doing so.

**Demonstrate Understanding**

Investing a little effort to build a strong relationship with patients was typical among High Group physicians. There were three practices related to this concept: empathic responses, demonstrations of caring, and familiarity with patient’s history.

**Respond Empathically**

Empathic responses were defined as remarks or actions that signaled to the patient that the physician understood what the patient was trying to communicate. The physician showed s/he heard the patient’s message and/or recognized the implications of the patient’s situation. Sometimes these were responses to patient’s emotional reactions, but more often the patient was trying to describe a situation, context, barrier, or symptom that the physician believed the physician needed to understand. Responsive actions showing understanding of the patient’s situation might be changes in body language, voice tone, deciding to order a test, or examining the patient.

The High Group physicians were more likely to 1) detect an opportunity to respond to an important patient thought or feeling and 2) to respond to the clue, proving to the patient that the physician understands the patient’s experience. Sometimes they missed the opportunity during the visit, but detected it in the tape. In contrast, Low Group physicians generally did not detect missed opportunities. Other times, there was evidence of intellectual understanding of the patient’s situation, but they did not communicate the insight. For example, they might report their empathic understanding to the research assistant during the debrief, but did not share their insight and understanding with the patient.

- Many empathic remarks are statements of the obvious, but could still be quite important to share. The patient wanted to be certain the physician “got it.”
  
  **Physician:** “You had a colonoscopy a few years ago. That was good …”
  
  **Patient:** “I don’t want to be on the receiving end of one of those again.”
  
  **Physician:** “Worse than the sigmoid?”
  
  **Patient:** “I handled that one better.”
  
  **Physician:** “Okay then. We won’t be giving you another one of those!”

- A female patient described a family history of early onset heart disease and reported that her sister recently had a bypass performed. The patient was anxious. They worked on a treatment plan. The physician reinforced how serious she was about safeguarding the patient’s health, saying “We are doing this because this is a big concern with so many people in your family …”

**Handling Patient Fear**

A patient who was very anxious about injections chose, after a persuasive argument about the benefits of having an injection vs taking pills, to accept the injection, but he was still frightened. In the past, he bit through the tongue depressor during a painful injection.

**Patient:** “I bit that thing in half. I broke out in a cold sweat.”

**Physician:** “You poor guy! What you have to put up with. This is not going to be nearly as bad.”

[The procedure went well. In the debrief, the patient said:]

**Patient:** “He explained everything. He gave me a choice. It was entirely my choice. There was more pain at first, but I don’t like to take pills. Exercise will keep them from popping out. We took care of the problem now and in three weeks I will come back and get exercise. We are taking care of things now and down the road.”

Patients often commented that they liked having their physician share personal information with them.
Show Caring

Patients sometimes described a physician as “caring.” Patients with serious conditions liked being told they could call the physician if problems arose. They felt cared about when the physician probed at length when the patient had a concern. They liked a physician who urged them gently to agree to important tests, medication, or procedures even though the patient was reticent. At critical times, a personal remark could move a patient forward, as evidenced in this attempt (not the first) to persuade a reluctant male patient to get a stress test.

Patient: “If you felt strongly, I would [do the stress test]. But, normally a company would be concerned about costs . . .”

Physician: “I want to have this conversation ten years from now . . . I need to help you to stay as healthy as possible . . . If you were my father, I would have you do it . . . If you leave it to me, I would schedule it.”

Patient: “I will take your advice.”

High Group physicians often made statements that suggested they were concerned about their patients as individuals. They liked to make small investments in the relationship when there were special opportunities to build trust and a relationship and to improve adherence in the future. Some of the High Group physicians discussed communication approaches that contribute to a strong relationship.

• “It is important . . . to spend time not just on why they are there, but about who they are as people.”

• “He really needed to talk about his [epileptic] daughter. It had nothing to do with the visit. It is good for the relationship. It makes it easier next time. It is important he feels comfortable to come in if he has a side effect. I am a Family Practitioner.”

Great bedside manner—One patient’s description

“I have always enjoyed his bedside manner—such a pleasure. He stops doing what he is doing and watches and listens. So many doctors . . . may listen, but they are not really there. They are cold and indirect. He makes your day brighter . . . He can help you with a lot without sending you to someone else. I think that is a big plus. Others send out for nurses to do bandages, etc . . . He makes jokes . . . to take your mind off things. He keeps you entertained . . . He will listen to your jokes too, even if they are bad!”

The Low Group physicians were less likely to effectively demonstrate their caring to patients. After viewing his tape, one physician expressed his disappointment that he “didn’t seem warm and fuzzy” with the patient. He was unsure how he could change this perception.

Low Group physicians were also more likely to make remarks that were insensitive or otherwise detracted from the relationship. Some facts can be hurtful if shared insensitively. For example, one physician told his patient that she was 80 pounds overweight in an offhand manner on the way out the door. The patient reported her surprise and distress in the debriefing.

Show Familiarity with the Patient’s Medical or Social History

• The High Group physicians generally knew why the patient was in the office. These physicians did not recall extensive details, but they tended to remember a detail of importance to the patient, such as a recent vacation. One physician said, “I remember her hobbies . . . I just remember these things. I am not flipping through the chart to find it.” Many patients mentioned they appreciated the physician who remembered to ask about the spouse’s last visit or last medical or personal problem. Remembering the issue of a spouse or child was endearing to patients. Low Group physicians were more likely to be confused about the reason for the visit or were incorrect about medical or personal history facts.

Provide Detailed Explanation

Explain What is Happening and Why

Patients of all educational levels sought detailed information about what was happening to them and why. “I’m lucky to get him back,” a patient of a High Group physician remarked. “You picked a good person to study. He takes the time to explain. Not all doctors are willing to do that.”

Medium Group and High Group physicians tended to offer more detailed explanation to patients using simple language than Low Group physicians. Some of their approaches are described below.

• Several physicians used the “What do you eat for lunch?” approach to explore eating habits. This method took time but provided an excellent teaching opportunity. Patients reported they welcomed such information.

• A number of High Group physicians worked with patients to help them remember to take medications and focused on ways to integrate pill taking into the normal day. They gave concrete suggestions like putting information on the refrigerator, or putting pills in a certain location to include in a daily ritual.
• Many of the High Group physicians discussed ways patients could add more exercise to their routine and helped them problem solve when problems emerged. For example, one doctor understood the patient’s reluctance to exercise outdoors and shared her own strategy (exercising when she watches the television news).

Types of Information Sought by Patients
- Should I worry about my symptoms—are they normal?
- What was the doctor learning as the exam was being conducted?
- What is the cause of the symptom?
- Genetic contributions, including racial/ethnic predispositions to diseases
- Treatment options—including nonpharmacologic solutions
- Alternative medicine approaches
- Side effects of treatments
- Explanations using visual tools—illustrations, pictures, sketches
- What can I do to improve my condition?
- How can I overcome various barriers to change (primarily regarding exercise, taking medication, or healthy eating)?
- Handouts to supplement (but not replace) the physician’s explanations

An Explanation of Joint Pain to an Overweight Patient
“When we were puppies, all our joints were lined with nice cartilage, all surfaces nice and smooth. As we put on some character, the cartilage started to wear down. It happens on both sides of the bone ... This is classical. You get stiff. As you get older, it deteriorates more, and it gets a gnarly appearance. It depends on the amount of weight you carry and how much you are on your legs. When you get up, it is going to hurt. Eventually there can be no cartilage, you get inflammation and can hardly walk ... Might need an artificial joint. Okay. You are at this stage [pointing to a drawing]. You are a pretty young guy. What would really help you is to bring your weight down. And I know you are working on that.”

A patient described how a High Group physician provided the “personal touch.”
- “She comes in and recaps what happened before. She explains the possible side effects. I know what to expect. I don’t always read the pamphlets. ... She explained everything. I like knowing. Some would say she goes into a lot of detail. I don’t mind it. I am interested. She mentioned my wife. She remembers. It is more the personal touch. You get that as opposed to someone you see for the first time. You feel more at ease. Even though this is an HMO. She knows your history. Knows the family history. It is nice to see one doctor all the time. She explains in a way that I can understand. She uses layman’s terms. She makes sure I understand. She asks if I have any questions. At least I know: I don’t have to worry.”

Explaining well requires explaining effectively and handling all issues that the patient raises (although some issues were negotiated to a later visit for some patients).

• “I had [another physician] that I didn’t like. You just want to get out of his office. What is important is that [this physician] answers all the questions and covers all the material ... He is good at explaining things. If there is any doubt, he follows up on them. He cautions on the safe side. He covered all the points and explained what he was doing and what was coming.”

Present Options to the Patient
Full shared decision making was not frequently observed in these visits. However many patients mention liking their doctors because s/he gave them “options.” In particular, patients were eager to learn about alternatives to medication. Many patients with chronic conditions were resistant to starting a new medication, especially if it was to be used long term.

High Group physicians typically built a case for a new medication over several visits and repeated information. Several physicians explained that patients want to understand why they need a medication or they would not take it. For example, one High Group physician worked with the patient as an advocate, empathically confirming that the patient did not like medication, and hoping that diet and exercise would work instead, then asking the patient’s perspective. Patients complained about physicians who prescribed medication without explaining the reasons for the drug, the side effects, and/or did not seek their perspective. They reported that they did not use those prescriptions and they did not inform the doctor of their decision not to adhere to the plan.

One High Group physician was able to collaboratively work with a patient on psychosocial and health issues. After the patient complained about his relationship with his wife, the physician supported the patient’s decision-making process.
Physician: Is this something you need help on?
Patient: We tried that … We saw a marriage counselor … My wife is defensive. She says, ‘He smokes too much; he drinks too much.’ It didn’t work.
Physician: Right.
Patient: Everything wrong is my fault. I can’t get her to open up. We have various counselors. One said ‘Get rid of her’ … quote unquote.
Physician: What do you want?
Patient: I can’t afford to divorce.
Physician: There is a person who comes here, if you want to start with yourself. And then she can recommend what comes next.
Patient: Also I learned she hates to admit to doing something wrong.
Physician: The problem is that all these stresses affect your overall health.
Patient: I know where you are coming from …
[Other discussions followed, including smoking cessation.]
Physician: So on the counseling, you want to hold off or try that?
Patient: I have to do something. I am tired of being the bad guy …
Physician: See you back in four months.
Patient: Check my ears for wax before you go? [quick exam]
Physician: Bingo … You have some now … Use these drops.
Patient: I think I covered all the bases. I accomplished a lot.

Complete the Patient’s Agenda
Delivering what was Promised; Responding to Questions

Some of the visits with Low Group physicians were incomplete with respect to the patient’s agenda. The promised prescription was overlooked or promised materials were not provided. A lab or a referral might not be ordered. Either the patient or the physician noted this in the debrief. If the patient objected in the debrief that a topic was not adequately addressed, the patient’s agenda was recorded as not covered. A patient concern that was negotiated to a future visit was considered to be covered. High Group physicians generally overlooked fewer items and were more likely to mention omissions in the debrief.

Patients were pleased when the physician agreed to pursue an issue that was of interest to the patient, but not the physician. The following is an example with both the physician and patient comments on the interaction.

Physician: “When he mentioned the tingling, I thought carpal tunnel. He was worried about it being a side effect of the drug. I was sure it was carpal tunnel … but I did the full exam and I think he is satisfied. He brought it up, so he is worried about it.”
Patient: “He has a lot of knowledge and he expresses it to help you know what is going on … It’s great … He sets my mind at ease. Either it is not as bad as I think it is or I am not thinking right. I was worried that I was doing more damage … He explains things in detail … Nothing is left out … I bring a list usually and we go down the list and he and I discuss everything on the list … I like that he spends enough time on each issue and does not push you through. He makes you aware of what he is going to do. You feel a little more at ease.”

Factors Not Correlated with Performance

- Length of the visit
- Asking open-ended questions at the start of the visit (almost all physicians do this, so there is no variability)
- Heavy use of closed-ended questioning vs mixed open- and closed-ended questions
- Attitudes toward the use of a computer in the exam room
- Reassurance

In another visit, a male patient asked his doctor about his father’s (a previous patient) problem with blood in the urine. The physician took a minute to share some advice. The patient thought highly of his doctor for taking the time to help him understand. The patient said, “I appreciate her answering my question about him, her explaining the reason. She seems quite concerned. I am very comfortable with her.” The physician remarked, “I spent time on this issue. His father used to be my patient. Men don’t talk about these things. This must bother him a lot to share this with me.”

High Group Physicians Describe Their Communication Strategies

During the debriefing sessions, the physicians were not asked about their philosophies of patient care or strategies for interacting with patients, but many of the High Group physicians volunteered general approaches.
to working with patients. As a group, the Low Group physicians offered little information about their communication strategies. The approaches they did mention seemed to be less differentiated. For example, some emphasized only the importance of maintaining eye contact with the patient. Some of the Low Group physicians believed that when they had problems communicating with patients, they should be more direct with patients.

In the previous section, the practices that correlated with patient satisfaction were discussed. The following section summarizes the communication strategies volunteered by the High Group physicians. The following is a list, not ordered by frequency of mention by the physicians. Use of these practices may or may not be correlated with patient satisfaction. The High Group physicians mentioned the following approaches to interviewing patients:

**Personalized Greeting**
As one physician explained, “I spend time greeting and acknowledging each patient. You have to look at each person. Each person is a little different.”

**Listening**
Listening was widely believed to be a fundamental tool for effective data collection and building a relationship. They mentioned their efforts to:
- Listen with eye contact and full attention
- Give the patient time to explain without interruption
- Acknowledge when the patient is concerned about something
- Try to “catch opportunities to give an empathic response” when the patient has suffered or is worried.

**Individualized Approaches**
“This [patient] is different. She expects me to take the lead. She was open … She lets me guide. She is different from other patients. I feel out each patient. Her concern was the heart, so we talked about that.”

“Seeing patients is the best part of the day. I fix every problem I can on each visit. I do not like to bring them back for less important things. You don’t want to prioritize the schedule instead of the patient.”

**Feedback**
Many High Group physicians believed it was important to provide generous feedback to the patient about the status of various systems as they progress through the examination. For example, how do the lungs sound? How does this part look? Is it normal?

**Being Responsive/Flexible**
The High Group physicians tried to respond to inquiries that were important to the patient (even if these were not the most pressing clinical issues)
- They wanted to understand why the patient came in
- Some reported that they modified their own style/approach to each individual patient
- Cultural expectations were salient to some physicians.

**Teaching and Explaining**
Some of the educational strategies mentioned by High Group physicians included:
- Examining self-monitoring notes that patients do at home—"If I don’t acknowledge their blood pressure readings, then they will stop doing it."
- Preparing patients—Helping patients understand why they need to change behavior, why they should take medication, why the treatment is necessary, or why they should submit to a procedure
- Reiterating important messages
- Using visual aids (patients reported this was very helpful)
- Writing things down for the patient. “She is bright, but she asked several times. I will write it down for her.”
- Summarizing the plan at the end of the visit
- Seeing patients in the office after the exam, creating a relationship of equals.

**Using Pictures: A Powerful Tool**
“Most people have no idea of what their bodies are like under the skin.

Every chance I can I use an illustration or drawing. It’s one of the most valuable things we have to make things clear to the patient. … It makes a big difference.

When you make things clear to the patient, he has a better understanding. He knows it is normal and it’s progressive. He will be okay …

It gives them the confidence that, first, I know what I am talking about, and second, that the treatment is aimed at resolving the issue.”

**Covering Topics of Interest to the Patient**
High Group physicians tried to be comprehensive, covering questions that were important to the patient, even though these might not be the most pressing clinical issues.
Handling Psychosocial Issues

Many of the High Group physicians wanted to be sensitive to patient fears and work to help patients with their concerns. Approaches to psychosocial issues included: active listening, reassuring, and reviewing what has been done and what actions can be taken.

One physician discussed how a depressed patient was handled.

“Her husband died a couple years ago. They were childhood sweethearts, married since their teens. He died of cancer … She has been depressed since the death. She was hesitant to try antidepressants. We clarified some issues through talking about her daughter (who is doing well on antidepressants). It was a window of opportunity. There were many fears to address.

“As a physician, you may think you have it all wrapped up. But there is what we know and there is communicating it to the patient. We are educators and we are like salespeople. I think it will make her feel better. This is trying to change behaviors. I am trying not to seem judgmental. She feels guilty about being depressed. It took a lot for her to come in today with all that is going on … I am sharing what I hear her saying. I acknowledge the pain. There are options [for her].”

Nonverbal Communication

Some High Group physicians were conscious of the nonverbal communication (body language) of both patients and themselves and tried to respond in a positive manner.

Touch

“It conveys I am not afraid to touch them … More so for kids, the middle-aged, older people, or the sick.”

A patient of a different physician remarked, “The doctor never even physically touched me. That doesn’t instill a lot of confidence.”

Patients often expected a physical examination. Some of the High Group physicians believed that touching was a natural and important element of communication for them. They touch patients on the arm, hand, or shoulder or hug them. One physician explained, “I use a lot of hand gestures. I am not just talking. Otherwise, they lose interest. It helps.”

Physicians were sometimes surprised how much they gestured. Patients seldom mentioned gestures, but they did notice whether the physician was looking at them and sitting down in contrast to standing over them or reaching for the door.

Use of the Exam Room Computer

“The computer changes things.” Many High Group physicians struggled with the positioning of the computer in the room. They disliked being positioned with their back to the patient and wondered about the affect on patients. (The patients in this study did not complain about the computer.) Some reported they tried to finish the notes while the patient is still in the room, although it was not always possible. After reviewing her videotape, one High Group physician decided to stop typing and not look at the computer when giving advice.

Huddling with the Computer to Avoid Having Your Back to the Patient

“I say to the patient, ‘You can watch if you want and make sure I’m typing it right …’ Patients love it.”

Discussion

The importance of physician-patient communication is well established. From our analysis it is clear that High Group and Low Group physicians communicated differently with their patients and that these differences are noticeable to patients and clinicians.

The findings suggest an approach to improving physician communication with patients. The general theme emerging from this research is the importance of the patient’s agenda. First, identifying the patient’s agenda needs to be part of the physician’s agenda. The physician draws out the patient’s agenda with active listening responses, allowing the patient time to describe their concern(s) and to express their fears, and then asks the patient questions. During this time, a personal connection can be built using empathic statements and showing familiarity with the patient’s history, both of which tend to add depth to the relationship and contribute to the patient’s perception and feeling of being cared for.

Next the physician returns to the patient with details to normalize or explain the reasons for the problem and how it might be addressed. The physician explains any options for managing the problems. Finally, the physician verifies that the items in the patient’s agenda were addressed or negotiated to a future visit. Neglected issues interfere with the relationship and the flow of the visit and frustrate the patient and physician.

These findings are compatible with the Four Habits
Model,\textsuperscript{15,16} which has been widely used within KP to train providers in physician-patient communication skills. The four major categories of the model (invest in the beginning, elicit the patient’s perspective, demonstrate empathy, and invest in the end) are well represented in the study’s correlational findings and in the communication strategies shared by the High Group physicians. The study findings show specific ways that KP physicians apply the Four Habits.

Sources for Improving Clinician-Patient Communication Skills
- KP Clinician-Patient Communication Intranet Website http://kpnet.kp.org/cpc/
- KP regional programs: Conversations at the End of Life, Communicating Unexpected Adverse Outcomes, Three-Day Intensives, Individual Observation and Coaching, Integrating Communication Skills into HealthConnect Training
- KP Care Management Institute: Health Literacy
- KP National Diversity
- National Institute on Aging: Communicating with Older Adults

Additional research with a narrower focus could be conducted to replicate specific findings of interest suggested by this exploratory research. 

Acknowledgments
The authors would like to thank the physicians, staff, and members of the Southern California and Hawai’i Permanente Medical Groups and Permanente Health Plans. We extend special thanks to Edward Thomas RN, MBA, Director of the Carfield Memorial Fund for his assistance with the project.

References

“Narrative is ever present in medicine and is an integral aspect of the doctor and patient relationship … If the patient’s narrative is not heard fully, the possibility of diagnostic and therapeutic error increases, the likelihood of personal connections resulting from a shared experience diminishes, empathic opportunities are missed, and patients may not feel understood or cared for.”

Association Between Satisfaction and Familiarity with Physician Among New Adult Members

By William C Wells, PhD
Dorothy Ries Faison Meder, MFA, EMBA

Proprietary studies have found that new Kaiser Permanente (KP) members are generally less satisfied than established members with the health care they receive. Lack of familiarity between the patient and his/her primary care physician may be one cause of this lack of satisfaction.

A recent study of adults living in rural areas of the United States found that patients with relationships of three or more years with their health care physician tended to be more satisfied than those with shorter term relationships. A study of individuals living in the Netherlands also found that patient-physician familiarity was associated with patient satisfaction. Patient-physician familiarity can be measured in terms of continuity of care. A review of 22 published studies found a consistent association between higher patient satisfaction and greater continuity of care, while a review of 81 published studies found that greater continuity of care was generally associated with better preventive care and fewer hospitalizations.

In this study, we measured the association between patient satisfaction and patient-physician familiarity for new adult commercial plan members of KP living in Hawaii. Administrative data was used to

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References

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identify the first, second, third, fourth, or subsequent primary care visits of a member to a physician. Satisfaction with the visit was measured using the Patient Satisfaction Survey (PSat), which is routinely mailed to members who have recently visited a KP physician for health care.

Methods

The population studied was new adult commercial plan members of KP in Hawaii (KPHI) who made at least one visit to a KPHI physician for primary care during 2003 or 2004. New adult members were defined as members who were at least 18 years of age and had less than two years of tenure with KPHI at the time of the visit. Medicare and Medicaid members were not included in the study population.

Patient satisfaction was measured using the PSat survey question: “Taking everything into consideration, how satisfied were you with the visit?” A seven-point summated rating scale is used to quantify satisfaction, with the endpoints labeled: 1 as “not at all satisfied” and 7 as “extremely satisfied,” with “sad” and “happy” face symbols placed adjacent to the appropriate ends of the scale. Responses of 6 and 7 were equated with being very satisfied. A total of 274,064 surveys were mailed during 2003-2004, with a response rate of 36%.

PSat survey returns were matched to administrative data to determine tenure, physicians seen, visit dates, and if the PSat surveyed visit (index visit) was the first, second, third, fourth, or subsequent visit by the member to the physician (index physician). A study sample of 875 unique new adult members was identified; one and only one PSat survey return from each was included in this study.

The administrative data was also used to identify a cohort of new members who maintained a high degree of interpersonal continuity of care with the first KPHI physician they saw for primary care (high continuity of care cohort). A sample of 137 members of this cohort were identified using the following criteria: 1) their first primary care visit to a KPHI physician was to the index physician, 2) all of their primary care up until, and including, the index visit, was from the index physician; 3) they made at least one return visit for primary care after the index visit to the index physician; and 4) they continued to receive at least 50% of their primary care from the index physician after the index visit.

Two linear regression models were fit to the data using the least squares method. For both models, overall patient satisfaction was the dependent variable. In the first model (visit model), the independent variable was the number of previous visits to the index phys-
Table 1. Frequency distribution of new adult member satisfaction scores for the first, second, third, and subsequent primary care visits to a physician

<table>
<thead>
<tr>
<th>Visit with physician</th>
<th>n</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>First</td>
<td>396</td>
<td>3%</td>
<td>2%</td>
<td>3%</td>
<td>4%</td>
<td>13%</td>
<td>27%</td>
<td>48%</td>
</tr>
<tr>
<td>Second</td>
<td>162</td>
<td>2%</td>
<td>1%</td>
<td>2%</td>
<td>4%</td>
<td>10%</td>
<td>27%</td>
<td>54%</td>
</tr>
<tr>
<td>Third</td>
<td>96</td>
<td>0%</td>
<td>3%</td>
<td>3%</td>
<td>1%</td>
<td>8%</td>
<td>24%</td>
<td>60%</td>
</tr>
<tr>
<td>Fourth and subsequent</td>
<td>221</td>
<td>1%</td>
<td>0%</td>
<td>1%</td>
<td>3%</td>
<td>7%</td>
<td>21%</td>
<td>68%</td>
</tr>
</tbody>
</table>

Results

For overall satisfaction with visit, there was a near linear increase in average score as the number of previous visits with the physician increased (Figure 1). Regression analysis found that the underlying data fit the log visit model better than the visit model, suggesting a diminishing effect of each additional visit on patient satisfaction. There was a consistent trend of increasing satisfaction from the first through the fourth visit, with little evidence of a trend in later visits.

There was also a near linear increase in the percentage of patients who were very satisfied as the number of previous visits with the physician increased (Figure 2).

It was uncommon for a new member to give a low score (1, 2, or 3) for a visit, however, those that were given were generally for early visits, and only rarely were they given for a fourth or subsequent visit to a physician (Table 1).

Most (673, 76.9%) of the 875 new adult members who returned a PSat survey made at least one subsequent visit to a KPHI physician for primary care. Most (60.4%) of those that were very satisfied with the index visit made at least one return visit to the index physician, although less than half (41.6%) of those who were less satisfied made a return visit to the index physician.

Just as with the broader study sample, within the high continuity of care cohort there was a consistent trend of increasing satisfaction from the first through the fourth visit. And, just as with the broader sample, the log visit model fit the data better than the visit model, suggesting a diminishing effect of each additional visit on patient satisfaction.

Discussion

The association between a patient’s overall satisfaction with a visit for primary care and the number of previous visits they made to the physician suggests that as patients and physicians become more familiar with each other, the patient’s satisfaction with the physician’s service increases. Others have found that patient satisfaction increases as familiarity increases and as continuity of care increases.

Although the model of increasing familiarity leading to increasing satisfaction is intuitive and fits the data well, a second, alternative model may also explain at least part of the increase in satisfaction observed from the first visit to subsequent visits. In this alternative model, members visit different physicians, and select one that they are satisfied with; they then make repeat visits to this physician when seeking primary care. Our analysis suggests that both models of behavior may be responsible for the observed association between visits and satisfaction. Members of the high continuity of care cohort remained loyal to the first KPHI physician they visited for primary care. Within this cohort, satisfaction increased as familiarity increased. Within the larger sample, we found that patients who were very satisfied with a visit to a physician tended to select this physician for future care, while those that were less satisfied tended to visit other physicians for primary care. Determining the relative importance of familiarity and selection will require the analysis of a richer data set.

References

Applying an Open-Access Model to a Psychiatric Practice

Introduction

It is generally agreed that access to timely medical care is a key to providing quality service. Many practitioners and organizations, including Kaiser Permanente (KP), struggle to achieve this. Psychiatric care is no exception. Employers who provide insurance for their employees have emphasized initial access and much energy is aimed at getting that first appointment for the prospective psychiatric patient; however, there has been comparatively little attention to follow-up visits. Increasing the number of intake appointments per week, using unbooked return appointments for new patients, and appropriating time allocated for activities other than direct patient care (eg, paperwork time, meetings) have improved a member’s chances of seeing a psychiatrist for the first time more quickly. The second and subsequent visits are harder to secure.

After 23 years practicing outpatient adult psychiatry at KP, first in Los Angeles County and now in Orange County, I have seen the continuing high demand for, and emphasis on, initial appointments resign doctors and their patients to some very long waits between visits. Most episodes of care that involve psychiatrists as treaters—not simply evaluators—require return visits, care beyond the skills of psychotherapists or referring physicians.

Although many KP psychiatrists have wrestled with this dilemma, longer intervals between visits have become increasingly common. A recent random search for “next available” return appointments in KP Orange County showed that waits of three to four months were common; access reports from other psychiatry departments at KP in Southern California have shown this as well. Increasing the number of psychiatrists, requiring more mental health care from primary care physicians (PCPs), and reliance on community support services have been some of the remedies that have been proposed to decrease the pressure for better access.

Typical guidelines for monitoring antidepressant therapy call for re-evaluation within four to six weeks. Phone calls are one way to follow-up, but phone calls do not constitute thorough assessments. A patient beginning treatment for a psychotic or manic disorder cannot usually be evaluated from a distance. On the basis of these guidelines, patient care suffers.

In our system, initial appointments are one hour. Most returns are 30 minutes, but each psychiatrist must have six 20-minute return appointments per week. Time itself has had a prominent role in psychodynamically informed psychotherapy, but our current practice is primarily pharmacotherapy.

Looking for Solutions

I became increasingly frustrated searching for openings in my schedule, “giving away” time set aside for other activities, realizing that the approaches mentioned above weren’t going to impact the demands on my practice. However, although I had little control over the “in-flow” to my patient panel, changing how I approached patients once they came to see me allowed me an opportunity for improvement.

Some PCPs and other specialists in KP have also used group visits and found it to enhance both quality and access. Very few psychiatrists in our group have tried this, for reasons that are not clear. The psychiatric literature yielded little help. One valuable concept did emerge, reflecting what might otherwise seem obvious. Population surveys show that much mental illness is undetected, untreated, or undertreated. What has perhaps been unappreciated is that most people want...
to solve their problems on their own. Many do not recognize a problem as psychiatric and don't believe that psychiatric treatment is needed. This helps explain why some patients do not accept psychiatric referrals and why others do not remain in treatment after evaluation. Some of our patients, when all is said and done, simply do not want psychiatric care. The significance of this, with regard to return access, is that when a psychiatrist schedules a return visit, that patient may be politely agreeing to do something s/he truly does not want or intend to do.

My review of the literature identified some primary care settings in which a radically different approach to return access was described. Murray and Tantau at KP in Roseville, California, eliminated the usual distinction between urgent and routine return visits. All patients were offered same-day appointments, and no attempt was made to assess whether a patient “needed” to be seen that day or could wait. Wait lists quickly evaporated. This open-access model was found to be easier and more successful than expected. I decided to adapt elements of this model to my practice of general adult psychiatry with mostly white, English-speaking patients, but including a Spanish-speaking population of about 15%, in north Orange County. Overall, our membership in the county is about 340,000, served by a total of 19 psychiatrists and other mental health providers.

The Open-Access Model

In the spring of 2003, I began to plan implementation of a walk-in system for return patients. I wrote a one-page explanatory letter, (see Figure 1) which I gave to all new and returning patients I saw over the summer, prior to beginning the system in September 2003. Gaining administrative, clinical, and clerical support was quick and easy.

At the time I implemented the new process, I was working three days (Tuesday, Thursday, and Friday) at the Euclid Medical Office in Anaheim; I worked the other 1 1/2 days at the Aliso Viejo clinic. The system was only applied at Euclid.

These are the essential features of the system:

- Designated walk-in times—Tuesday afternoon (1–7 pm) and Thursday morning (8:30–noon)—for any return patient who wishes to see me
- On the basis of our agreement regarding return visits, patients are strongly encouraged to come in on Tuesdays or Thursdays—this plan is put in writing (Figure 2)
- When the patient comes in, the appointment is booked
- Patients are seen on a first-come, first-served basis, unless an emergency arises or someone only needs a signature or a prescription.

Results

I tracked the numbers of patients seen between September 2003 and December 2005. It covers 90 weeks; data were inadvertently not collected for two periods and they are not retrievable.

Table 1 shows the average numbers of patients seen during these clinics, and the utilization during these time periods. Utilization is computed by dividing the average number of patients seen by the number of slots that would be ordinarily available under the traditional scheduling model; for example, on Tuesdays, 12 slots would be available in six hours, so 10/12 = 83%.

Dear Patients,

This letter explains how you can set up follow-up visits.

On **Tuesday afternoons and Thursday mornings**, I am available for unscheduled return appointments. If you come to the office during those times, we will have time to address your needs.

Here’s how this works:

The days and times for these return visits are

- Tuesdays between 1:00 and 6:15 pm
- Thursdays between 8:30 and 11:30 am

If you need a return appointment, please call the office to verify that I will be in the office on the day you want to come in. If I’m not going to be in that day, we’ll tell you when the soonest time is after that. You won’t be given a specific appointment on the phone, but you may come in any time during the days and hours listed when I am here. It’s important that you call, so you don’t come in on a day when I’m not here.

Patients will be seen in the order they are checked in, unless there is an emergency. You must be checked in no later than 6:15 on Tuesdays or 11:30 on Thursdays. I will do my best to limit your wait time.

If it’s not possible for you to come in during these times, please let me know. There will be a few scheduled times available when we may be able to meet.

I hope this system will work for you. Please feel free to let me know.

Richard Moldawsky, MD

xxx-xxx-xxxx

Figure 1. Getting an appointment when you need to see someone.
Discussion

This system has now been in place for over two years. The main advantages have been:

- **Patients who want treatment are always seen at a time consistent with clinical need and/or a patient’s subjective need;** this includes patients recently discharged from hospital.
- **It is easier for collaborating therapists to get rapid help** with psychopharmacological issues, disability, or related matters.
- **The workload is decreased for clerical staff,** who no longer have to pull charts for patients who do not keep appointments (DKA) and do not have to deal with patients’ complaints about the unavailability of appointments.

Most patients have been pleased with this new idea, reflecting their own frustration with return access. A frequently voiced sentiment was that “anything is better than what we have now.” My commitment that no patient need wait more than four days (from Friday to the following Tuesday) for a return visit generally compensates for not offering a specific appointment time. Framing this explicitly as a trade-off is a key. Patients understand and accept that the responsibility to initiate a return visit was now the patient’s. A minority of patients still prefer the traditional system. They are accommodated with the understanding that fewer of these appointments are available, meaning potentially a longer wait for one of those. The walk-in system remains available to all.

Although this process has been well-received by patients and colleagues at Euclid, it has created some difficulties and challenges.

There has been no way either to predict the number of patients who will walk in or the level of care each one needs. Patients themselves have tried a variety of tactics to minimize their wait times; this has been the most perplexing problem. Some have checked in as much as 90 minutes prior to the beginning of a walk-in session; others have called the clinic during the session to ask clerical staff to help them estimate the probable wait, if any. Patients frequently ask me when is the best time to arrive to ensure the shortest wait. We have no data on wait times, which varies from none to (rarely) as long as two hours. I have been impressed with how patients have adapted and how they usually accept some wait time as an acceptable trade-off; many now bring reading materials or other pastimes. About once a month, a patient has left because s/he could not wait; typically, those patients were called and offered a specific appointment.

Once I shifted from thinking of an appointment as a block of time to seeing it as a task (or tasks) to be completed, I became comfortable with some visits lasting five minutes and others lasting an hour. The work of the visit is completed, whatever the time requirement. This work, though primarily psychopharmacology, often entails psychological, social, and other medical issues, including disability.

One concern had been whether patients would “take advantage” of this system and come in more frequently than clinically necessary. There have been perhaps five people who, for a period of a few weeks or 2-3 months, came in as often as 3-4 times a month. Each of these visit clusters was associated with clinical instability. Physician visits do fulfill a social function for some patients. At times, addressing the frequent visits as both clinical and social events became necessary.

There are probably physician variables which affect

| Table 1. Number of patients seen and utilization during walk-in hours: September 2003 – December 2005 |
|--------------------------------------------------|-----------------|-----------------|
| Tuesday (6 hours) | Thursday (3 1/2 hours) |
|---|---|---|
| Average number seen | 10 | 5.2 |
| Range | 5-19 | 0-11 |
| Utilization (percentage kept + percentage available) | 83% | 75% |

Today’s Date

We are agreeing that you should have a return visit in _______. Please look at your schedule to see when it would be convenient and come in, without a scheduled appointment, on either:

**Tuesday between 1:00 and 6:15 pm**

**OR**

**Thursday between 8:30 and 11:30 am**

If you check in later than 6:15 on a Tuesday or 11:30 on a Thursday, I will try but cannot promise to see you that day.

It is always a good idea to call either the day you plan to come in, or a few days before, to be sure I will be here. On rare occasions, I may have to change my available hours. Please call xxx-xxx-xxxx.

If it is impossible for you to come in during the above times, a few other appointments are available for scheduling. Please call if this necessary for you.

Thank you,

Dr. Moldawsky

Figure 2. Return appointments letter
Once I shifted from thinking of an appointment as a block of time to seeing it as a task (or tasks) to be completed, I became comfortable with some visits lasting five minutes and others lasting an hour.

one’s capacity to manage a panel in which the number of new patients is roughly the same within a given department. There are no data on this, but I offer a few observations.

Whether a new patient becomes a returning patient is primarily driven by the decision to medicate. Many milder psychiatric conditions can be treated without medication, yet many of these patients do request and receive medication. This demand is driven by many factors, including recommendations by PCPs, therapists, family members, advertising, and patients’ expectations. It may be that I prescribe less frequently than my psychiatrist-colleagues, so my panel is thereby smaller, even though we have seen the same number of new patients.

Some patients are referred who are already taking psychiatric medications prescribed by a PCP. At times, it is vague as to whether the PCP wishes the psychiatrist to take over that task; some patients do not want to be seen in our department and prefer the PCP continue that job. So, another variable may be the psychiatrist’s handling of these ambiguous situations.

Another factor may be that my patients drop out of treatment at a different rate than those seen under the usual process. Again, we have no data on this. Under the traditional process, it is possible to track DKAs, but this measure does not capture patients who cancel appointments in advance of the appointment date and thereby drop out before our system can identify them as DKAs. The walk-in system has no DKAs, because an advance appointment is not booked.

Conclusions

This walk-in process has made it possible for patients to be seen when it is clinically necessary or when they feel the need. It has done away with waiting lists and telling patients to call for cancellations, two of the more inelegant aspects of practice. It engages patients more actively in their decisions to accept and continue treatment by having them initiate the return contact. It also has reduced the workloads of clerical and clinical colleagues.

This article describes one approach to solving the problem of return access for psychiatrists. It is a shift away from thinking about visits having a starting and ending time; rather, the visit takes whatever time is needed. It has been satisfying to know one’s return access is controllable, and it has been a comfort to patients as well.

Evaluation of this approach has so far been unsystematic. It would be helpful to compare patient satisfaction and outcomes with the traditional approach. Measures of productivity and utilization only tell us how many are seen.

This approach seems adaptable by other psychiatrists who are frustrated with their current efforts to address this problem. One needs to be reasonably comfortable with a less-structured approach to the day and with appointments of variable and unpredictable lengths. Although this approach has not, to my knowledge, been replicated by other psychiatrists, it is hoped that it will stimulate other innovative processes.

References

Corridor Consult

Evaluation of Nocturia in the Elderly

Report of a Case
A colleague asks for your suggestions on the evaluation and treatment of a 78-year-old woman whose chief complaint is that she awakens four to five times each night to urinate. Your colleague adds that the patient does not have diabetes mellitus, is not taking diuretics, and had a physical examination that produced normal findings.

Discussion
Nocturia is defined as the interruption of sleep by the need to urinate. While it is a relatively uncommon complaint among younger adults, the prevalence of nocturia increases with increasing age in both men and women. For patients who are age 60 to 70 years, the prevalence of nocturia is between 11% and 50%. For those who are age 80 years, the prevalence rises to between 80% and 90%, with nearly 30% experiencing two or more episodes nightly. The older adult already experiences more frequent arousals from sleep and less deep sleep compared with younger adults. The presence of nocturia further disrupts sleep, leading to daytime somnolence, symptoms of depression, cognitive dysfunction, and a reduced sense of well-being and quality of life. Moreover, nocturia is associated with a 1.8-fold increased risk of hip fracture. Men who arise more than three times a night to urinate also have a twofold increase in mortality compared with those with fewer episodes of nocturia.

The causes of nocturia are many (Table 1). They can be divided into conditions affecting the storage of urine in the bladder and those involving the excessive production of urine by the kidneys. Although it is commonly assumed that the reason for nocturia is bladder dysfunction, particularly among elderly men, this assumption is not accurate. Bruskewitz et al noted that nocturia persisted in 25% of men who underwent prostate surgery for presumed bladder outlet obstruction and were monitored for three years, suggesting that the etiology of nocturia had not been addressed by surgery in these patients. A careful history and physical examination provide clues to the etiology. Symptoms such as decreased urinary stream, hesitancy, and a sense of incomplete voiding suggest bladder outlet obstruction. Frequency, urgency, and bladder spasms suggest bladder irritation, perhaps due to infection. Gross hematuria may be an indication of a bladder tumor or stones. The absence of such symp-

Table 1. Differential diagnosis of nocturia in the elderly

<table>
<thead>
<tr>
<th>Bladder dysfunction</th>
<th>Excessive nocturnal urine production</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bladder outlet obstruction</td>
<td>Edema-forming states (eg, congestive heart failure, nephrosis)</td>
</tr>
<tr>
<td>Severe detrusor dysfunction/large postvoid urine residual</td>
<td>Obstructive sleep apnea</td>
</tr>
<tr>
<td>Overactive bladder, detrusor instability</td>
<td>Parkinsonism, Alzheimer’s disease</td>
</tr>
<tr>
<td>Urinary tract infection</td>
<td>Diabetes mellitus, diabetes insipidus</td>
</tr>
<tr>
<td>Decreased bladder capacity</td>
<td>Hypokalemia, hypercalcemia</td>
</tr>
<tr>
<td>Tumor, bladder stones</td>
<td>Medications: diuretics, calcium channel blockers, caffeine, alcohol</td>
</tr>
<tr>
<td>Pelvic relaxation (eg, cystocele, uterine prolapse)</td>
<td>Chronic kidney disease</td>
</tr>
<tr>
<td></td>
<td>Autonomic neuropathy, venous stasis</td>
</tr>
<tr>
<td></td>
<td>Excessive fluid intake</td>
</tr>
<tr>
<td></td>
<td>Nocturnal polyuria syndrome (possibly deficient nocturnal antidiuretic hormone secretion)</td>
</tr>
</tbody>
</table>

The older adult already experiences more frequent arousals from sleep and less deep sleep compared with younger adults.
toms, however, does not rule out bladder pathology, because bladder outlet obstruction can be clinically subtle, with symptoms attributed to "old age." Many other medical conditions have been associated with nocturia. Important conditions to inquire about include diabetes mellitus, diabetes insipidus, congestive heart failure, nephrotic syndrome, obstructive sleep apnea, chronic kidney disease, and neurologic conditions such as autonomic neuropathy, Parkinsonism, and Alzheimer’s disease. In congestive heart failure, nephrotic syndrome, and autonomic neuropathy, nocturia is due to the mobilization of pooled interstitial fluid on recumbency. With obstructive sleep apnea, high negative intrathoracic pressures during episodes of airway obstruction and systemic hypoxemia lead to solute and water excretion mediated in part through atrial natriuretic peptide. Chronic kidney disease is associated with tubular concentrating defects and large solute delivery through the remaining functional nephrons. Neurologic disease may affect central control over the circadian release of hormones, such as antidiuretic hormone. Use of medications, such as diuretics and calcium channel blockers, and habits, such as excessive fluid intake and alcohol and caffeine use, are important to note. Why calcium channel blockers have a diuretic effect in some but not all patients is not known.

During a physical examination, orthostatic vital signs should be obtained to evaluate for evidence of autonomic neuropathy. Evidence of heart failure or other edema-forming states, including venous insufficiency, should be sought. An abdominal examination may reveal a large distended bladder or evidence of fecal impaction. A careful genitourinary examination should include a search for prostatic enlargement in men, pelvic relaxation in women, detrusor dysfunction as manifested by a large postvoid residual, and evidence of neurologic deficits related to the sacral nerve roots, including sensory deficits, poor sphincter tone, or absent anal wink reflex.

Initial laboratory tests should include an assessment of renal function, glucose, electrolytes, and calcium and urinalysis with a microscopic examination of the urine. If symptoms suggest infection, a urine culture should be obtained. An ultrasound bladder evaluation before and after voiding should also be performed. If the patient manifests symptoms suggestive of obstructive sleep apnea, a polysomnogram is indicated. If, after initial assessment, no clear etiology is discovered, the patient should be asked to keep a careful voiding diary for at least three days. The volume and time of each void should be noted, as well as whether the voiding episode disrupted sleep. These data will allow the physician to determine the patient’s functional bladder capacity and whether the patient passes a significant fraction of the daily urine output at night. The typical functional bladder capacity is approximately 350 to 400 mL. Urine production at night is usually less than one-third of the total daily urine output. If the nocturnal urine volume exceeds this amount, the patient is deemed to have nocturnal polyuria. Saito et al reviewed voiding diaries of 85 study subjects older than age 65 years and compared them to the diaries of 130 study subjects younger than age 65 years, all of whom had been referred for a complaint of nocturia. After exclusion of benign prostatic hypertrophy, neurogenic bladder, cystitis, diabetes mellitus, diabetes insipidus, and chronic kidney disease, the most common condition accounting for nocturia among the elderly study subjects was nocturnal polyuria, seen in 37%. The second most common cause was an unstable bladder (small voiding volumes associated with urgency), seen in 34%.

Nocturnal polyuria is a syndrome seen in older patients where the usual ratio of day to night urine production is altered. Normally, after an individual reaches the age of seven years, urine volume produced during the day is twice as much as nightly urine volume. In patients with nocturnal polyuria, this ratio is altered such that >35% of the total daily urine output occurs at night despite a normal daily total urine output of 1000 to 1500 mL/day. In some individuals, nocturnal urine production exceeds that produced during the day. The reason for the excessive nocturnal urine production is not clear. Some suggest that antidiuretic hormone levels, typically elevated during sleep, are abnormally low in these individuals, resulting in diuresis. This finding is not universally seen, however, particularly among women with nocturnal polyuria. A relative nocturnal deficiency of antidiuretic hormone also does not explain the altered pattern of sodium and nonelectrolyte solute excretion that also occurs among these individuals. A full explanation of nocturnal polyuria syndrome has yet to be provided.

Several pharmacologic agents have been used to treat nocturnal polyuria with various degrees of success. Simple maneuvers such as reducing fluid intake for six hours before recumbency are usually not
successful. Compression stockings may prevent dependent edema that can start when a patient lies down and results in nocturia. Loop diuretics taken approximately six to eight hours before the patient lies down induce transient volume depletion, thereby reducing nocturnal urine production once the diuretic effect has diminished. Other agents, such as nonsteroidal anti-inflammatory drugs, melatonin, imipramine, and dried fruits, have been tried. The use of continuous positive airway pressure ventilation in patients with documented obstructive sleep apnea reduces symptoms of nocturia. Most studies have focused on the use of desmopressin, an antidiuretic hormone analogue, to reduce nocturnal polyuria. Multicenter, double blinded, placebo-controlled studies using oral desmopressin have demonstrated reduced nocturnal voiding among patients with nocturnal polyuria during a follow-up period of 10 to 12 months. Desmopressin was generally well tolerated; the most frequent adverse effects were headache, nausea, dizziness, and peripheral edema, seen in fewer than 5% to 10% of patients. Hyponatremia was seen in 14% of patients but was asymptomatic and mild (>130 mEq/L) in nearly all cases. In small case series, intranasal desmopressin has also been used successfully.

If the patient has symptoms suggestive of bladder outlet obstruction, a urologic referral is indicated. Detailed urodynamic evaluation and/or cystoscopy may be necessary. Anticholinergic agents may benefit those with an overactive bladder. In contrast, cholinergic agents or intermittent catheterization may be required in those with poor detrusor function and large postvoid residual. Alpha-adrenergic blocking agents and 5-reductase inhibitors may help men with bladder outlet obstruction and prostatic hypertrophy. Surgery may be indicated if there is evidence of mechanical obstruction refractory to drug therapy.

Conclusion
This particular patient should be questioned about any symptoms of heart failure and obstructive sleep apnea. Her fluid intake habits, her medications, and her caffeine and alcohol use should be noted. A careful abdominal and genitourinary examination should be performed, specifically looking for cystocele, uterine prolapse, sensory neuromuscular findings, and fecal impaction. A postvoid residual measurement and screening laboratory tests, including those for electrolytes, creatinine, calcium, and glucose and a urinalysis, should be obtained. If the initial evaluation is unrevealing, she should be asked to maintain a voiding diary and minimize her fluid intake for six to eight hours before going to bed. Should her voiding diary demonstrate nocturnal polyuria syndrome, she can try eating some dried fruits before bedtime and consider a trial of a low-dose loop diuretic to be taken six hours before going to bed. Should she continue to have symptoms, a trial of 100 µg of oral desmopressin at night can be considered, with careful and frequent monitoring of her serum electrolytes.

References

In the End
In the end it’s not the years in your life that count.
It’s the life in your years.
— Abraham Lincoln, 1809-1865, politician and statesman, 16th President of the United States
People Using Technology to Transform Care: The 21st Century Care Innovation Project

By Hannah King, MPH
Ruth Brentari, MHA
Leslie Francis, MBA, MHA
Charles M Kilo, MD, MPH

I feel like this is the ‘doing things differently’ that we’ve been talking about for the past 20 years.

– Sandra Barton, MD, Tualatin, Oregon (Northwest Region)

What is Dr Barton talking about and how is this possible? Dr Barton and many other primary care clinicians across Kaiser Permanente (KP) are part of a pilot project called the 21st Century Care Innovation Project. The purpose of this project is to leverage the use of KP HealthConnect™ (an organizationwide electronic health record system) to transform care and create thriving physician practices.

The Health Plan and delivery systems of KP, like the rest of the nation’s health care systems, are facing significant cost pressures from employer groups and the largest single purchaser—Medicare. There is increasing risk of losing customers who can’t afford insurance premiums. Adding pressure to KP’s cost position in the market is its multibillion dollar strategic investment in KP HealthConnect and the need to rebuild aging facilities.

For primary care practitioners, the model for delivering care is still based on a production model where patients move through a complex system. The majority of work for physicians and staff revolves around dealing with what is in front of them in the moment. There is little time, room, or incentive for changing work to create flexibility and capacity to meet the growing needs of members. Now more than ever, there is a need to transform care delivery so that health care is more cost effective, convenient, and satisfying for KP members and provides a fulfilling work environment for clinicians and staff.

Design

In September 2005, the KP Partnership Group (KPPG) chartered the 21st Century Care Innovation Project in collaboration with the Institute for Healthcare Improvement (IHI). The project outcome is to improve patient care delivery by making primary care more patient centered, and simultaneously developing a more fulfilling and sustainable work environment for physicians and staff (Table 1 and Figure 1). This collaboration of KP labor partners and nine innovation teams from five KP regions and Group Health Cooperative focuses on changing the work they do, not just improving efficiency (Table 2). The overall direction for designing a new primary care model was established by leaders from the Permanente Medical Groups and Kaiser Foundation Health Plan and Hospitals and built from the tenets of the Blue Sky vision.

Innovation Teams

While each of the multidisciplinary 21st Century Care Innovation teams works locally on redesign, representative team members meet together frequently by phone and in person to share ideas, successes, and failures. This collaboration speeds the rate of change and multiplies the innovative ideas that teams test and transfer. IHI faculty attends team meetings and works individually with each team to understand their work and help them refine their changes.

At least one labor representative participates on each team, and regional labor partners have been involved in all the teams’ work. “The Strategic Labor Management Partnership is extremely important when introducing an innovation project. The 21st Century Care Innovation Project has been successful because people are working in an integrated fashion. People on the
The 21st Century Care Innovation Project

What is Changing?

After 12 months of quality improvement work, a new paradigm for primary care delivery is emerging. By leveraging KP HealthConnect, the teams have created new workflows that have resolved some patients’ problems without a face-to-face encounter. This creates capacity by reducing the demand for traditional office visits. Health care teams now organize the work of the day, week, and month instead of reacting to the daily visit schedule.

1. The Telephone Appointment Visit

In Hawaii, Internist and Pediatrician Todd Kuwaye, MD, and Family Practitioner Samir Patel, MD, used to start each day with a room full of patients waiting to see them and the pressure of multiple member messages and appointment requests building up throughout the day.

Today, these physicians spend the first two hours of their clinical day returning messages from patients who either want an appointment or have some other need. The doctors resolve many medical issues on the phone, and, if necessary, schedule a telephone or office visit for later in the day. “I love the variety … It’s not all one-to-one, face-to-face visits anymore. We are doing a lot more visits by phone and group visits and therefore there are fewer office visits. This helps keep things fresh and different,” explains Dr. Patel from the Nanakuli Clinic.

“I feel like, as a team, we can meet the needs of the panel much more adequately than before. We’re able to be proactive. Our job isn’t to just take care of the people in front of us. We can meet more needs, even the needs of people who haven’t contacted us, and we can feel good about this.”

In the Southern California Region’s Whittier facility, José Goncalves, MD, a family medicine physician, has a similar experience. He now spends one 1/2-day per week on scheduled telephone visits. This approach allows him to care for 15 patients in a half day versus 11-12 in the old system. His patients are satisfied that they have greater access to their primary care physician (PCP) and they avoid a copay and avoid travel on Los Angeles’s crowded freeways.

“The new work of the 21st Century Care Innovation Project has increased my flexibility. I feel closer to my patients,” says Dr. Goncalves. “When they don’t need to come in, I can take care of them by phone or e-mail.”

Table 1. Conceptual model for the 21st Century Care Innovation Project

| Teams are encouraged to test a variety of changes in order to create a new paradigm of health/health care delivery that: |
|===========================================================|
| • Transforms the delivery system to be patient centered |
| • Cares for our patients as total beings—caring for the whole person, not just a disease or condition |
| • Empowers patients to be more proactive and engaged in their care |
| • Includes all members of the care team in supporting the patient’s care—because information is available |
| • Ensures that the work environment is sustainable and healthy for our physicians and staff |
| • Integrates and leverages technology to improve care delivery |
| • Eliminates waste in the system by doing things right the first time |

I can no longer say, “Our patients want X; I need to ask first,” says Internist Sean Riley, MD, of the Skyline team in Colorado.

Table 2. 21st Century Care Innovation Teams

<table>
<thead>
<tr>
<th>Colorado: Skyline, Southwest</th>
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<tbody>
<tr>
<td>Group Health Cooperative: Burien</td>
</tr>
<tr>
<td>Hawaii: Nanakuli, Maui Lani</td>
</tr>
<tr>
<td>Mid-Atlantic States: Camp Springs</td>
</tr>
<tr>
<td>Northwest: Longview-Kelso, Tualatin</td>
</tr>
<tr>
<td>Southern California: Whittier</td>
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When they do need to come in, I can say, ‘Why don’t you come in right now; I have time.’”

The Evolution of the Telephone Appointment

While most physicians have made telephone calls to patients throughout their careers, there are some important changes the teams are testing. In some cases, patients are being offered a choice of a scheduled office visit or a scheduled telephone appointment visit (TAV) when they call the call center. TAVs are also being scheduled by the clinic staff for a follow-up visit. Internist and Pediatrician, Chris Shaw, MD, from the Longview-Kelso, Washington team (Northwest Region) says, “What’s nice with booked telephone visits is they say, ‘Dr Shaw will call within this time period,’ so it gives me a cushion and I don’t feel the pressure of people waiting in the waiting room. This makes my day better and patients think phone visits are great.”

In other cases, patients are offered a call back from their physician (in a one-to-four-hour time period) instead of immediately booking an appointment. TAVs are also occurring on an ad hoc basis when a physician looks at his/her schedule several days in advance and notices a scheduled appointment for something that could be handled over the phone. The teams call this “fishing.” Patients who have received these calls express surprise and are thrilled to talk to their doctor and resolve their problem quickly versus having to come in to the medical office to receive care.

In general, telephone visits are increasing and office visits are decreasing (Figure 2).

2. Secure Messaging

Use of secure messaging (confidential e-mail) by clinicians and patients is similarly changing demand for care and creating new capacity. Teams are experimenting with sending previsit e-mails to patients to begin a dialogue prior to the office visit, to better plan the visit, and to nurture their relationship. Patients are pleased to converse with their PCP through secure messaging. Physicians have commented that they can resolve patients’ needs through secure messages. With the resulting reduction in office visits, more time is available for patients who need a face-to-face visit. This experience is consistent with the formal secure messaging study conducted in the Northwest Region.

3. Population Care Management

Missed opportunities for better patient care now appear through the use of tools like the Panel Support Tool (PST), KP HealthConnect, and registries. With the increased capacity through the use of the telephone and secure messaging, the 21st Century Care Innovation teams are exploring ways to care for their whole panel of patients. Medical assistants who previously spent considerable time rooming patients for office visits, now have time with clinician team members to experiment with patient outreach (population care management) and engage patients in their own care (collaborative care management).

The PST—a sortable, Web-based member database populated with the medical information of a physician’s entire panel of patients—was codeveloped by Northwest, Hawaii, and KP-Information Technology to pro-

Figure 2. Trend of office visits and telephone visits at the Nanaikeola Medical Office in Hawaii.
People Using Technology to Transform Care: The 21st Century Care Innovation Project

Dr Shaw says “MAs and LPNs are calling members (on behalf of the physician) who are overdue for a mammogram, cholesterol check, or Pap smear.” He continues, “On a short-term basis, we are doing more so it isn’t saving time, but in the long term, taking care of all of the patient’s needs will reduce enormously the unfilled care needs, or even worse, complications.”

Stacey Johnson, Clinical Assistant on the Camp Springs, Maryland team (Mid-Atlantic States Region), says, “The patients are surprised when I call. Working with them outside of the office makes them more comfortable with me. I like it because I get to do more in my day than checking blood pressures and weights; I’m more connected to the patients.”

**Involving the Entire Care Team**

As the teams’ gain a better understanding of caring for their whole panel, they are also trying to utilize all the members of their care team within their licensure to address unmet needs. Nurse Practitioners are taking a key role in providing group appointments and outreach for patients with multiple comorbidities. Nurses are making outreach calls regarding medication compliance and relaying lab results. Many MD/RN/MA teams are now located in close proximity, often in the same office, to exchange information more easily, which equips the team to more effectively handle questions and messages from patients.

In addition, KP HealthConnect ensures all medical and health care is documented and available to team members when they need it. This has served to increase the competence and confidence level of everyone on the team.

“Having a nurse share my office has really increased our team work. We can share information and I don’t feel like I alone have the responsibility to provide care to my entire panel. I can count on any member of our team to pitch in. Everyone works at their highest scope of practice and potential,” states Dr Samir Patel from the Nanaikoa Team.

Dr Shaw concurs, “We are sharing the workload. When there are complex health care issues to talk with the patient about, I make the call. When there are suggested tests and advice, others on the staff are making the calls. We all help patients get what they need. The big benefit of working as a team is to be able to do more with limited time and resources. We have the flexibility to double, sometimes triple, how many problems we can solve for patients.”

Many of the teams are extending the traditional view of the care team beyond the MD, RN, LPN and MA, to include receptionists. At one facility, the Medical Intake Specialists (MIS), who greet and register patients, remind them of overdue preventive care needs and, with the patients’ permission, schedule an appointment with the ancillary department on the spot. Teams are also experimenting with expanding team membership to integrate other caregivers, including pharmacists, phlebotomists, nutritionists, behavioralists, and call center agents.

**The Voice of Members**

Although member satisfaction with telephone visits is being evaluated using a new survey developed by KP National Market Research, the results from existing Medical Office Visit surveys demonstrate that the changes the teams are making have an impact.

The Whittier team has shown improved satisfaction in “Seeing a Provider When Needed,” Appointment Access, and Overall Visit Experience (16%, 8% and 7% respectively) between September 2005 and June 2006. The Longview-Kelso team has seen similar patient satisfaction improvement during the same time frame with an increase in Overall Care (from 71% to 86%), Receptionist Courtesy and Respect (89% to 92%), and Physician and Clinician Interest and Attention (83% to 91%).

**Where Do We Go From Here?**

Can we draw conclusions about primary care transformation from the 21st Century Care Innovation Project work today? The nine months of available feedback and data indicate short-term improvement, but to effectively evaluate the impact of the changes requires more results.

The project team is collecting a consistent set of utilization, cost, quality, and member and physician/staff satisfaction data across all of the teams. These results should be available in the first quarter of 2007. The innovation teams are refining their new workflows to validate that they are sustainable over time. Teams will continue to test new ways to engage members in managing their health including more expansive use of KP HealthConnect Online features. In 2007, the package of changes developed by the original nine teams will be given to a new set of medical office teams to determine if the experience can be repeated and even improved.
Teams are in the early stages of transformation: something new is taking place. The 21st Century Care Innovation teams are gaining confidence that the changes they are making build upon each other to provide a new and better care system for members, and a more satisfying, sustainable work life for physicians and staff. Physicians and staff are energized, and members are very interested in the new ways KP can deliver care. With support from their local and regional leaders, the teams have had the opportunity to understand what the work is and should be, rather than simply accepting inherited processes. "I feel like this is the ‘doing things differently’ that we’ve been talking about for the past 20 years. We have preliminary data to show that we are meeting the needs of our panel with fewer office visits and that they are not going to other PCPs or urgent care. We are ‘touching’ more patients than we used to be able to," says Dr. Barton, MD, internist. "I can say, ‘I love my job.’ I wouldn’t have said that before. If we spend the time to perfect this over the next 6-18 months, it will be sustainable."

For more information contact project co-leads Ruth Brentari at ruth.brentari@kp.org or Leslie Francis at leslie.francis@kp.org.

The KPPG chartered a subgroup to oversee the work. The subgroup includes Louise Liang, MD, Senior Vice President of Quality and Clinical Systems; Jack Cochran, MD, Executive Medical Director, Colorado Permanente Medical Group; Bruce Perry, MD, Executive Medical Director, The Southeast Permanente Medical Group; Mary Ann Thode, President, Northern California Kaiser Foundation Health Plan and Hospitals; Claudine Salama, National Project Coordinator—KP HealthConnect, Coalition of KP Unions, AFL-CIO.

IHI faculty include Marie W Schall, MA, Director; Kevin Nolan, MA, Senior Fellow; Charles M Kilo, MD, Greenfield Health System; and Gordon Moore, MD, University of Rochester Department of Family Medicine.

References
“Stamp: The Doctor”
photograph
By Martin Stabler

This photograph is of a stamp issued in 1947 in honor of the doctors of America. The image is a reproduction of the painting “The Doctor” by Sir Luke Fildes. The stamp was first placed on sale in Atlantic City, New Jersey, on June 9, 1947.

Mr Stabler was a stamp collector as a child and has used this photograph to create notecards when sending a thank you to a physician. Mr Stabler is a consultant in the Quality and Informatics Department at Group Health Cooperative.

More of Mr Stabler’s art can be found on page 65.
Editor’s Note: The following is the last chapter from the new book published by The Permanente Press: Health Care Co-Ops in Uganda: Effectively Launching Micro Health Groups in African Villages, by George C Halvorson, CEO and Chairman of the Board of Kaiser Foundation Health Plan, Inc., and Kaiser Foundation Hospitals. This chapter includes clinically interesting descriptions of locally enacted prevention measures for reducing malaria, diarrhea, and contaminated water. Drawing on his experiences from around the world, Mr Halvorson iterates the universality of the desire for health and health care.

While with HealthPartners—a large Minnesota-based health care cooperative associated with Land O’Lakes, a Minnesota dairy cooperative—Mr Halvorson led the development and implementation of health care co-ops in rural Uganda. Land O’Lakes, as part of its mission, had worked in Uganda to develop dairy co-ops in the past and approached HealthPartners with the idea of working within the dairy co-ops to bring health care to central Africa.

Working with the United States Agency for International Development (USAID) and the government of Uganda, Mr Halvorson, together with American and Ugandan physicians and health care professionals, set out to help Ugandan farmers help themselves. Drawing on their vast understanding of health insurance and care delivery organizations, they went from village to village helping local tea and dairy co-ops set up a sustainable health care system.

Using a clear, highly readable, down-to-earth style with colorful anecdotes, Mr Halvorson has written a compelling primer on developing a cooperative health care system, while telling a story at a most basic human level—people helping people in need to help themselves.

On the top of a Buhweju District mountain, 35 kilometers from the nearest electricity, 45 kilometers from what used to be the nearest care, and several thousand feet over the moist and fertile local flat land, members of a two-year-old tea-leaf-based health care cooperative have actually built a tiny hospital and clinic. I visited the site just before I left HealthPartners. The local tea farmers had hand-carried both sand and water up the mountainside to build the hospital. They baked thousands of red bricks and then used those bricks to assemble a five-room building with a tin roof. That building now contains two maternity beds, five acute care beds, a tiny delivery room, one wire bassinet, and a table and chair in an exam room that also serves as a laboratory for doing malaria tests. The new care site has no electricity and no running water. The only lighting comes in through open windows. Flashlights are used after dark. The beds have clean, flat surfaces, but no mattresses or blankets.

But, the site does have a physician and a nurse. And clean water. It takes care of people who really need care. It exists only because of the tea growers’ co-op.

The Bushenyi Medical Center (BMC)—a private hospital and clinic 45 kilometers away—has contracted with the tea co-op to provide a doctor and nurse every day for that clinic. They agreed to provide that care on top of Bushenyi Hill because the co-op members who live on the steep hillsides surrounding the clinic have each agreed to set aside a portion of their tea harvest each month to pre-pay BMC for that care. Care arrived on that remote mountaintop only because the new co-op gave people a way to pay for that care.

A hospital with bare bunks for beds, no electricity, and hand-carried water may not seem like much to Americans. But, before that Bushenyi Hill Clinic existed, every person in the area who needed significant levels of care had to be carried down the mountain on wicker stretchers. Those stretchers doubled as local hearses—sometimes on the same trip. The road is steep, rock strewn and very slippery in the rain. Uganda has two rainy seasons each year. Carrying a stretcher down that steep mountain on a wet day is not a journey for the faint of heart, or for people who need care quickly.

Now babies are delivered, minor surgery is performed, malaria is treated, and broken limbs are repaired on the mountaintop.

Also, now that the Bushenyi Hill Co-Op Hospital and Clinic is in place, the people who are in the most dire straits have a new and more convenient access to the Bushenyi Hospital 45 kilometers away. The co-op has also created the area’s first real “ambulance” service. Taxicabs do the work. The health plan members who built the clinic building have collectively pooled part
of the money they earn from selling their tea leaves to purchase a small solar-powered two-way radio. That radio lets the doctor on the hill call down to the main clinic to have a local taxicab come up the narrow, deeply rutted and sharply winding road to pick up the most severely ill patients. The co-op now pays for that otherwise totally unaffordable taxi ride for seriously ill co-op members. It’s part of the co-op benefit package.

Women having difficult labor were the first patients to use that service. The local taxis are small, dirty, and definitely not new, but they are a massive improvement over an open wicker stretcher and a 12-hour carry. Particularly, as I noted, in the rainy season.

“Rain Harvest” Water Tank
That particular tea-funded health care co-op has also installed a “rain harvest” water tank and gutter system to take advantage of the rainy seasons and collect clean water off the tin roof of the clinic. Until that tank was built, any water brought to the clinic—or to the tea growers’ small homes on the mountainside—had to be hand-carried, usually in bright yellow 20-gallon plastic jugs. The new, co-op-funded “rain harvest” process saves a lot of carrying. Fresh water is also an obvious asset for patient care. Uganda is blessed with ample rain. The new rainwater-harvesting system uses metal gutters placed at the edge of the all-metal clinic roof to divert rainwater into a large storage tank. That relatively clean source of water helps treat patients in the clinic.

Similar rain harvest tanks will soon be built in several local co-op members’ homes, with the goal of reducing the parasite infections and dysentery that come all too often from the nearby highly polluted small river that is otherwise the primary source of water for the tea growers and their families.

The co-op is encouraging the development of those water harvest tanks as part of the disease prevention agenda for the health plan and is helping to fund the construction.

Before the tea co-op existed, there was absolutely no disease prevention agenda on Bushenyi Hill. Now there is a carefully thought-out plan that is already making real improvements in local health.

Preventing Disease Is a Top Priority
The number one health care problem in Uganda is malaria. It kills far more Ugandans than HIV/AIDS. Over 90% of Ugandans have had malaria at least once.

Malaria in Uganda is spread almost exclusively by a night-flying mosquito. These mosquitoes are particularly plentiful in the rainy season. In the two rainy seasons each year, mosquitoes thrive in the puddles that form. Malaria epidemics often follow. The disease weakens most Ugandans and kills many thousands—with children most vulnerable to dying. Children who are already anemic from other common, local parasites are at the very highest risk.

Now, because the health care co-op is in place, if you look into the houses of many co-op members on top of that mountain, you will also see large, rectangular fine-meshed mosquito nets suspended over many of the beds. The nets are permanently impregnated with a chemical that kills mosquitoes. (The chemical used on the nets is a natural extract from the chrysanthemum flower.) Because homes in rural Uganda have no screens or glass in the windows, these nets create the only place that the community members can go to avoid the mosquitoes.

Initial data indicates that the new nets have cut the incidence of malaria in that co-op by more than half.

So, at the top of the Bushenyi Mountain, because a small health care co-op was formed, there is now a small hospital, a miniscule clinic, a medical transportation service, a malaria prevention program, and better access to safe water. It’s totally self-governed and totally self-financed. There is no charity care on the top of that hill.

The local tea farmers own the care site as a co-op. Those same farmers “own” and lead the local mini health plan. Those farmers, as a group, make the key decisions about their benefits, their care sites, their premium levels, and their care.

Life is better for entire families because the co-op exists on the top of that hill.

No portion of that care system—except for the warmth, caring, and personal skills of the wonderful medical and nursing staff—would meet minimum standards of care anywhere in the United States. But those standards are not relevant on the top of that mountain.
The whole effort has to be seen in the perspective of local reality. In Bushenyi, that care site is a blessing and a miracle. More than 100 people walked up to 15 kilometers one way—mostly uphill—for the grand opening. Singers, dancers, drummers, and local politicians made the opening day a memorable and festive occasion.

A key part of the celebration was the sense by the community that they were helping themselves because the co-op that was the foundation for the new and improved care was not a charity, but a local organization that the co-op members governed and owned.

**A Guide Book, Not a Rule Book**

This book was written to help people think about setting up similar cooperatives and micro health plans in places other than Uganda. It was intended to be both a story about an idea and a guidebook—a partial implementation manual of sorts. My goal was to describe some of the underlying principals used to run the plans, along with some of the specific tools needed to get similar health plans started.

Starting a co-op health plan—or micro health “scheme” as our Ugandan friends sometimes term it—offers some obvious immediate challenges. Issues need to be addressed and resolved. There are actuarial issues, administrative issues, training and marketing issues, cash flow challenges, care delivery challenges, and major communications and continuity problems. Current funding for health care in the areas served by the co-ops is almost always overwhelmingly inadequate. The local care system is slender, fragile, heroic, and overworked.

Total health care spending in Uganda averages about $12 per person per year. There is one doctor for every 18,450 patients. There is no government hospital plan—although the government does try very hard to set up its own hospitals and medical groups in various areas of the country. Technically, the government is responsible for everyone’s health care. Budget constraints make that obligation pretty much impossible to achieve.

Uganda is not a place where either standard European health financing models or typical American health financing approaches have much chance of success at this point in Ugandan history. The co-op approach is designed to fit into that harsh, but clear, economic reality—to create what leverage can be built around local people who want better health care. Local heroes have made local co-ops possible.

Offsetting the immense problems involved in setting up these little health care co-ops is an immense, compelling, and totally understandable desire by many Ugandans to provide affordable health care to their children, families, and community.

Also offsetting these problems is an obvious desire by the heroic and overworked Ugandan caregivers—hospitals and physicians—to make care accessible and affordable for their patients.

Into that setting, the HealthPartners staff brought many decades of experience with just about every variation of American insurance and prepaid systems. That experience was coupled with a strong commitment to the concept and practice of cooperative health care organizations, buying groups, and risk-sharing plans. Some parts of these several decades of United States-based comparative health experience have, we believe, proved to be both relevant and useful to local communities in the “Pearl of Africa.”

**Premium For Pennies**

If you measure by American dollars, the insurance coverage that has been created in Uganda by the new health care cooperatives is a miraculous value. Premiums run 12,000-20,000 shillings for a family of four for three months. Each additional family member usually costs about 2500 shillings. The exchange rate at the time we started the plan was roughly 1700 shillings for one United States dollar. So our initial health care coverage cost less than 50 cents a month for each person. By contrast, coverage in the United States often now runs more than $200 a month per person.

That’s an amazing cost difference. It’s interesting to break it down into comparable terms. American health plan premiums are now roughly 27 cents per person per hour. Uganda health plan premiums, when I last personally worked with the plans, were only 49 cents per person per month. The contrasts are stunning. And, a bit humbling.

In the United States, of course, health plans have to buy care at American prices. A routine day in a United States hospital can easily cost $4000. Many United States hospitals now charge $5000 to $10,000 for a day of care. A few charge $20,000 a day—and more. By comparison, a private room at Ishaka Hospital in southern Uganda costs 5000 shillings a day, or about $3. The care delivered in the United States for $4000 a day is, of course, very different from the hospital care in Uganda that costs $3 a day. But the $3 a day hospital care has saved a lot of lives. It’s a pretty good deal when the alternative is a dirty mat on the muddy ground and no caregivers in sight.

Medical care cost differences are almost equally extreme, and also amazing. A Ugandan doctor working in a government hospital will be paid roughly $500 a
month. A United States doctor—right out of medical school and residency program—will be paid $120,000–$360,000 per year, depending on specialty. So, it’s possible to buy medical care in Uganda for a lot less money. Premium—in both the United States and Uganda—is simply based on the cost of care. In the United States or Uganda, plans compute premium by adding up the costs of care and dividing by the total number of members. In Uganda, the care costs a lot less. So, a health plan in Uganda can charge a lot less for coverage.

What HealthPartners has done in a few rural areas of one African country may or may not have wider application in some other part of the world. Each local setting has its own unique characteristics that may or may not lend itself to approaches similar to the ones described in this book. This book does not offer this model of co-op-based micro health units as a cookie cutter for international care. I only offer the story as an example of what seems to work in this particular place at this point in time.

It is my hope, however, that some of what we’ve learned in Uganda might prove to be useful to you as a reader in some other comparable setting.

**What Have We Learned?**

So what have we learned in setting up tiny health care co-ops in the heart of equatorial Africa?

We learned that people everywhere want health care for their kids and are willing to work both hard and cooperatively to make that happen.

We learned that caregivers in those kinds of impoverished areas can be really good partners in creating community-based health care programs.

We learned that prevention really does work, and that caregivers who are prepaid can do very creative, patient-focused things to help patients avoid malaria, avoid dysentery, and avoid the complications of problem pregnancies.

We learned that local people, given the right tools, can set up self-perpetuating prepayment programs with local providers of care in ways that work for both the provider and the patient.

We learned that care providers everywhere share an inconsistency of practice patterns that aren’t always optimal for patient care.²

We learned that many parts of the American insurance underwriting and benefit design tools and concepts can be transformed in useful ways for decision making by small health care co-ops whose leaders are sometimes illiterate and whose members are almost all breathtakingly poor.

What are we still debating about this approach?

We’re not entirely sure about the “no charity” rule. It’s hard to hold ourselves to that standard. We very much wanted the local health plans to be self-sustaining—not subsidized in any way by charity money. It seems to work. But, it’s a very painful rule to maintain. It probably does have a real impact on how well providers deal with prepayment—but it’s a really hard rule to follow, when we have resources and those resources are so badly needed in Uganda.

We’re also not sure about the role of reinsurance to help with the occasional epidemic, and its cost impact on prepaid caregivers. Some form of reinsurance probably makes sense—but having the reinsurance kick-in at 120 percent of total cost obviously creates a major physician incentive to spend more than 20 percent beyond capitation—adding costs as quickly as possible to get to the richer pot of money. A disease-specific reinsurance approach probably makes the most sense—with malaria as the key disease to be reinsured.

We’re not sure about the best way to continuously support the continuing formation of the micro health co-ops. They can be self-sustaining, once started, but they do take expertise and skill to be initially organized and set up properly. They don’t just happen.

**Brazil and Chile**

I spent some time in both Brazil and Chile looking at the variations of local health plans in those countries. Both were fascinating. The Chilean model didn’t seem as directly applicable, but some portions of the Brazilian model looked a lot like the provider-instigated and owned health plans we helped start in Uganda. More than 1000 small, prepaid health plans have sprung up in various Brazilian towns, villages, and communities—
all built by local care providers on the basis of locally available care. As near as I could tell from talking to local caregivers and government officials, none of the Brazilian mini plans had a consumer co-op base. The government of Brazil was wrestling with the issue of how to regulate those plans. It seemed to me that excessive regulation by the Brazilian government could potentially drive more than a few of those small but thriving local plans into extinction.

It wasn’t at all clear whether various local populations in Brazil would be better off without their small local plan. Some policy leaders argued that the gap that was left would be filled nicely by much larger and better capitalized national and multinational insurers. That may be true. I doubt it, however, because the local mini plans were set up to be very much local niche products—and the large national plans didn’t seem to have the potential to reach out to each and every niche.

I could be wrong. It was a fascinating learning experience to spend time looking at these plans.

I’ve also talked to people from India about some micro plans that have been forming there. Again, not co-op plans as such. The micro credit groups of Bangladesh, however, seem to come from that particular market context, and the health plans they are trying to create might be fairly similar to the Ugandan micro credit centralized health plans.

So, I can’t speak with any comfort about the existence of the pure consumer co-op model in any setting other than Uganda. But, there do seem to be some similar local prepaid approaches evolving from various micro credit groups in a number of settings.

If that’s true, that may well be enough to create a workable co-op model that could have some relevance in other developing country settings.

### Urban United States

Interestingly, it’s not impossible to imagine some relevancy for that cooperation model in some of the inner cities of the United States. Building very local, consumer-run health care co-ops might well turn out to be a viable program for certain United States urban settings. If those very local plans were supported with some workable external infrastructure, they could well serve as a mechanism for very local health care reform. The idea is worth exploring. It would require some very progressive legislation to permit local models to form. It could be very interesting to have some of the same underwriting and coverage discussions in urban America that we had in rural Uganda.

### In The End

Overall, the Uganda effort has been a success. People are receiving care. The model works.

It’s not entirely clear whether or not that co-op model would work anywhere else—but it’s worth thinking about. The little hospital on the top of the mountain is an amazing testament to what local people can do given the right opportunities.

I hope this book was useful. Be well.

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If you are interested in ordering a copy of **Health Care Co-ops in Uganda**, visit [www.kp.org/permanentejournal](http://www.kp.org/permanentejournal) or contact The Permanente Press at 503-813-2623.

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### Medical Care For Our Children

We now have good veterinary care for our cattle.
Is there any way we can also get medical care for our children?

— Question posed by Ugandan dairy co-op farmers that led to the development of the Ugandan health care co-ops in Health Care Co-ops in Uganda: Effectively Launching Micro Health Groups in African Villages by George C Halvorson

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Patience is a Virtue

By Laura Morgan, MD

Patience is a virtue
we struggle to express,
A gift we give ourselves and others
in times of distress,
A cleansing breath of oxygen
through rushing clouds of smoke,
A window on the Absolute
as when we first awoke.

Patience with Patients

By Laura Morgan, MD

To choose the folding into,
then expanding out from another’s experience
in its own time,
despite the hounds of hurry;

To wait upon what is beyond
as reflex,
flexible acceptance,
despite the call of clamor;

To follow the leading heart,
trusting trust to heal,
holding separate the still moment
despite the urge to urgency.

Laura Morgan, MD, is a family physician at the Oakland Medical Center in Oakland, CA. She also leads Balint Group meetings in Northern California. E-mail: laura.morgan@kp.org.
The Role of Primary Care Practitioners in Psychosocial Care in Germany

By Steffen Häfner, MD
Ernst-Richard Petzold, MD

Editor’s Note: Medical practice in Germany functions at a high level and everyone is provided coverage. One notable difference from the US is the major role that psychosomatics has in everyday primary care. At a time when one sees euphemisms here such as “Comprehensive Clinic,” in Germany the title “Psychosomatic Clinic” is widespread, not only in signage, but in practice. How ‘psychosomatic’ became equated with ‘imaginary’ in the minds of American patients is unclear, but it is a significant disadvantage. Two experienced German physicians here describe a major difference between the actual operation of primary care in Germany and in the US. The cost implications of this difference are of significant interest when one reflects that costs here are higher and coverage less.

— Vincent J Felitti, MD

Introduction

Several epidemiologic studies in Germany have shown that about 25% of the general population suffer from psychogenic disorders that fulfill the criteria of a case that needs treatment. These figures are comparable to data from the National Comorbidity Study (NCS) in the US or the Edmonton Study in Canada. Many of these patients are seen by general practitioners (GPs).

The treatment of psychogenic disorders in Germany is mainly done by GPs. Physicians, especially GPs, have a major screening function in the care of patients suffering from psychologic disorders. Zintl-Wiegand and Cooper point out that it was the studies of Michael Balint and his co-workers as well as the distribution of Balint groups in general medicine that played an important role so that the influence of psychodynamic concepts was ultimately greater in the group of GPs than in other medical disciplines. The diagnosis and therapy of somatoform disorders are often difficult and unsatisfactory for the attending physician. Multiple diagnostic tests, ineffective treatment, and time absent from work create high costs for the social security system.

It is obvious with this group of patients that GPs have responsibility in terms of screening, filtering, prevention, and treatment. Glaesmer and Deter showed how costs can be reduced with psychosomatic basic care offered by GPs. Tress et al. investigated the frequency of psychogenic disorders in the offices of 18 GPs. Five hundred seventy-two patients were examined and diagnosed by a psychosomatic therapist after the GP’s consultation. They rated the Impairment Score (IS) and gave a diagnosis according to DSM-III-R classification. Patients did self-ratings by questionnaires (for example SCL-90-R) and answered questions about their subjective illness theory. Over a third of the patients fulfilled relevant DSM-III-R criteria and showed considerable impairment with IS >4, fulfilling the formal criteria for a psychogenic disorder. By means of SCL-90-R, 31.7% were classified as psychogenically ill. There was no sex difference in the frequency of psychogenic disorders. By contrast, the GPs had a conversation with only 11.5% of their patients related to psychosomatic basic care; only 3.5% were referred to psychotherapy. These numbers were higher with psychogenically ill patients who themselves assumed a psychic cause of their illness. These very measurements acknowledge the importance of psychosomatic medicine in Germany, and the GPs’ accepted role of psychosomatic basic care as part of their diagnostics and therapy.

Although the majority of patients with psychologic disorders are seen in primary care where the diagnosis of the GP decisively influences the subsequent treatment,...
The Role of Primary Care Practitioners in Psychosocial Care in Germany

Psychotherapists’ ratings agree much more with patients’ self-assessment than do GP ratings.14

Psychosocial Disorders are Very Often Overlooked in Primary Care

In a following study Kruse et al15 investigated the reasons why GPs overlook so many psychogenic symptoms in their patients. In this study (physician-patient consultations of 120 patients with psychologic disorders in 16 primary care practices) physicians identified 60.8% of the psychologic disorders. There was a significant association between physician’s identification of psychologic disorders and the severity of the disorder, the number of complaints reported during consultation and the pattern of physician-patient interaction. The study shows that the interactional process during primary care consultation is very important, and is associated with physicians’ identification of psychologic disorders.3

Depression in Primary Care Practice

Jacobi et al15 focused on patients with depression. They examined the prevalence of depressive syndromes among unselected primary care patients as well as physicians’ recognition and treatment rates. This nationwide German study included a total of 20,421 patients seeing their primary care physicians (n = 633) on the study’s target day (4/15/1999). The findings confirm the high prevalence of depressive syndromes in primary care settings (11.3%) and underline the particular challenge posed by a high proportion of patients near the diagnosis threshold. Although recognition rates among more severe major depressive patients (59%), as well as treatments prescribed, appear to be more favorable than in previous studies, the situation in less severe cases, and the high proportion of physicians’ definite depression diagnoses in patients who do not fulfill the diagnostic criteria, still raise significant concerns.16

Current Research Topics in Germany

In a cooperation of GPs and psychosomatic clinicians, Heidelberg University carries out and evaluates a curriculum called “FUNKTIONAL,” which will help GPs to recognize and treat somatoform complaints as early as possible. The study aims at optimizing diagnostics and treatment and at increasing the patients’ satisfaction and quality of life by special training of GPs. The aim is to record systematically short- and mid-term effects of the intervention, on patients and physicians. The curriculum has been implemented and is being evaluated in a randomized controlled trial.17,18

In a systematic review of nine studies that took place between 1966 and 2003, Fritzche et al19 found that psychosocial interventions by German GPs are effective but that there is need for improvement because clinical effects were usually limited and of short duration. Studies with specific therapeutic approaches in specific disorders showed the best results. They conclude that further conceptual development is necessary of structured psychosocial interventions that can be applied in the general practice for common emotional disorders.

Considering the large number of patients with emotional disorders in primary care, Fritzche et al. conclude that these efforts will undoubt-edly be worthwhile.19

Overall, there are many efforts to train GPs to be qualified for psychosomatic basic care. They are trained to reflect on the physician-patient relationship, for example in Balint groups. If psychosomatic basic care is not enough for the patient, there are two branches of the Psychotherapy Service Delivery System in Germany: the inpatient and the outpatient system.

The Inpatient System

Historically, the development of the inpatient system in Germany began with local experimentation by Georg Groddeck in Baden-Baden in the year 190020 and by Ernst Simmel in Berlin in the 1920s. It is an interesting fact that after World War II inpatient psychotherapy was considered acceptable for insurance coverage long before outpatient psychotherapy became eligible.21

This inpatient trend has been increasing since the 1970s, when those hospitals established for the treatment of chronic somatic diseases (such as tuberculosis) were forced to find a new patient base. Psychosomatic medicine turned out to be a comparatively inexpensive treatment modality and therefore was financially attractive to owners of rehabilitation institutions. There are specific indications and guidelines for inpatient treatment.22

The Outpatient System

The present system of funding psychotherapy allows for regimens that are detailed in the guidelines.23,24 Funding is easier for short-term psychotherapy than for long-term treatment. So, short-term psychotherapy is often indicated for...
The Role of Primary Care Practitioners in Psychosocial Care in Germany

patients in an acute crisis, with a defined and limited focus, or to test motivation for a long-term psychotherapy. For long-term treatment, peer review is required at each phase to confirm that further treatment is medically needed.21

Health Insurance in Germany

In Germany, the health insurance system ensures that necessary outpatient and inpatient medical treatment is available at the time of need for individuals from all strata of society, regardless of their financial situation. With few exceptions, the patient pays no more than his or her regular insurance premium (approximately 14% of income). These regulations powerfully shape the nature of the psychotherapy service delivery system.21

The system of providing psychotherapy is regulated by agreements between the health insurance companies and the national corporate organization of physicians: Kassenärztliche Bundesvereinigung (KBV), which regulates matters of public health and oversees payment of medical care.

Patients have a choice of physicians. Just as the public health insurance companies together form a corporate entity, nearly all physicians (and psychotherapists) are members of the Kassenärztliche Vereinigung (KV). Fees for psychotherapists’ services, as for physicians’ services, are negotiated between these two corporate organizations and are very often compromises. The German system of third-party payment is explicit about the fact that the patient makes no direct payment; instead the therapist writes a detailed report to request that the health insurance company cover the cost of treatment. Peer reviewers examine the claim and, if approved, the therapist is compensated via the local branches of the KBV. The German social insurance system is supervised by the state, but it is not a national health service. The patient’s right of legal redress is directed not at the state but at the health insurance company, an arrangement dating back to insurance regulations implemented by Chancellor Bismarck (1815–1898) at the end of the 19th century.

The Guidelines (Psychotherapie-Richtlinien)

To direct the practitioner and to ensure quality of care, clinical guidelines (called Psychotherapie-Richtlinien) are continuously monitored by the KBV, which makes its judgments on the basis of input from peer reviewers elected from the field. There are specific clinical indications for psychodynamic therapy and psychoanalytic therapy as well as for behavior therapy. The guidelines specify that psychotherapy provided by health insurance is restricted to those illnesses whose course can be influenced for the better. Thus, the patient officially requests insurance coverage, and the psychotherapist is called upon to provide the peer reviewer with evidence suggesting that the intended therapy has the potential to alleviate, improve, or cure the neurotic or psychosomatic disease in question.21 The directives for psychotherapy, which were established in 1967 for the compulsory national health insurance system, had a strong influence on the subsequent development of psychotherapy in Germany and the general framework of the directives for psychotherapy in the decades following.21

Whether therapy is extended or not depends on the assessment of the peer reviewer. On the basis of the guidelines, the peer reviewer determines treatment duration: Analytic psychotherapy should, as a rule, achieve a satisfactory result in 160 sessions—in special cases, up to 240 sessions. Further extension to 300 sessions is possible under exceptional circumstances, which must be supported by detailed arguments. Even 300 sessions do not constitute an absolute limit in the event that valid, convincing evidence of need is presented. In the unlikely event that therapist and peer reviewer do not agree, a patient may go to court and, in some cases, successfully claim more sessions.

The Triad of Necessity, Effectiveness, and Economy

Health insurance companies are obliged to cover costs when the symptoms constitute an illness and when the triad of necessity, effectiveness, and economy is also satisfied. German psychotherapists, whether medical physicians or psychologists, must keep these criteria in mind, both in diagnosis and in treatment. Psychodynamic therapy and psychoanalytic therapy are not covered by public health insurance if they do not have the potential to bring about cure or amelioration of a disease, or to lead to medical rehabilitation. This regulation also disallows interventions intended exclusively for professional growth and development, social adjustment, child-rearing guidance, and other similar measures.21

General practice in Germany has had a strong involvement with psychosomatic medicine after World War II, in part due to the influence of the innovative Hungarian psychoanalyst, Michael Balint. According to the severity of the psychosocial disorder, patients are seen by specially qualified GPs, in an outpatient setting by psychotherapists (medical physi-
The Role of Primary Care Practitioners in Psychosocial Care in Germany

References
Clinical Evidence Review: Best Practices

Asthma

By Thomas Stibolt, MD

Introduction

More than 20 million Americans—young and old alike—have asthma, a condition that is both common and expensive. Direct medical costs for asthma treatment exceed $9.4 billion. Despite availability of effective therapy for controlling asthma, its incidence is increasing; nonetheless, asthma continues to be underdiagnosed and undertreated. Appropriate management of asthma requires:

- correct diagnosis;
- assessment of severity and control
- proper management, including appropriate medication, patient education, and a written action plan
- ongoing monitoring by the patient
- appropriate follow-up; and
- specialty referral where appropriate.

This article is an overview of the recently revised physician guidelines for asthma care.

Case Example

A 32-year-old female smoker presents with a seven-day history of “bronchitis.” She states that she experiences a harsh, rattling, nonproductive cough with chest tightness three-to-four times each year. She requests a prescription for guaifenesin with codeine and either erythromycin or azithromycin, which was prescribed for her in the past and which usually takes effect after about seven-to-ten days.

She is afebrile and has had scant clear nasal discharge for the past three days. She has no chest pain, tightness, or heaviness. Physical examination shows that she has a harsh-sounding, paroxysmal cough without nasal flaring, cyanosis, or retractions. Her respiratory rate is 16 breaths/minute, and pulse oximetry shows 96% saturation on room air. Pulmonary examination shows slight expiratory wheezing and occasional bibasilar rhonchi that clear with coughing. Results of cardiac examination are normal, and no ankle edema is present.

What is the patient’s diagnosis? What additional history would be helpful? What additional testing would you perform? How severe is her condition? How do you explain the diagnosis to her? What is the appropriate follow-up?

Definition of Asthma

Kaiser Permanente’s (KP) CMI Asthma Guidelines define asthma: Asthma is a chronic inflammatory disorder of the airways in which many cells and cellular elements play a role. In susceptible individuals, the inflammation causes recurrent symptoms of breathlessness, wheezing, chest tightness, and cough. There is usually widespread airflow obstruction with these episodic symptoms, which is reversible to varying degrees either spontaneously, or with treatment. The inflammation appears to be linked to an increase in airway hyperresponsiveness to a variety of stimuli.

Diagnostic Procedure

To establish the diagnosis of asthma, the clinician must determine that:

Table 1. Differential diagnosis of asthma

<table>
<thead>
<tr>
<th>Condition</th>
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<tbody>
<tr>
<td>Congestive heart failure</td>
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<tr>
<td>Chronic obstructive pulmonary disease (COPD)</td>
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<tr>
<td>Cystic fibrosis</td>
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<tr>
<td>Drug reactions (eg, angiotensin-converting enzyme (ACE) inhibitor)</td>
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<tr>
<td>Foreign body aspiration</td>
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<tr>
<td>Hypersensitivity pneumonitis</td>
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<tr>
<td>Hyperventilation syndrome</td>
</tr>
<tr>
<td>Ischemic heart disease</td>
</tr>
<tr>
<td>Occupational lung disease</td>
</tr>
<tr>
<td>Panic attacks</td>
</tr>
<tr>
<td>Pneumonia</td>
</tr>
<tr>
<td>Pneumothorax</td>
</tr>
<tr>
<td>Postviral cough</td>
</tr>
<tr>
<td>Pulmonary emboli</td>
</tr>
<tr>
<td>Restrictive lung disease</td>
</tr>
<tr>
<td>Upper airway obstruction</td>
</tr>
<tr>
<td>Vocal cord dysfunction</td>
</tr>
<tr>
<td>Vasculitis</td>
</tr>
</tbody>
</table>

Adapted and reproduced by permission of the publisher and author from: National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 2: Guidelines for the diagnosis and management of asthma. (Bethesda, MD) National Institutes of Health, National Heart, Lung, and Blood Institute; 1997. (NIH Publication No. 97-4051), Figure 1-5, p 22.3

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Thomas Stibolt, MD, is Senior Physician, Department of Pulmonary & Critical Care and Department of Medical Informatics for Kaiser Permanente Northwest. He is also a physician advisor to the National Clinical Library. E-mail: tom.stibolt@kp.org.
• episodic symptoms of airflow obstruction are present
• airflow obstruction is at least partially reversible
• alternative diagnoses are excluded.2,3

The diagnosis is usually derived from the patient’s medical history and results of physical examination. However, certain cases necessitate further diagnostic evaluation, including spirometry, bronchial inhalation challenge tests, blood and sputum studies, chest x-ray examination, or a combination of these procedures.2,3

Performing spirometry before and after use of a bronchodilator is essential for diagnosis and ongoing monitoring of asthma.2,3 Often underutilized, spirometry is a reliable way to confirm presence, variability, and reversibility of airflow obstruction as well as to measure change in airflow obstruction as changes are made in therapy and as changes occur in the patient’s condition over time. Spirometry is also useful to help exclude other diagnoses frequently confused with asthma (Table 1). Asthma is diagnosed when spirometry shows a clinically significant response to bronchodilator use (>15%), frequently with normalization of values. In the patient above, spirometry would be useful to differentiate asthma from bronchitis, a disease with either fixed or no airflow obstruction. A methacholine challenge test may be useful in patients who have normal spirometry results despite symptoms suggesting asthma. Comorbid conditions such as sinusitis, allergy, gastroesophageal reflux disease (GERD), and hypothyroidism may worsen asthma. A smoking history of more than 20 pack-years, even in a patient who has clearly had asthma in the past, should raise suspicion of chronic obstructive pulmonary disease (COPD). Dyspnea alone or exertional chest pain should suggest another diagnosis than asthma—in particular, a diagnosis of cardiac or thromboembolic disease. For patients who comply with recommended therapy, poor response to treatment should also raise suspicion as to the correct diagnosis. Stridor (squeaky sounds over the larynx, especially on inspiration) should suggest vocal cord dysfunction.

**Assessment of Asthma Severity**

All asthmatic patients should be categorized as having either intermittent or persistent asthma.4 Intermittent asthma is defined by the National Heart, Lung and Blood Institute (NHLBI) as symptoms ≤2 times per week, asymptomatic and normal peak expiratory flow (PEF) between exacerbations, brief exacerbations (duration varies from a few hours to a few days); intensity may vary. Mild, intermittent

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Nighttime symptoms</th>
<th>Lung function</th>
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</thead>
<tbody>
<tr>
<td>• Symptoms ≤2 times per week</td>
<td>≤2 times per month</td>
<td>• FEV₁ or PEF ≥80% predicted</td>
</tr>
<tr>
<td>• Asymptomatic and normal PEF between exacerbations</td>
<td></td>
<td>• PEF variability &lt;20%</td>
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<tr>
<td>• Exacerbations brief (from a few hours to a few days); intensity may vary</td>
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Mild, persistent

<table>
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<th>Symptoms</th>
<th>Nighttime symptoms</th>
<th>Lung function</th>
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</thead>
<tbody>
<tr>
<td>• Symptoms &gt;2 times per week but &lt;1 time per day</td>
<td>&gt;2 times per month</td>
<td>• FEV₁ or PEF &gt;80% predicted</td>
</tr>
<tr>
<td>• Exacerbations may affect activity</td>
<td></td>
<td>• PEF variability 20-30%</td>
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Moderate, persistent

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<tr>
<th>Symptoms</th>
<th>Nighttime symptoms</th>
<th>Lung function</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Daily symptoms</td>
<td>&gt;1 time per week</td>
<td>• FEV₁ or PEF &gt;60%&lt;80% predicted</td>
</tr>
<tr>
<td>• Daily use of inhaled short-acting beta-2-agonist</td>
<td></td>
<td>• PEF variability &gt;30%</td>
</tr>
<tr>
<td>• Exacerbations affect activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Exacerbations ≥2 times per week; may last days</td>
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Severe, persistent

<table>
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<tr>
<th>Symptoms</th>
<th>Nighttime symptoms</th>
<th>Lung function</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Continual symptoms</td>
<td>Frequent</td>
<td>• FEV₁ or PEF &lt;60% predicted</td>
</tr>
<tr>
<td>• Limited physical activity</td>
<td></td>
<td>• PEF variability &gt;30%</td>
</tr>
<tr>
<td>• Frequent exacerbations</td>
<td></td>
<td></td>
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Adapted and reproduced by permission of the publisher and author from: National Heart, Lung, and Blood Institute, National Asthma Education and Prevention Program. Expert Panel Report 2: Guidelines for the diagnosis and management of asthma. [Bethesda, MD:] National Institutes of Health, National Heart, Lung, and Blood Institute; 1997. (NIH Publication No. 97-4051), Figure 1-3, p 20.2,3

PEF = peak expiratory flow; FEV₁ = forced expiratory volume in one second
Patients often underreport their nighttime symptoms ...

few hours to a few days), and nighttime symptoms ≥2 times per month. This criterion applies only prior to treatment with any asthma medication. The classification of persistent asthma refers to patients who are more symptomatic than intermittent asthma and exhibit an forced expiratory volume in one second (FEV₁) of less than 80%, which is consistent with airflow obstruction.

Persistent asthma can be further classified as mild, moderate, or severe (Table 2), although treatment is more strongly related to response to medication than to initial severity of disease. The classification system presented in Table 2 should be on the basis of the patient’s status before treatment; the classification system is more difficult to use in asthmatic patients already receiving treatment. For that reason, the classification system is best used as a guide. Presence of any symptom in a higher classification places the patient at that higher level. Patients often underreport their nighttime symptoms, so these symptoms must be specifically sought out by clinicians.

Patients are at high risk for hospitalization, emergency department visits, and unscheduled medical care if they meet any of the following criteria:

- hospitalization for asthma within the prior 12 months
- baseline FEV₁, forced vital capacity (FVC), or FEV₁/FVC <60% of predicted value;
- four or more canisters of short-acting beta-agonists dispensed in 12 months and any use of a systemic corticosteroid agent in the same 12-month period;
- 12 or more canisters of short-acting beta-agonists (or six or more prescriptions for these drugs) dispensed in a 12-month period.

Experience in the KP Northern California, Southern California, Northwest, Colorado and Hawaii Regions has shown that aggressive intervention in this group of asthmatic patients can improve clinical outcome and reduce cost.

### Asthma Control

Goals of asthma management are listed in Table 3.

### Management

Asthma management includes both drug therapy and patient education and should also include a written action plan.

### Drug Therapy

For all asthmatic patients, short-acting beta-agonists, such as albuterol, should be available as “rescue medication.” A metered-dose inhaler (MDI) is the most convenient and effective way to deliver albuterol. MDIs are preferred over air-powered nebulizers for ambulatory patients, including those seen in the emergency department as long as they do not potentially need intubation. Use of MDIs is more cost-effective than use of nebulizers, and MDIs use a much lower dose of medication to achieve results equal to those of nebulizers. Short-acting beta-agonists should be used only as needed. Regular dosing—except before exercise in those with exercise-induced bronchospasm—should be avoided. Someone who can teach this skill and who has experience observing patients using MDIs should instruct the patient in proper MDI technique. Experts recommend reviewing MDI technique with patients at least yearly. Use of one or more canisters a month should be recognized as a marker of poor asthma control.

The cornerstone of drug therapy is use of inhaled corticosteroids. These “controller medications” can be given either by MDI or by dry powder inhaler (DPI). Newer MDIs deliver corticosteroid agents to the bronchial tree more effectively and use newer chemical propellants that are less harmful to the environment. (A popular ICS option is Qvar as it is the least expensive ICS and thus the recommended first line ICS in most or all KP regions). All patients other than those with solely exercise-induced or mild, intermittent asthma need controller medication. Patients with moderate or severe persistent asthma should preferably use inhaled corticosteroid agents. Patients with mild, persistent asthma may respond well to cromolyn or nedocromil, but many of this subset of asthmatic patients will need inhaled corticosteroid agents. Patients should use the least

<table>
<thead>
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<th>Table 3. Goals of asthma management</th>
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<tr>
<td>• Prevent chronic, troublesome symptoms</td>
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<tr>
<td>• Maintain pulmonary function as closely as possible to normal or personal best</td>
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<tr>
<td>• Maintain normal activity levels (including exercise and other physical activity)</td>
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<tr>
<td>• Prevent recurrent exacerbations of asthma and minimize need for emergency visits or hospitalization</td>
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<tr>
<td>• Provide optimal pharmacotherapy with minimal or no adverse effects</td>
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<tr>
<td>• Meet patients’ and families’ expectations of and satisfaction with asthma care</td>
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amount that leads to absence of nocturnal cough and that eliminates the need for rescue medication or reduction in physical activity due to asthma. Most asthma experts recommend that patients begin therapy at a moderate or high dosage to gain control of symptoms, then taper to the lowest dosage needed to maintain asthma control.

Patients with moderate or severe persistent asthma should have oral prednisone available for emergencies.

**Other Asthma Medications**

In patients using inhaled corticosteroids with breakthrough symptoms (using albuterol two or more times per week or awakening with asthma symptoms two or more times per month) after four weeks of therapy, a long-acting beta-agonist, salmeterol (two puffs twice daily or two puffs only at bedtime if the only breakthrough symptoms are nocturnal), is added to the inhaled corticosteroid agent. This approach is more effective than increasing the steroid dosage (an alternative approach).3

Leukotriene antagonists and theophylline have limited roles in treating asthma. In general, these medications are reserved for patients in whom asthma cannot be controlled by high dosages of inhaled corticosteroid agents and salmeterol. When these medications are used, their effect should be carefully measured to reduce both cost (when using a Leukotriene antagonist) and potential toxicity (when using theophylline). Specialty consultation should be strongly considered for patients who need these medications.3

**Education**

*Smoking cessation* is especially crucial for asthmatic patients. Smoking increases risk for development of emphysema in asthmatic patients and reduces efficacy of controller medications.3

All patients with persistent asthma should have a *written asthma action plan*.2,3 This plan should list signs and symptoms of worsening asthma and should recommend changes patients can make on their own to address moderate as well as severe exacerbations. Examples of written asthma action plans are available from several sources.4

**Monitoring**

As in many chronic diseases, patients may not fully comply with their treatment plans.3 The clinician should be alert to *signs of noncompliance*, such as an increasing number of requests to refill prescriptions for beta-agonists or underfilling inhaled corticosteroids; poor asthma control; and hospitalization or need for urgent medical care. If the use of computerized medical records is available, it can be of great value in checking for and in managing noncompliance. Clinicians who detect noncompliance should work with the patient in a nonjudgmental way to help improve compliance.

All patients with asthma should actively monitor their condition. Monitoring can be based on symptoms or on peak flow measurement. A peak flow-based plan may be more effective for patients who reliably measure peak flow daily. Patients monitoring peak flow should be instructed when and how to initiate and adjust their medication and when to visit their physicians or the emergency department.

**Follow-up Care**

All patients with asthma need regular monitoring by their medical practitioners.3 Although studies have not determined the optimum frequency of this follow-up care, CMI and other expert panels have concluded that *annual visits* are appropriate for patients with well-controlled asthma and that more frequent visits are needed for patients with uncontrolled asthma. Follow-up care should be given within a week after an emergency department visit or hospitalization. Follow-up care should be given within four weeks after initiation of therapy or with any significant change in therapy and every two-to-four weeks thereafter until control is obtained.2,3

**Specialty Referral**

Specialty referral should be considered for any asthmatic patient who meets the criteria listed in Table 4.3

**Case Example:**

**Treatment Approach**

For the patient described earlier, the correct diagnosis is probably either chronic bronchitis or asthma. At 32 years of age, the patient is somewhat more likely to have asthma. Her medical history suggests episodic disease that resolves within a couple of weeks, but the clinician should seek confirmation of this diagnosis by seeking additional information about the patient’s medical history. A history of nocturnal cough (even between exacerbations), other milder episodes of asthma, and history of allergy, rhinitis, and exposure to substances that precipitate these conditions would lend support to the diagnosis of asthma. Spirometry would be a very important test for confirming the presence of airflow obstruction and properly as-
REVIEW ARTICLE

Asthma

assessing asthma severity in this patient. A history of ongoing and nocturnal symptoms also would be used to establish asthma severity.

Once a diagnosis of asthma is established and severity is estimated, the patient will need additional information explaining:

- the chronic nature of this disease
- the importance of asthma control
- the importance of ongoing monitoring, possibly including peak flow monitoring
- the need to identify and control exacerbating factors such as dust mites, animal fur and dander, and exposure to pollen; and
- the importance of regular follow-up visits with a single primary care physician.

The patient also needs to receive a firm message relaying the critical importance of smoking cessation to improve medication effectiveness, prevent recurrence, and decrease risk for emphysema. Appropriate support should be given in these smoking cessation efforts. If allergies seem to be a major contributor to asthma, referral for allergy testing should be considered.

For persistent asthma, the patient will need several years of treatment (or lifelong treatment) with a controller medication, the choice of which depends on disease severity. If an inhaled form of corticosteroid agent is given, the patient will need to use a spacer device in addition to rescue medication, typically albuterol, for use only as needed. Demonstration of proper MDI technique and reassessment of technique at the first follow-up visit are critical. The patient will benefit from following a written asthma action plan. This plan may be simple for intermittent asthma but more detailed for persistent asthma, especially if moderate or severe.

The patient must understand the importance of avoiding or eliminating exposure to substances that precipitate asthma flare-ups, and compliance with the treatment plan should be emphasized. Initial follow-up should occur after no more than four to six weeks.

Conclusion

Asthma is an important chronic disease resulting in clinically significant morbidity, missed days of work or school, substantial costs for emergency care and hospitalization, and sometimes, death. Current therapy can control asthma and may prevent development of irreversible airway changes in asthmatic patients. Key points for diagnosis and treatment of asthma are summarized in Practice Tips.

Table 4. Criteria for specialty consultation for patients with asthma

| • Life-threatening asthma exacerbation |
| • Goals of asthma therapy not met despite three to six months of treatment |
| • Lack of response to therapy |
| • Atypical signs and symptoms |
| • Unclear diagnosis |
| • Diagnosis or treatment of asthma complicated by comorbid conditions (eg, sinusitis, nasal polyps, aspergillosis, severe rhinitis, vocal cord dysfunction, gastroesophageal reflux, chronic obstructive pulmonary disease) |
| • Additional diagnostic testing indicated (eg, allergy skin testing, rhinoscopy, complete pulmonary function studies, provocative challenge, bronchoscopy) |
| • Additional patient education on complications of therapy, problems with adherence, or allergen avoidance |
| • Possible need for immunotherapy |
| • Severe, persistent asthma requiring high-dosage therapy with inhaled corticosteroid agents for a prolonged period |
| • Continuous oral corticosteroid therapy or high-dosage therapy with inhaled corticosteroid agents |
| • More than two bursts of oral corticosteroid usage in one year |


Practice Tips

- Asthma should be strongly suspected in any patient with recurrent or persisting cough or wheezing.
- Spirometry should be used to diagnose and categorize asthma.
- Patients with persistent asthma require controller medications, usually inhaled corticosteroid agents.
- All asthmatic patients who smoke should be strongly encouraged to quit.
- Asthmatic patients should have patient education, including a written action plan.
- Asthmatic patients should receive regular follow-up care.
- Specialty consultation should be considered for all patients with complicated asthma.
CMI has recently completed an extensive, evidence-based revision of the adult asthma guideline that provides up-to-date, useful information on asthma diagnosis, prognosis, and treatment. The guidelines also summarize current best practice and present detailed information about a wide variety of issues, including acute care, alternative types of therapy, and ineffective types of therapy. The guidelines include sections for special situations such as exercise-induced asthma and pregnancy. The full document is available on the KP Clinical Library Intranet site: http://cl.kp.org/pkc/national/cmi/programs/asthma/index.html.

Acknowledgments
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References

Do
Knowing is not enough, we must apply.
Willing is not enough; we must do.
— Johann Wolfgang von Goethe, 1749–1832,
German poet, dramatist, novelist, and scientist
The Permanente Journal/Winter 2007/Volume 11 No. 1

CASE STUDY

The Barrier of Fear: An Ethnographic Interview About Native American Health Disparities

By Dawson S Brown

Interview

Jane Doe is a 57-year-old member of the Blackfeet Indian Nation, living in Montana. Native Americans are a significant entity in Montana, a state that otherwise lacks much in the way of ethnic diversity. Having grown up in Montana myself, I thought it might be interesting to learn about the health and health practices of the Blackfeet. Though I had never met Ms Doe before our interview, I knew of her background through some of her coworkers. As I understood it before contacting her, she is very involved in the traditional practices of her people, perhaps even acting as the keeper of the “medicine bundle.” She agreed to meet with me at her office on December 21, 2004.

Upon first meeting Ms Doe, her dark features, braided black hair, jewelry, and distinctive vocal intonation gave me the impression that she embraces her Blackfeet ancestry. She spoke very softly, but eloquently and with purpose. I learned that she had been born in a small town in the northern part of Montana along the Rocky Mountain front at the heart of the Blackfeet Indian Reservation. From a working-class family, Ms Doe has four siblings: three sisters and a brother. Ms Doe’s husband is from a large family in the same community. During her childhood, people were punished for speaking their native language, so she spoke English in and out of her home. When she was in middle school, her family moved to northern California as part of a program designed to relocate and assimilate Native Americans into other parts of society. She eventually attended UC Berkeley earning a degree in Social Work. She then returned home, married and raised three daughters and five sons. Two years prior to our interview, Ms Doe moved to a larger city and became employed full-time as a social worker.

Ms Doe and her husband, aged 60 years, own their own home and several of their children live nearby. They have a large extended family, and support structure, within a three-hour drive. Ms Doe and her husband are both fluent in the Blackfeet language, though their children are not; therefore they speak English at home and on the telephone. Ms Doe told me that she has had a television in her home for as long as she can remember, though she personally dislikes it. She would prefer to get her news and information from National Public Radio, and the local newspaper, which is delivered daily.

His Heart and a Root

We did not discuss the specifics of her income, housing costs, etc. However, she did indicate to me that her husband receives federal disability payments, which supplement her salary from the Housing Authority.

In keeping with the traditions of her native people, Ms Doe endorses the use of many natural medicines and herbs. Ms Doe related one story about traditional Blackfeet medicine that I found especially fascinating. A member of the tribe—known for his commitment to living by traditional customs and values—experienced the acute onset of chest pain. His wife was concerned he was having a heart attack and called an ambulance. While they were waiting for it to arrive, the man requested that she bring him a particular root. Unfortunately Ms Doe claims only to know its Blackfeet name and could not tell me what it was. Traditionally, however, the root has been used to treat anxiety. The man ate the root, and by the time he arrived at the hospital, he was symptom free. While in the hospital, he began to have more chest pain, and again he asked his wife for some of the root. In the process of working him up, the hospital staff discovered that he had, in fact, suffered a fairly serious myocardial infarction. He was subsequently transferred to a larger facility. On the way, he experienced chest pains for a third time. Again he ate some of the root. Later, in the hospital, when his blood work returned from the lab, one of the doctors asked him if he had taken or been administered any nitroglycerine. He insisted that he hadn’t; yet according to Ms Doe, significant levels were detected. The group concluded that the root he had been eating might have con-
tained a chemical analogue. One could postulate that its vasodilatory effects might also relieve the uncomfortable symptoms associated with an anxiety attack.

**Traditional Medicine**

Ms Doe and her family have had a lot of experience with the medical profession. When I asked her to compare her experiences of the traditional medicine of her people and those she has had with modern “western” medicine, I laughed at the obvious irony, by definition, her people and their medicine are western. She admitted though that their practices more closely resemble those of Asia. While growing up, Ms Doe says, her family viewed the Indian Health Service as a place for extreme emergencies only. She remembers having hepatitis (possibly hepatitis A) as a child, and still harbors suspicions that the Indian boarding schools were sometimes used as testing laboratories. While raising her own children, she saw the hospital only as an emergency room and a place to get immunizations. Surprised, I pressed her on the issue of immunizations. She anticipated my question and stated that she immunized her children only because the law required it.

While Ms Doe was living in northern California, she was diagnosed with thyroid cancer. It had metastasized to a nearby lymph node by the time she had a thyroidectomy. Over the next five years or so, she had regular scans with radioactive iodine to ensure the cancer wasn’t coming back. Unfortunately, one of these scans came back positive for a recurring “hot nodule.” The doctors in Oakland told her they would administer several bouts of-intensive therapy, but a possible side effect of the radiation would be permanent sterility. Concerned about the possibility of not having any more kids, she consulted doctors in Montana for a second opinion. They agreed that she would require the aggressive therapy, but told her that the possibility of side effects was very small. She found the apparent contradiction disconcerting. She highlights it as an example of the imperfect knowledge any of us have about the human body. She is frustrated by the many assumptions that underlie decisions we make—some with monumental consequences—in western allopathic medicine. She asks, “How many people would have just accepted this [contradiction] without question?”

Before returning to California, Ms Doe visited a traditional Blackfeet healer. She recalls, “I was told—in a sweat—by the great spirits that everything was going to be okay.” When she returned to Oakland to begin treatment, a preliminary scan failed to detect the nodule. She has subsequently been cancer-free for more than 20 years.

**Responsibility for Health**

Because my interview with Ms Doe took place at her office, I did not have the opportunity to assess any possible health hazards in or around her home. I would expect, given my impression of her, that the attention she pays to the health and safety of her family is far superior to that of the average member of her community. She shows great concern that her people “no longer feel responsible for their own health.” The fault for this is shared. While Ms Doe admits that “western diseases,” a lack of innate immunity, mistrust, and the Indian Health Service structure are all contributing causes, the larger responsibility rests with the Blackfeet people themselves. She believes that there is an inseparable synergy between a person’s integrity/morality and their health or wellness. Ms Doe describes her people as suffering from a sort of post-traumatic and intergenerational stress. Until they take responsibility and recognize that there is no distinguishing between medicine and daily living, they cannot be truly healthy.

**My Personal Reflection on this Interview**

Ms Doe’s tale of her battle with thyroid cancer was a fantastic story. Of course, I have a perfectly rational allopathic explanation for her outcome. Each of her “diagnostic” scans was conducted using radioactive iodine. Even though the isotope is sometimes different than that used in treatment protocols, any radioactive iodine is going to preferentially localize to the site of the tumor and confer some degree of therapeutic benefit. It is quite possible that the diagnostic scans themselves were curative in the sense that they eliminated the recurring nodule.

This explanation is the embodiment of rational, evidence-based, “modern medicine.” In making it, however, I am perhaps guilty of the greatest faux pas of “culturally sensitive medicine.” For whatever reason we find security in the knowledge that there is but one answer, and that it can be reached through methodical process and logical thought. We are trained to be skeptical of novel ideas, and we eagerly dismiss anecdotal evidence. Beyond all of this, though, we are supremely confident that “ours” is the correct way. It is doubtful that this egocentric viewpoint is limited to the medical
CASE STUDY

The Barrier of Fear: An Ethnographic Interview About Native American Health Disparities

profession. It is likely instead that it is an inherent quality of humankind, and that it is manifest to varying degrees in different social contexts. One’s inability to transcend our own worldview is obviously a huge barrier to achieving understanding. In medicine, the unfortunate result might be a physician’s inability to administer care, as well as a patient’s reluctance to receiving it.

What about the health of the Blackfeet Indian Nation today? Ms Doe is the first to admit that she is the exception. She attributes her current mental and physical health to her return to the traditional practices and philosophy of the Blackfeet. Interestingly, she feels that this personal renaissance has been triggered by her experiences with modern allopathic medicine. In her words, “cancer saved my life.”

Indian Health Service

Like the Veterans Administration, Medicare, and Medicaid, the Indian Health Service (IHS) is a federally funded system of universal health care. It is also arguably the biggest failure. Before meeting with Ms Doe, I honestly did not know that the IHS existed. And yet, if the health care of all Native Americans is, in essence, “covered,” why are they still vastly underserved, and indeed, unhealthy?

One could argue that the responsibility lies in a failure of the system to integrate and adapt to the culture it’s serving. As I discussed before, our culture of medicine has traditionally been narrow-minded, operating within the comforts of our own assumptions and social context. Superimposed on this, at least historically, there has been a culture of racism, disrespect, and mistrust of Native Americans. Indeed, Ms Doe told me that when she visited Missoula as a child, it was not uncommon to see signs on storefronts that read “no Indians or dogs allowed inside.”

As with other social inequalities, it would be irresponsible not to consider the underlying conditions that might be contributing to the unwanted outcome. It was only recently that the medical profession recognized the importance of practicing culturally sensitive medicine. We are realizing that we must try to understand and integrate the belief structures and traditions of our patients into the healing process. Nevertheless, I personally believe that the converse is both necessary and inevitable. The patient too must be willing to compromise. For our part, we can begin by positioning ourselves to be both aware and amenable to our patients’ needs.

Returning to the issue of the IHS, one might argue the alternate viewpoint that Native Americans themselves are responsible for their own health failures. According to Ms Doe, the Blackfeet people have a strong tradition of self-healing. Appealing to a third party was only done in extreme circumstances. The arrival of the IHS, like many social support systems, created an environment where responsibility for one’s own health was diminished. The basis of western medicine still remains outside of the sphere of understanding for many Blackfeet. There is reluctance on both sides to integrate the traditional with the modern. In essence, a “barrier to trust” has been established. I think it is very difficult for any of us to imagine the sense of upheaval experienced by the Native American people. There is no way to quantify the relative impact of the loss of their land, lifestyle, identity, sovereignty, and pride. We can only presume to understand the psychological impact. On several occasions, Ms Doe addressed this issue, but only indirectly. As I said before, she thinks that the rampant alcoholism, hypertension, addiction, diabetes, obesity, etc. of her people can be traced to what she considers a type of post-traumatic stress. I think this is a compelling explanation. I am equally impressed with her reluctance to spread concentric layers of blame.

Realize Our Limitations

Ms Doe prefers instead to look forward, assigning the responsibility for the health and healing of her own people solely to them. She believes the crisis of the Indian people and the crisis of health care are one and the same. She equates their lack of innate immunity with a continuing deficiency of personal integrity. Wellness, morality, and life are indistinguishable. At the end of the interview, I asked Ms Doe what I might do in the future to improve the health of the underserved. She told me that it is important to realize our limitations. Know that western medicine is very good at treating western diseases, but that Native Americans especially need to take some responsibility for their own healing, especially psychologically. Additionally, it is important that our patients know they have the opportunity to agree, disagree, and to ask questions. The ability to communicate is important to everybody’s health. I would add, as I said before, that it is important to be aware, amenable, and active in the process of providing health care to people with different cultural perspectives. Smiling, Ms Doe told me that our discussion has been a step in the right direction. Already we have begun dismantling the barrier of fear.

❖
"Man on a Bench"
photograph
By Martin Stabler

Mr Stabler is a consultant in the Quality and Informatics Department at Group Health Cooperative. This photograph was taken at Green Lake in Seattle, WA.

More of Mr Stabler's work can be found on page 45.
CASE STUDY

Narrative Case Study: Adoption

By Linda L Hill, MD, MPH

Regularly in the course of my practice, I’ll take a family history and receive the reply “I don’t know, I was adopted.” In the past, I viewed this lack of genetic information as an annoying gap in the patient history. However, I recently became involved in reuniting my father, David, with his birth family, an experience that has changed my perspective.

Birth, Adoption, Life

In 1926, Marion Babbage, a single Irish Catholic maid in London became pregnant at the age of 23 by the son of an unmarried English gentleman who owned the house where she was working. A few months after a single liaison with her employer, she found her abdomen swelling, but had already left his employment. She had met a photographer who proposed marriage, but only if she was unencumbered. On May 31, 1927, she gave birth to a healthy boy, who she named Ralph after his father. He went straight to a nursing home, while she looked for suitable parents. Marion placed an ad in a local ‘personals’ column, asking for someone to adopt this boy. The ad was answered by Dorothy Hill, a married but childless woman who had a hysterectomy in 1921 for tuberculosis of the uterus. Marion picked Ralph up from the nursing home when he was age five weeks and took him to the home of Dorothy and her husband William. She dropped the baby off with her picture and the birth certificate. That was the last time she saw or heard from Ralph for 70 years. She married the photographer one month later.

William and Dorothy renamed the baby David. He wasn’t told he was adopted until age 11. The family spent the war years in England living on a mere $500 a year. David, like many teen boys during the war years, worked in the local factory full time during the war, also going to school, supplementing that meagre income by catching rabbits. David was soon the sole supporter of the family when William died of lung cancer in 1943. In 1947, at the age of 20, he won a scholarship to a university in the US. He married, had three children and subsequently, three grandchildren. He enjoyed a successful and rewarding career and continues to consult at the age of 78.

Searching for Roots

There were several things that bothered my father about his adoption. Why did his mother give him up? Was he so unlovable, that she just left him with Dorothy and William? Why didn’t she list the father’s name on the birth certificate? Was she a prostitute? David had developed hypertension at an early age. What else was in the cards? Were there other genetic diseases, like Huntington’s Chorea or premature heart disease lurking in his gene pool? Lastly, he missed having an extended family.

In early 1996, my daughter, then age 13 years, was assigned a ‘Coming to America’ project in the eighth grade—a school-imposed ‘searching for roots.’ Intrigued by the project (in contrast to my daughter), I initiated a search for my father’s birth family with only the birth certificate and picture.

I began by contacting agencies in the United Kingdom that specialize in birth family reunions, hoping that the birth family had registered and were waiting for David. However, that was not the case. I was referred to a woman in the UK who employed herself by searching the microfiche of the Family Records Centre in London. Over the next 18 months the clues trickled in: the birth mother Marion Babbaghe had married William Trigg in 1927, and had a son three years later. Any trace of the Triggs ended there. In the meantime, I was using the Internet to search for Triggs, sending out e-mails and letters, and even meeting with Triggs, making new friends but not finding my father’s family. Finally, a lucky break occurred. William Trigg’s sister, who had signed his marriage certificate in 1927, had died in the 1950s, and the name and address and phone of the closest relative was listed on the death certificate, which my grandmotherly detective had found. That relative answered the phone and willingly spoke of the family and gave the last known address (from the 1960s)

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of Marion and William Trigg, in Sydney Australia. Using a reverse directory, I got the number for the address and placed a cold call. On December 27, 1997, Marion Trigg, aged 94 years, answered the phone; she was lucid and talkative.

**Mother**

Sadly, Marion was not interested in a family reunion. She did not wish her second son, or his wife and their children, to find out about David. On the other hand, she understood his wishes to know his roots and eventually disclosed the identity of David's father. She seemed to welcome my phone calls of which there were many and even agreed to talk to David. They had one conversation of about 45 minutes. She asked his forgiveness and he declared there was nothing to forgive. They had little more to say to each other and never spoke again.

**Father**

While this was disappointing to my father, several of his questions were answered. His father was upper class and intelligent, and his mother was alert and alive at the age of 94. I spent the next two years searching for a handsome man named Ralph Oliver Raphael, born around 1890, with a limp. Finally, after hundreds of Internet letters, mail queries and Internet phone book searches, the family was found. In March 1999, I went to London to meet with two first cousins of David, and received a family history and pictures of his birth father. David is the spitting image of his father Ralph, who died in 1945. The Raphael family, though previously unaware of their illegitimate cousin, believed the story and welcomed the family.

Over the next few years David met four of his five cousins, and the families have gotten to know each other. He learned that his father never had other children, married twice, was born to a prominent London family, and was a talented and accomplished man. Like my father, Ralph Raphael had an interest in corporate psychology. Although his death certificate listed 'renal failure' as the cause of death, the family had no specific genetic problems and the cousins were bright, healthy, and successful.

**Brother**

The sole remaining dilemma was, following the death of his mother, whether to contact his half brother. In August of 2003, after being unable to find Marion's name any longer at her address in the Sydney online white pages, I put in a call to Eric, David's younger half brother. Eric was delighted and welcoming. His mother had reluctantly told him the story from her nursing home bed before her death two years earlier; however, he doubted the veracity of the tale. In addition, she had destroyed all of the correspondence between us and Eric didn't even know David's name nor have any way of contacting his brother.

On December 1, 2003, we flew to Sydney to meet Eric. The reunion was joyful and rewarding. In the course of the next five days, Eric admitted that his parents were not easy people to live with; they forced him to quit school and begin work at age 16, packed his bags for him on his 21st birthday, and went to the beach instead of attending his wedding. Any thoughts my father had harbored that life with his birth mother would have been better were soon dissolved. The brothers' five days together provided my father with his first sibling experience in a loving and supportive environment. He and his brother have plans to continue meeting for the rest of their lives.

Finding out about his birth family has eased some of David's nagging questions and worries. While he again experienced rejection from his birth mother, knowing her story eased some of his pain and curiosity. The rest of his family has been warm and welcoming, and people with whom he will have lifelong relationships.

**Issues for Adopted Children**

Some of the issues plaguing David throughout his life may be universal to adopted children. Questions about genetics, family stories, immigration experiences, and reasons for adoption placement are frequent. Other issues may be unique, and may depend on the adoption child/parent fit. These include fantasies of what life would have been like with the birth family, imagining reunions, and guilt over a lack of bonding with the adoption family.

The effect of adverse childhood experiences on adult health has been well documented. The characteristics of pre-adoption experiences, the age of adoption, and the nature of the adoptive families all determine whether adopted children experience their childhood as "adverse." Adoptive families may provide a more supportive environment for children. An adoption study of twins separated at birth found that adoptive families increased the socioeconomic status of the children compared to their biological families. This is particularly significant in international adoptions of institutionalized children. One study found increased rates of be-
havioral problems in adopted children compared with biological two-parent families, but fewer behavioral problems than with biological one-parent families. The twin study found that adoptees had greater education, less alcohol abuse, though somewhat higher psychological distress (neuroticism and alienation), than children in single-parent families.

An analysis of adopted child personality and behavior problems found that “ego resilience” was associated with the least behavior problems, while “ego overcontrol” was associated with internalizing problems and “ego undercontrol” with externalizing problems. Adopted boys were found to have more behavioral issues than girls. A large study in the US using National Health Interview survey data found that foster children age 5-11 years, but not age 12-17 years, had more behavioral problems than nonadopted children. Only 12% of adopted children had any behavioral problems. Eighty-eight percent had scores similar to nonadopted children. They concluded that the small number of problem adoptees could likely be explained by genetic predisposition, prenatal drug or alcohol exposure, and pre-adoption adverse experiences. In one meta-analysis of adoption studies, the authors concluded that while adopted children show a trend towards global disturbances, this is related to specific variables, especially neglectful or abusive pre-adoptive experiences, such as may occur with prolonged fostering. They also concluded that there was no evidence for adverse outcomes with adoption of children by gay or lesbian individuals or couples. The trends towards open adoption raises other issues for adoptees, but may generally provide adoptees with a reduced sense of loss, and improved self-esteem. Data on in-vitro fertilization, surrogate mothering with subsequent adoption, and other complex arrangements have not been adequately studied to determine whether they are associated with increased behavioral problems.

Considerations for Physicians

When encountering adult patients with an adoption history, physicians need to look beyond the lack of genetic history. The pre-adoption/adoption experiences may have a profound affect on the lives of the individual, both positively and negatively. Age at adoption, abuse before or after adoption, the number of foster care placements before adoption, characteristics of the adoptive family, and relationship with the birth family are all important determinants of adjustment. On the other hand, most adoptive parents can be reassured that adoptive children have very similar amounts of behavioral issues as nonadopted children. I have expanded my adoption history to provide a more extensive understanding of an individual’s experiences. The Internet has greatly improved the chances of locating birth families with minimal information and expense. My father’s experiences, both positively and negatively, have led me to strongly support open adoption raises other issues for adoptees, but may generally provide adoptees with a reduced sense of loss, and improved self-esteem. Data on in-vitro fertilization, surrogate mothering with subsequent adoption, and other complex arrangements have not been adequately studied to determine whether they are associated with increased behavioral problems.

References

Please Call Me

By Richard S Ellin, MD

It always starts with a voicemail. “Hi, Dr Ellin, this is Mother W.” The message is always the same. “Please call me when you get this message.” She never just calls through the usual channels to make an appointment. She calls me, directly. And, inevitably, I call her back … when I have time. For time is what it takes, because, after all, my time is what she wants, and perhaps time is what she needs. So we talk, and more often than not we arrange an appointment.

That’s when it happens. By the time I’m ready to walk into the exam room to see her, I’m usually already behind schedule. “How long will this visit take?” I ask myself. “How much further behind will I get? Why can’t I schedule a longer appointment for her?” Maybe today, just this once, after I take care of her problem, I’ll explain to her that I’m running behind and I need to move on.

I enter the room. She always has a smile and a hug for me. Despite her 92 years, she stands to embrace me. “How are you, Mother W, it’s so good to see you again.” We exchange pleasantries, and I finally manage to steer the conversation around to her specific medical issues. Perhaps it’s her leg swelling, perhaps dizziness, and so on. All the while, I’m trying to do the essential part of her exam as we talk. It truly does not take much of my time to decide which drug she needs more of, and which less. So in my structured way I tell her what she needs to do. I begin to sense that I’m doing well, this is going oh-so-smoothly, we’re just about to wrap up, and it has only taken the 15 minutes I’ve allotted.

Then it happens. Hooked! She starts to tell me about her daughter, neighbor, children, friends, ex-husband, and on and on and on. And I’m frozen with fascination. And every time, I realize that for her, this is the meat of the visit. I’m her mirror, her son, her confidant, and her friend. So I listen sometimes for another 15-30 minutes, until she appears satisfied. The tears dry; the smile returns; and we part company until the next time.

I walk out of the room, now much further behind schedule, but for the first time all day, with a smile on my face and renewed compassion in my heart.

The Doctor In Me

By Richard S Ellin, MD

“What do you mean, he’s not talking right?”

“Well, I don’t know, I mean, he’s not able to say the words.”

“Mom, when did this start?”

“Oh, I don’t know, maybe 20 minutes ago. It’s happened before, but it usually goes away right away.”

“Get ready to go to the hospital. I’ll be right over.”

I hung up the phone and at once felt …what? Confused? Perhaps. But why? I’ve seen dozens, if not hundreds of strokes. I’m an experienced doctor. I know what to do when someone becomes aphasic. But this wasn’t someone; it was my dad. And just that very fact seemed to rob me of all of my powers to act. All that I’d learned during 20 years of practicing medicine, those by now inbred reactions, seemed inaccessible to my conscious being. I wasn’t in some post-call fog when one’s thoughts and feelings are on time-delay. I was alert, lucid, and yet smothering all at once. What to do? This can’t be a stroke—it’s my father, for God’s sake! Oh yes it is, said my other being. Quick—you have to get him to the hospital in less than three hours; he may be a candidate for thrombolytic therapy. “Oh, thank God, there you are!” The doctor in me was there after all.
Looking for an Opportunity to Serve Your Community? Suggestions on Volunteering at a Homeless Medical Clinic

By Lee Jacobs, MD

Introduction
Would you like to serve your community but just don’t know how to take the first step? One option available to most practitioners is to volunteer at a local homeless shelter medical clinic. Most communities have shelters and, almost without exception, the homeless are in need of ambulatory medical care.

What if you want to volunteer your services but the local shelter does not have a medical clinic? What a great opportunity for you—physician, nurse, or associate provider—to champion the formation of a homeless clinic! Imagine what a wonderful experience that would be for you, for your family, for your community, and most certainly for the homeless person.

The following are suggestions for health care volunteers who want to participate in a clinic or for those who would like to champion the formation of a health care clinic for the homeless.

Preliminary Considerations
Is this for Me?

Time commitment—If you are volunteering at an established clinic, a monthly commitment is appropriate realizing that scheduling conflicts might prevent participation every month. If you are considering starting a homeless clinic, the first question is: can you commit to monthly involvement for two-to-four hours? This will be important initially because, as the champion and mobilizer, your presence in the new clinic will be important.

Your skills—Don’t be concerned about your specialty or your discipline. Physicians of all specialties can provide homeless care. Physician assistants and nurse practitioners are invaluable, and nurses are commonly the backbone of homeless clinics.

Clinic Logistics
Starting a New Clinic

Try the experience—If you have not volunteered at a homeless medical clinic and would like to start a new clinic, it will be important to spend some time participating in an established clinic just to get a feel of the type of care and the overall cultural environment.

Facility—Establishing a clinic onsite at a homeless shelter would be ideal. However, not infrequently, such facilities are not readily available. Churches, health department facilities, and community centers provide good alternatives.

Frequency—Start with monthly clinics and brief hours. Don’t be surprised if it takes a while to build up the patient volume; it takes time to develop trust among homeless men, women, and children.

Partnering—It is always helpful to identify your supporting partnering health care facilities. This includes local hospitals that provide charity care and dental clinics that might accept your patients.

Finances—Money really should not be a barrier. In my experience, an established clinic (50 patients per session per month) can provide sound basic care with a medicine-and-supply budget of about $3000 per year. Even clinics that offer optical and diabetic care do not have annual costs greater than $5000. Our homeless medicine formulary is available on request.

Encouraging other volunteers—There are generally roles for anyone—medical or nonmedical. This might include...
Looking for an Opportunity to Serve Your Community! Suggestions on Volunteering at a Homeless Medical Clinic

Caring for the Homeless
The Science and the Art

Types of illness—Hypertension, dental problems, upper respiratory complaints, rashes and foot ailments are the most common complaints in a typical homeless clinic. In our clinics, the only records kept list patients with hypertension and diabetes on a PDA.

…and more on dental—Broken teeth, dental abscesses and severe gingivitis are some of the most common complaints among the homeless. Unfortunately, all too frequently there is little we can do. Although it might be helpful to offer antibiotic coverage and a mild analgesic, definitive care usually can only be provided by a dentist. I have found that partnering with community dental clinics can be very helpful. (One note of caution: A common myth on the street is that penicillin cleanses the body of toxins, and so it is common for the homeless patient to complain of dental problems as they seek penicillin.)

Feet—Other common problems homeless patients experience are foot problems primarily tinea pedis. Medicated foot powder is a good substitute for the more expensive antifungal creams. At our clinic, we also keep a limited supply of new socks and tennis shoes for those in need, but we provide them “under the table” to prevent a rush on our shoe bank!

Other services—Depending on resources and the number of volunteers, we have found that homeless patients need and really appreciate other services. For example, we offer reading glasses as well as fitting regular eyeglasses onsite using portable foconometers. Additionally, in many populations diabetic screens and initiating oral hypoglycemics can be a valuable service. More information on these services are available upon request.

…and most important—Don’t be in a hurry; take the time to smile and listen! With limited care resources available, your encouragement and kind touch may be the most important thing you can do for the homeless patient. Although you might encounter exceptions, most patients are tremendously grateful for your assistance—even if all you can do is listen!

Closing

I hope you find these suggestions helpful and encouraging if you are looking for a place to serve as a medical volunteer. Many of our readers have had similar experiences volunteering in homeless medical clinics. Please write the Journal if you have other ideas that might encourage your peers to step forward and serve.

❖

A Physician Volunteer’s Experience
Peachtree and Pine Shelter

Five years ago, I started the Peachtree and Pine Homeless Shelter Medical Clinic in Atlanta, Georgia. The clinic, under the auspices of the Cascade United Methodist Church, provides basic care to 10 to 30 patients on the first Thursday of each month.

Health care professionals from diverse backgrounds give two-to-three hours each month to treat everything from bronchitis to hypertension. Although complicated conditions are referred to Grady Hospital, the Clinic has been able to provide care to many who might otherwise not ever receive care. The formulary is very limited and the diagnostic testing is only a capillary check for blood sugar. Often, the best medicine provided is an empathetic ear or a few words of encouragement.

In many ways, the work done at the shelter clinic is an extension of what we do every day in our regular jobs. The clinical component is very routine and straightforward. The fulfillment, however, comes from the personal interaction and from knowing that your service does truly make a difference.

— Earl Thurmond, MD, FACP
Internist and Director of Network Development and Affiliated Care at the Panola Medical Office in Atlanta, Georgia. E-mail: earl.thurmond@kp.org.
A Next Step: Reviewer Feedback on Quality Improvement Publication Guidelines

By Tom Janisse, MD

Technology and Process Improvement

Dazzled by advances in surgical lasers, the anti-aging drug reservatrol, or Google’s warp-speed search of the earth’s information on their handheld computers, physicians and nurses may dismiss the significance of their recent diabetic and cardiac quality improvement (QI) work that arguably improves health care more than many technologic advances. Despite the intensity of designing and enacting QI studies to improve the processes, reliability, and safety of medical care, doctors and nurses have historically not captured or reported their data and findings with enough systematic rigor to turn your head from the brilliance of technology or the randomized, controlled, drug trials reported online and in the media even before print publication. Their work, however, is critical because embedding and integrating new knowledge into clinical practice through quality improvement work is ultimately the outcome that will improve the state of this country’s health care.

Quality Improvement Guidelines

Because the Institute for Healthcare Improvement (IHI) has stimulated such a surge of QI work, and clinicians want to report their results in peer-reviewed journals, and because reviewers for leading medical journals are unfamiliar with the methodology and evaluation of QI studies, a set of guidelines was developed to guide editors and to ensure that QI article content is consistently complete, statistically sound, and high quality.

Frank Davidoff, MD (IHI), and Peter Batalden, PhD (Dartmouth Medical School), collaborated to create these new publication guidelines. Sixteen items are included within their proposed format—Introduction, Methods, Results, and Discussion (“IMRaD”). Three examples of the sixteen items are: “Problem: Nature and severity of specific local dysfunction or failure; Analytic methods: Statistical and time series techniques used, and specific software; Outcomes: What effects the changes/improvements had on clinical and/or organizational and professional outcomes and processes including benefits, harms, unexpected results, problems, failures.” As an additional aid, the authors cite 67 “Examples of elements and criteria to be considered in reporting guideline items.”

These guidelines are part of an effort to improve the quality of health care through setting a standard that benefits: QI researchers performing studies and writing reports; journal editors reviewing manuscripts; and physicians, nurses, and project managers reading and evaluating the published results.

Reviewer Feedback

After attending Drs Davidoff and Batalden’s IHI workshop in December 2005, I sent their article containing the publication guidelines to the 500 national reviewers of our Journal to inform, to educate, and to give them a tool. Representative feedback included:

• “This is the main focus of my current research/administrative activities; until now I have been struggling with how to publish the results of our work.”
• “I agree with the guidelines, have used them and find them most helpful.”
• “These guidelines have value in the setting of review of a quality improvement article, as well the structure of questions asked can guide the writing of the article, so it may be prudent to distribute these guidelines to the authors of papers.”
• “I think that the guidelines are enlightening and likely to be useful. Maybe a check-off form could be used, with the reviewer marking each of these guidelines as: met, possibly met, or not met, with specific comments added, as appropriate. I don’t think the reviewers should be forced into a narrow format, as it could result in missing the forest for the trees.”
• “Adding a structured approach for reviewing quality assurance genre articles is a good idea.”
• “They are reasonable for QI types of articles, but a more stringent standard such as CONSORT should still apply for formal research studies.”

Outcome

The Permanente Journal has a particular interest in these guidelines because the editors, for a decade, have selected and published QI articles to enhance the development, communication, and dissemination of clinical practices that improve performance. The capstone is our annual publication of the Kaiser Permanente practices recognized as the Vohs Awards for Quality—comprehensive, clinical innovations demonstrating significant results in large populations. Publication guidelines can improve the quality of QI articles and the clinical practices they report. ✦

Reference

This photograph is an interior macro of an 1887 Emerson upright (honky-tonk) piano.

More of Dr Fortune's work can be found on the cover and on page 80.
It is perhaps the greatest tragedy of her life—that unknown woman down the hall whose lifeless issue lies before him on the workroom sink-board. She is only beginning to grieve and he is so heartless as to use her baby as a learning tool.

His obstetrics work schedule is a simple one—24 hours on, 24 off, with a single weekend of rest each month. Even when off-duty, the news of any stillbirth is immediately conveyed to the house staff’s sleeping quarters. His specialty training mandates that the experience of at least 20 intubations hang from his belt before departing this teaching hospital to face the world.

Thus, his feelings are mixed as he trots, bleary-eyed, across John R Street at 3:00 am on this moonless, sweaty Detroit morning. Must his skills be honed in such a blasphemous manner? Like defecating in a chapel, he muses. How dare I desecrate this holy being?

But as many things in medical training, the repugnant becomes familiar—the bizarre, common.

Tenderly, he extends the flaccid neck, so perfect, so innocent. What would s/he have become—Student? Statesman? Giver of faith? Giver of life? Now just an Erlenmeyer flask, a Petrie dish, an anatomical specimen.

Slipping his infant laryngoscope along the tongue, then the soft palate, he lifts the pharynx to a grotesque angle and begins a slow withdrawal, eyes sharp for the treasure he seeks. There! That tiny flap of tissue, the key to his procedure. Now, tilting his instrument even more acutely allows the tiny epiglottis to pivot upwards, revealing the tracheal aperture he must cannulate. His left hand holds the laryngoscope motionless while his right curves an endotracheal (ET) tube beneath the fleshy guardian and into the exposed gate to the pulmonary tree. He knows he’s in. His smile embarrasses him.

The opposite end of the ET tube is in his mouth. The litany begins. A measured two-finger compression to the chest—a soft puff into the lungs. Compress, puff … compress … puff. He must do this automatically, perfectly. Each puff gives visual proof of his success, the tiny chest rising, falling … rising, falling.

Next, he removes the tube for his advanced course. He takes the light away. Like the neophyte Marine at Camp Pendleton, he must also perform his task by touch, not by sight. His light and ET tube may not always be at hand, you see.

The head is repositioned, with mouth agape in pitiful innocence. I should be praying, not practicing—Damn it all!

And so he again assaults the defenseless, now with the left index finger. The familiar route is again negotiated: tongue … palate … then he senses the cartilaginous pillars. He curls the tip of his finger, and slips a plain rubber catheter beneath it. It advances easily. Am I there? My puffs tell me so. I am finished. Fifteen seconds, Sergeant, Sir!

Twenty-four times he insinuates himself between the grievers and the grieved for—learning his craft in those stolen moments before the bonding, the minister, the undertaker. To his shame, they now coalesce into a single session.

The knowledge gained in these clandestine rituals serves the obstetric resident staff well. Can there be a greater thrill than converting a limp cyanotic newborn, with parents out of their minds with terror, to a coughing, gasping, reddening baby, squalling with life reclaimed? In the delivery room, he has been hugged unashamedly by new fathers, and the next day, kissed just as unashamedly by new mothers.

Passing by a delivery room where disaster is audible, he has slipped in to provide his vital expertise. He has dropped his needle-driver to quickly scrub out of a C-section and provide a skill the anxious young pediatric resident behind him seems to lack.

Three years later, he is serving his country in Texas and reads about one of his fellow residents in the Dallas paper. This confere has put his special knowledge to use on a three-month old at the State Fair—a soft-drink straw his instrument of resuscitation.

Stillborns are no longer intubated. He grudgingly admits that today’s mores, political correctness and litigious climate makes that horrible, wonderful, archaic avenue of education untenable. But he knows that because of him there are more than a dozen functional adults somewhere in this world who should believe otherwise. 

Nicholas J Rotondo, MD, ACS, ACOG, is a retired obstetrician/gynecologist. He practiced at the Harbor City Medical Center in California. E-mail: Nitro38869@aol.com.
According to the 1999 Institute of Medicine To Err is Human report, poor quality health care extracts a terrible toll, taking up to 100,000 American lives annually, more than breast cancer, motor vehicular accidents and AIDS combined.1 At the same time, another 770,000 people are injured in hospitals. Beyond the personal losses, society pays an enormous price, estimated to be between $37-50 billion a year, in damages and lost productivity.

Perhaps because of the Institute of Medicine (IOM) report, or health care’s ever-growing financial drain, or dismay about poor access, or fears of malpractice, or just some unexplained tipping point, public disquietude surrounding medical errors has never been greater. And for many of the same reasons, never have more professionals—providers, policy analysts, engineers, economists, executives, academicians—poured more time or more energy into crafting solutions.

These strategies can be divided into five broad categories: cooperation, industrial engineering, validation and certification, exhortation and compensation; each has its own history, case studies, merits and pitfalls.

Cooperation
Cooperation is at the heart of professionalism. Physicians and other providers, even when in competitive situations, freely share experience and perspective about optimal patient management. Witness the medical literature. No sooner is an innovative therapeutic procedure or diagnostic strategy devised than the originators, without compensation, rush to publish their findings for all the public, including their rivals, to see.

The cooperative approach in health care is exemplified by Quality Improvement Organizations (QIO). QIOs are the performance management tool of the Center for Medicare and Medicaid Services (CMS) overseeing the care of more than 40 million Medicare patients. There are 41 QIOs, a mixture of for-profit and not-for-profit concerns, with a combined annual budget of over $300 million. As an example of their activities, in collaboration with Qualis, the regional QIO, Dellinger, Hauwmann, Bratzler, et al recently described a 27% reduction in surgical wound infections in 35,000 patients at 44 hospitals in Alaska, Idaho and Washington.2 This performance improvement was due to optimization of antibiotic usage, prevention of hyperglycemia, and maintenance of normothermia during surgery.

Consistent with the mission authorized by Congress in 1992, QIOs originally took an adversarial position in their investigations of physicians and hospitals. Few were pleased with this tact and as a part of the Medicare Prescription Drug Act of 2003, Congress authorized the IOM to review the performance of QIOs. The report suggested that the organizations redirect their energies away from investigation of alleged misconduct and towards a more collegial approach.3 Elements of such cooperation included establishing infrastructure for voluntary hospital and physician quality initiatives, integration of activities with like-minded organizations such as the National Quality Forum, providing technical resources such as computer support, and eliminating jurisdictional barriers to sharing data between providers.

Industrial Engineering
Quality control and performance improvement tools are a vital part of most industries, especially manufacturing. And business school curricula, the executive press and business consultants all reflect this appropriate emphasis, be it total quality management, continuous quality improvement, lean thinking, balanced scorecard, or Six Sigma. Though created by Motorola, the best known instrument in medicine, Six Sigma, has become equated with General Electric, perhaps because of GE’s commercial success (as the world’s second most valuable company) and its familiar face in health care. Six Sigma is designed to minimize industrial defects, limiting errors to less than six standard deviations (hence the name), or less than 3.4 times in a million opportunities. Separated into define, measure, ana-
lyze, improve and control functions, this tool is rigorously quantitative and project-oriented. So far, it has been used mostly in clinical engineering or workflow improvements such as streamlining laboratory testing, increasing operating room efficiency, and optimizing pharmacy operations.

Validation and Certification
In addition to the well-established Joint Commission on Accreditation of Healthcare Organizations and the National Committee for Quality Assurance, there are several newcomers in the validation and certification business. These groups, which include the Leapfrog Group and the National Quality Forum, seek to gather, distribute, and promote compliance with the best practices of the day.

The Leapfrog Group was established in 2000 by business leaders in response to the To Err Is Human report. From early members such as Boeing, IBM, General Electric, and General Motors, the Group has now expanded to 170 members, responsible for spending $67 billion annually on the health care needs of 36 million employees, dependents and retirees.

In order to promote smart purchasing decisions by their members and other companies, Leapfrog’s strategy is to survey hospitals in four different areas and to distribute the results in the public domain. The four quality practices are: 1) computerized physician order entry systems, 2) intensivist staffing of ICUs, 3) referral of surgical patients (eg, esophagectomy, pancreatic resection, abdominal aortic aneurysm repair, percutaneous coronary interventions) to high-volume hospitals, 4) adoption of the 27 National Quality Forum’s Safe Practices.

Results of these voluntary surveys in 966 hospitals can be found through an individual hospital search online at the Leapfrog Group Web site: www.leapfrog.com/cp.

The National Quality Forum (NQF) was founded in 1999 by Kenneth Kizer, MD, the head of Veterans Affairs health care in the Clinton administration, with the goal of being the standard-setting body for quality in American medicine. With 350 members, the NQF, through a formal voting mechanism, certifies various performance improvement strategies such as those used by Leapfrog. These guidelines in turn originate from groups such as the Ambulatory Care Alliance and the Physician Consortium for Performance Improvement (an offshoot of the American Medical Association).

Examples of NQF Safe Practices include:
- Verbal order readback
- No patient care summaries from memory
- Flu vaccination for health care workers
- Aspiration prevention
- Wrong-site/wrong-patient prevention
- Prevention of mislabeled radiographs
- Contrast-induced renal failure protocol.

Exhortation
In the vanguard of the quality movement is the Institute for Healthcare Improvement (IHI) headquartered in Cambridge, Massachusetts and headed by Donald Berwick, MD, a pediatrician. Supported by the Robert Wood Johnson Foundation, the Association of American Medical Colleges, Kaiser Permanente, the Mayo Clinic and others, IHI, since 1991, has used the public square to raise awareness of medical mistakes and has served as a catalyst for change.

In December 2004, that strategy reached a new level when IHI announced The 100,000 Lives Campaign, a highly publicized effort to enlist all 5795 American hospitals in an effort to avoid such mortality within an 18-month period. The voluntary, unfunded, self-reporting campaign used six quality improvement measures:
- Employ Rapid Response Teams—Similar to code teams, these units are organized to respond emergently, but earlier, with the goal of pre-empting clinical decline
- Standardize Care for Acute Myocardial Infarction—Optimize reperfusion strategies and pharmacologic therapies such as aspirin, beta-blockers and angiotensin-converting enzyme inhibitors
- Medication Reconciliation—Regimented, documented review to avoid drug errors during patient transfers within hospitals
- Central Line Infections—Reduction of infections with improved skin and hand hygiene, optimal catheter placement, and other measures
- Surgical Wound Infections—Prevention by monitoring body temperature, perioperative glucose; appropriate skin preparation and antibiotic selection
- Ventilator-Associated Pneumonia—Use of the “ventilator bundle,” which includes elevation of the head of the bed, deep vein thrombosis prophylaxis and other steps.

These evidence-based interventions were based on guidelines developed by the Centers for Disease Control and Prevention, American Heart Association, American Thoracic Society and others.

On June 14, 2006, IHI announced
that the program had exceeded expectations and saved 122,300 lives.

**Compensation**

One of the latest strategies to improve health care quality is pay-for-performance (P4P). No more accolades, or public attention, or professional respect, but hard cash and lots of it.

P4P programs, using bonuses or at-risk pools, seek to improve quality in preventive, acute or chronic care, promote patient satisfaction, and encourage the deployment of information technology.

The director of the CMS, Mark McClellan, MD, has estimated that, by 2012, 20-30% of federal provider payments will be on the basis of P4P.

Such programs include Bridges to Excellence, Integrated Healthcare Association, Medicare Physician Group Practice Demonstration and the Premier Group. Of these, the Premier trial is the largest with 260 participating hospitals and, to date, has the greatest financial stakes (eg, a 2% bonus for the top 10% performers; 1% for the next 10%).

Premier, a hospital purchasing alliance headquartered in San Diego, began the CMS-funded project in 2003 focusing on five clinical conditions:

- **Acute Myocardial Infarction** (AMI)—Aspirin and beta-blockers on arrival
- **Coronary Artery Bypass Graft** (CABG)—Use of internal mammary artery
- **Community-Acquired Pneumonia** (CAP)—Blood cultures prior to antibiotics
- **Heart Failure** (HF)—Angiotensin-converting enzyme inhibitor for left ventricular dysfunction
- **Hip and Knee Replacement** (HIP)—Postoperative hematoma, hemorrhage.

In April 2006, Premier released their 2004 compliance results (see Table 1). So, as a result of all this innovation and hard work, there is lots of good news on the quality front. All the tools—cooperation, industrial engineering, validation and certification, exhortation, compensation—have their proponents, advantages, success stories … and skeptics.

Regarding QIOs, Snyder and Anderson, in the only published controlled study, found no benefit from their activities in stroke, pneumonia and cardiac care in Maryland, Nevada, New York, Utah, and Washington.

Six Sigma, for all its value in logistics, has not found a major place in clinical processes such as surgery or interventional therapies. And many in health care have found its project orientation cumbersome to implement and fleeting in benefit.

More than five years after founding of the Leapfrog Group, a recent study found less than 4% of hospitals complying with one of its core tenets, the 24-hour intensivist staffing of ICUs.

Before the cheers for IHI’s *The 100,000 Lives Campaign* had quieted, the *Wall Street Journal* was raising questions about sample bias, attribution and inflated results.

Bradley and colleagues found that compliance with P4P-styled treatment strategies for acute myocardial infarction (ie, aspirin, angiotensin-converting enzyme inhibitors, beta-blockers) only accounted for a 6% variation in 30-day mortality. Finally, no less an authority than Michael E Porter, Harvard Business School professor and the maven of American management research, regards P4P programs as too process-oriented, micro-managed, simplistic and ponderous.

What is the verdict? Which instrument, if any, will be the solution to health care’s quality woes? For that answer, just like any other scientific question, these interventions will need to be subjected to the same scrutiny as a new drug, or diagnostic test, or surgical procedure. And, despite all the impatience around the crisis of medical mistakes, that answer is not immediately forthcoming.

This deliberative approach, as necessary and appropriate as it is, exposes perhaps the greatest threats to patient safety … inertia and the status quo.

**Table 1. Premier Quality Incentive Demonstration Project: Quality performance, 2003-2005**

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<tr>
<th></th>
<th>AMI</th>
<th>CABG</th>
<th>CAP</th>
<th>HF</th>
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</tr>
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AMI – acute myocardial infarction; CABG – coronary artery bypass graft; CAP – community-acquired pneumonia; HF – heart failure; HIP – hip and knee replacement

**References**

3. Institute of Medicine, Committee on Redesigning Health Insurance Performance Measures, Payment, and Performance Improvement
Improving Health Care Quality: Current Concepts

We are drowning in information, while starving for wisdom. The world henceforth will be run by synthesizers, people able to put together the right information at the right time, think critically about it, and make important choices wisely.

— Edward O Wilson, b 1929, American biologist, researcher, theorist, and naturalist
I just became a grandparent. My granddaughter will be six or seven when I retire. By the time she reaches an age old enough to wonder what her grandfather did for a living, the answer will be ‘used to be a Doctor.’ True enough I’ll still have the honorium, but I may well no longer be practicing or serving a useful function in medicine. Only since her birth has this conundrum appeared in my consciousness.

Since 1970 I’ve carried the MD degree and functioned as ‘Doctor.’ In 2010, the ‘used to be’ will kick in. I find I’m rather conflicted over ‘used to being.’ I suspect that’s a significant part of the reason my fingers are tapping out this piece. I could say to my granddaughter, ‘I’m a writer.’ I have a passable talent with a camera also. I could tell her ‘I’m a photographer.’ I don’t have to retire from either of those until forced by health. If I can keep writing this type of piece, I may be able to claim, ‘I’m a philosopher.’

I suppose my reason for frustration is some inner need to be useful. The concept of ‘used to be’ implies no longer useful. I don’t see retirement as going from but as going to other opportunities. Certainly many of my colleagues continue to work beyond retirement. Some say they need the money. Some say they enjoy practice so much that they don’t want to leave it. The coming shortage of cardiologists may mean opportunity for me to not ‘used to be’ beyond age 65. On the other hand there is an inevitable point where there will be no choice involved.

On considering this inevitable time, I find a personal need to have something ongoing to ‘be.’ Many years ago, I served on a committee that investigated the problems caused by physicians retiring without anything to retire to. I learned from that and have worked to establish alternative activities for myself. I would like to evolve alternate identity separate from ‘Doctor.’

When I consider what I could carry on with maximum flexibility, writing seems to be natural. If I write in the appropriate genre, my photographic interests can also be utilized. If I maintain my ability to think and imagine; a virtual infinite variety of things to write about exists. I could write serious pieces. I would love to write humor. I study each movie and stage show that I see to learn from them. I could write about and photograph places and things where my wife and I travel. If I learn about videography, I can combine writing with video—additional worlds would be open to explore.

I’ve always enjoyed teaching. I had a teaching appointment at a local medical school. I suppose that could be reactivated if I’m not considered too ‘used to be.’ I might even consider teaching a course in the life of the physician. Certainly as I look the future in the face, the question of what might have been done better in the past always intrudes upon my consciousness and conscience.

Teaching medical students and housestaff about life lessons separate from direct medical lessons might be a useful effort. It might even benefit those who sit back, listen and reflect. I could present them ideas relative to their own physical and mental health. I could point out ways of reducing the stress in their lives while trying not to cause undue stress for others. I could point out the evanescence of what we do. They could learn to take themselves and their work seriously but not to delude themselves with self-importance. They might possibly pay attention if they realize that I have gone down the pathway that they will tread and have learned some of the lessons firsthand.

I believe that, for me, it is necessary to have a plan to cope with “Used to be.” I need to choose some course(s) of action and prepare. “Used to be” is always with us, until our existence becomes “used to be.” We will all inevitably become part of the past. I just don’t believe that while alive we should choose to live in the past. I will continue to find things to be while I am. I’ll let others judge my “used to be” when that time comes.
A serial x-ray of a two-year-old child with a badly displaced femur fracture, showing gradual realignment of the bone over the course of six months. No reduction was performed. Children rarely need surgery for these types of fractures because dramatic plastic remodeling is possible in the very young.

More of Dr Fortune's work can be found on the cover and page 73.
Abstracts of Articles Authored or Coauthored by Permanente Physicians, Nurses, and Investigators

Selected by Daphne Plaut, MLS, Librarian, Center for Health Research

Coffee, cirrhosis, and transaminase enzymes.

BACKGROUND: A minority of persons at risk develop liver cirrhosis, but knowledge of risk modulators is sparse. Several reports suggest that coffee drinking is associated with lower cirrhosis risk.

METHODS: We studied 125,580 multiethnic members of a comprehensive prepaid health care plan without known liver disease who supplied baseline data at voluntary health examinations from 1978 to 1985. Subsequently, through 2001, 330 of them were diagnosed with liver cirrhosis. Review of medical records confirmed the diagnosis of cirrhosis and ascertained probable etiology. The association of coffee drinking with cirrhosis was estimated by Cox proportional hazards models with seven covariates. We also did a cross-sectional analysis of baseline aspartate aminotransferase and alanine aminotransferase levels, studied by logistic regression.

RESULTS: In the cohort study, relative risks of alcoholic cirrhosis (199 subjects) for coffee drinking (vs none) were less than 1 cup per day, 0.7 (95% confidence interval [CI], 0.4-1.1); 1 to 3 cups, 0.6 (95% CI, 0.4-0.8; p < .001); and 4 or more cups, 0.2 (95% CI, 0.1-0.4; p < .001). For 131 subjects with nonalcoholic cirrhosis, relative risks were less than 1 cup, 1.2 (95% CI, 0.6-2.2); 1 to 3 cups, 1.3 (95% CI, 0.8-2.1); and 4 or more cups, 0.7 (95% CI, 0.4-1.3). These relative risks for coffee drinking were consistent in subsets. Tea drinking was unrelated to alcoholic or nonalcoholic cirrhosis. In the cross-sectional analyses, coffee drinking was related to lower prevalence of high aspartate aminotransferase and alanine aminotransferase levels; for example, the odds ratio of four or more cups per day (vs none) for a high aspartate aminotransferase level was 0.5 (95% CI, 0.4-0.6; p < .001) and for a high alanine aminotransferase level, 0.6 (95% CI, 0.6-0.7; p < .001), with stronger inverse relations in those who drink large quantities of alcohol.

CONCLUSION: These data support the hypothesis that there is an ingredient in coffee that protects against cirrhosis, especially alcoholic cirrhosis. Copyright 2006. American Medical Association. All rights reserved.

Unintended consequences of caps on Medicare drug benefits.

BACKGROUND: Little information exists about the consequences of limits on prescription-drug benefits for Medicare beneficiaries.

METHODS: We compared the clinical and economic outcomes in 2003 among 157,275 Medicare+Choice beneficiaries whose annual drug benefits were capped at $1000 and 41,904 beneficiaries whose drug benefits were unlimited because of employer supplements.

RESULTS: After adjusting for individual characteristics, we found that subjects whose benefits were capped had pharmacy costs for drugs applicable to the cap that were lower by 31% than subjects whose benefits were not capped (95% confidence interval, 24 to 33%) but had total medical costs that were only 1% lower (95% confidence interval, -4 to 6%). Subjects whose benefits were capped had higher relative rates of visits to the emergency department (relative rate, 1.09 [95% confidence interval, 1.04 to 1.14]), nonelective hospitalizations (relative rate, 1.13 [1.05 to 1.21]), and death (relative rate, 1.22 [1.07 to 1.38]; difference, 0.68 per 100 person-years [0.30 to 1.07]). Among subjects who used drugs for hypertension, hyperlipidemia, or diabetes in 2002, those whose benefits were capped were more likely to be nonadherent to long-term drug therapy in 2003; the respective odds ratios were 1.30 (95% confidence interval, 1.23 to 1.38), 1.27 (1.19 to 1.34), and 1.33 (1.18 to 1.48) for subjects using drugs for hypertension, hyperlipidemia, and diabetes. In each subgroup, the physiological outcomes were worse for subjects whose drug benefits were capped than for those whose benefits were not capped; the odds ratios were 1.05 (95% confidence interval, 1.00 to 1.09), 1.13 (1.03 to 1.25), and 1.23 (1.03 to 1.46), respectively, for subjects with a systolic blood pressure of 140 mm Hg or more, a serum low-density-lipoprotein cholesterol level of 130 mg per deciliter or more, and a glycosylated hemoglobin level of 8% or more.

CONCLUSION: A cap on drug benefits was associated with lower drug consumption and unfavorable clinical outcomes. In patients with chronic disease, the cap was associated with poorer adherence to drug therapy and poorer control of blood pressure, lipid levels, and glucose levels. The savings in
Monitoring of drugs with a narrow therapeutic range in ambulatory care.


OBJECTIVES To describe the proportion of patients receiving drugs with a narrow therapeutic range who lacked serum drug concentration monitoring during a one-year period of therapy and to identify patient characteristics associated with lack of monitoring.

STUDY DESIGN Retrospective cohort.

METHODS Ambulatory patients (n = 17,748) at ten health maintenance organizations who were receiving ongoing continuous drug therapy with digoxin, carbamazepine, divalproex sodium, lithium carbonate, lithium citrate, phenobarbital sodium, phenytoin, phenytoin sodium, primidone, quinidine gluconate, quinidine sulfate, procainamide hydrochloride, theophylline, theophylline sodium glycinate, tacrolimus, or cyclosporine for at least 12 months between January 1, 1999, and June 30, 2001, were identified. Serum drug concentration monitoring was assessed from administrative data and from medical record data.

RESULTS Fifty percent or more of patients receiving digoxin, theophylline, procainamide, quinidine, or primidone were not monitored, and 25% to 50% of patients receiving divalproex, carbamazepine, phenobarbital, phenytoin, or tacrolimus were not monitored. Younger age was associated with lack of monitoring for patients prescribed carbamazepine (adjusted odds ratio, 0.59; 95% confidence interval, 0.44-0.80) and divalproex (adjusted odds ratio, 0.50; 95% confidence interval, 0.38-0.66). Patients with fewer outpatient visits were also less likely to be monitored (p < .001).

CONCLUSIONS A substantial proportion of ambulatory patients receiving drugs with narrow intervals between doses resulting in beneficial and adverse effects did not have serum drug concentration monitoring during one year of use. Clinical implications of this finding need to be evaluated.

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Acute appendicitis: is there a difference between children and adults?


Historically, the lack of classic symptoms and delay in presentation make diagnosing acute appendicitis more difficult in children, resulting in a higher perforation rate. Despite this, the morbidity of acute appendicitis is usually lower in children. We evaluated the current differences in clinical presentation, diagnostic clues, and the outcomes of acute appendicitis between the two age groups. A retrospective review of 210 consecutive cases of pediatric appendectomy and 744 adult cases for suspected acute appendicitis from January 1995 to December 2000. Pediatric patients were defined as being 13 years and younger. Pediatric patients were similar to adult patients with respect to duration of pain before presentation (2.4 ± 4.3 days vs 2.5 ± 7.3 days), number of patients previously evaluated (22.0 vs 17.7%), number of imaging tests (computed tomography or ultrasound; 32.9 vs 40.2%), and number of patients observed (16.7 vs 17.2%). However, pediatric patients required less time for emergency room evaluation (4.0 ± 2.7 hours vs 5.7 ± 4.9 hours, p = 0.0001). In children and adults, a history of classic, migrating pain had the highest positive predictive value (94.2 vs 89.6%), followed by a white blood cell count ≥12 x 109/L (91.5 vs 84.3%). The overall negative appendectomy rate was 10.0% for children and 19.0% for adults (p = 0.003); the perforation rate was 19.0% and 13.8%, respectively (p > 0.05). The perforation rate in children was not associated with a delay in presentation (perforated cases, 2.9 ± 3.3 days compared with nonperforated cases, 2.3 ± 4.6 days). Mortality and morbidity, including wound infection rate and intra-abdominal abscess rate, were similar. Contrary to traditional teaching, diagnosing acute appendicitis in children is similar to that in adults. A history of migratory pain together with physical findings and leukocytosis remain accurate diagnostic clues for children and adults. Perforation rate and morbidity in children is similar to those in adults. The outcomes of acute appendicitis in children are not associated with a delay in presentation or delay in diagnosis.
Comparison of preoperative, intraoperative, and postoperative grading and staging for endometrial cancer
Phan C, Tatman J.

Purpose: The objective of this study is to determine the accuracy of preoperative grading and intraoperative assessment of myometrial invasion for staging of endometrial adenocarcinoma at the KP Santa Clara Medical Center.

Method: A retrospective chart review was performed on all patients who underwent hysterectomy with or without additional staging procedures for endometrial cancer between January 1, 1999, and December 30, 2004. To evaluate accuracy of grading, preoperative biopsy results obtained at the KP Santa Clara Medical Center were compared to final histologic grading. To evaluate accuracy of gross evaluation of myometrial invasion, intraoperative assessments by the pathologist were compared to the final histologic determination of myometrial invasion.

Results: A total of 332 hysterectomies were performed in patients with endometrial cancer over the six-year study period. Of these, 155 patients had endometrial biopsies originally read by pathologists at KP Santa Clara Medical Center. Eighty-two percent (128/155) of the biopsies were accurate with no change between original and final grade. Fifteen percent of five percent (24/155) were upgraded while 4.5% (7/155) were downgraded.

Management of ASC-H Pap smears using age and HPV status as a guide
Keny S, Tatman J.

Objective: The purpose of this study was to analyze the cytologic diagnosis of ASC-H (atypical squamous cells, cannot exclude high grade squamous intraepithelial lesions (HGSIL)) with human papillomavirus (HPV) testing and age as risk factors, and correlate these factors with follow-up cytology and/or cervical biopsy results.

Methods: A retrospective cohort study was performed for the period of July 1, 2003—June 30, 2004. All ASC-H cases in KP Northern California were evaluated. Age, HPV test results, and follow-up cytology and/or cervical biopsy results were reviewed and analyzed. Exclusion criteria included a history of HGSIL within the past five years, no follow-up since ASC-H Pap, history of cervical can-
cer, history of total hysterectomy/no cervix present, Pap reread as a different diagnosis, and Pap done at the time of colposcopy for atypical cells of undetermined significance (ASC-US)/low grade squamous intraepithelial lesion (LSIL). For the HPV analysis, those with no HPV done within six months of the ASC-H pap were also excluded.

RESULTS A total of 296,740 Pap tests were performed during the specified time period, of which 374 (0.1%) were ASC-H. HPV testing was performed on 72.7% of ASC-H. Age data was available for 100%. Follow-up cytology and/or cervical biopsy results were available for 92.8%. Among those included in the analysis, oncogenic HPV DNA was detected in 68.9%. Lesions of cervical intraepithelial neoplasia 2 or worse (≥CIN2) were present in 59.5% of ASC-H HPV positive specimens, compared with only 14.5% of ASC-H HPV negative specimens (p < 0.01). Lesions of ≥CIN2 were present in 50.3% of ASC-H age <40 patients, compared with 42.4% of ASC-H age ≥40 patients (p = 0.18).

CONCLUSION Patients with a diagnosis of ASC-H on cervical cytology who do not harbor oncogenic HPV DNA have a significantly lower risk of having an underlying lesion of ≥CIN2 than those who are HPV positive. This confirms that oncogenic HPV DNA testing is a viable option for guiding management of ASC-H as stated in the current version (11/05) of the KP Northern California Clinical Practice Guidelines for Cervical Cancer Screening. In contrast, age stratification showed no statistically significant difference in incidence of lesions of ≥CIN2 and would be less helpful.

D-dimer as a screening test for thrombophilias.
Sharma S, Newman L.

OBJECTIVE Maternal thrombophilia has been explored as a cause of severe pre-eclampsia, placental abruption, fetal growth restriction, placental thrombosis, and stillbirth. The D-dimer test has been used to detect coagulation abnormalities. The purpose of this study is to determine if the D-dimer test can be successfully used as a screening test for thrombophilias. In specific, we will determine the sensitivity, specificity, positive predictive value, and negative predictive value of the D-dimer to predict a positive thrombophilic result.

METHODS Women who experienced the above-mentioned obstetric complications underwent a thrombophilia work-up (including anticardiolipin antibody, antinuclear antibody, lupus anticoagulant, protein C, protein S, homocysteine, factor V Leiden mutation, prothrombin, and antithrombin III) along with a D-dimer test at their postpartum visit. The thrombophilia workup was positive if one or more tests were abnormal. The D-dimer test was considered positive if the level was in the abnormal range (> 500 ng/mL). From the data collected, the sensitivity, specificity, positive predictive value, and negative predictive values were calculated.

RESULTS Thirty patients completed the thrombophilia workup and D-dimer test. The majority of obstetric complications included stillbirth, severe pre-eclampsia, and abruption. Fourteen (47%) patients had a positive thrombophilia workup. Three (10%) patients had more than one abnormal test. The most common abnormalities were anticardiolipin antibody and protein S deficiency. Eight (27%) patients had abnormal D-dimer tests—four with positive thrombophilia workups and four with negative thrombophilia work-ups. The sensitivity of the D-dimer test was 29% and the specificity was 73%. The positive and negative predictive values were 50% and 55%, respectively.

CONCLUSION The D-dimer test has inadequate sensitivity for use as a screening test for thrombophilias. Also, the low specificity and low negative predictive value indicate that a negative D-dimer test cannot sufficiently rule out the possibility of a thrombophilia.

Vulvar Paget’s disease: Is screening for occult malignancy justified?
Sub-Burgmann B, Kendrick M.

OBJECTIVE Vulvar Paget’s disease is a rare intraepithelial neoplasm with a low propensity to invade. An association of the disease with other malignancies such as breast, colon, bladder, uterus, cervix, and ovary has been reported, leading to the recommendation that practitioners screen these women with mammography, colonoscopy, cystoscopy, endometrial biopsy, and colposcopy. The purpose of this study was to determine whether patients with vulvar Paget’s disease, who have no clinical evidence of other malignancy, are truly at increased risk of harboring an occult internal malignancy at the time of their diagnosis compared to age-matched controls.

METHODS The study was designed as a retrospective case control. Electronic surgical pathology databases were searched to identify both cases and controls for the time period between 1994-2004. Cases were defined as women whose biopsies revealed vulvar Paget’s disease. Controls were age-matched women whose vulvar biopsies revealed benign disease during the same period. Hyperplasia, atypia, intraepithelial neoplasia, and other vulvar malignancies were excluded from the control group. A comprehensive electronic patient database was then searched for each patient to determine whether concurrent (within two months) or subsequent (five years proceeding) diagnoses of malignancy were made. The incidence of concurrent and subsequent malignancy was then compared between case and controls. Fisher’s exact test was used to compare the rate of malignancy between the two groups.

RESULTS A total of 55 women with vulvar Paget’s disease and 167 women with benign vulvar biopsies were collected. Mean follow-up was five years for both cases and controls. Concurrent malignancy was diagnosed in 3 of 55 women (5.5%) from the Paget’s group (one each of cervical, uterine and rectal) compared to no cases from the control group (p = 0.015). Patients with concurrent malignancy in the Paget’s group had clinical evidence of their disease. Subsequent malignancy was diagnosed in 4 of 55 women (7.3%) from the Paget’s group compared to 10 of 167 (6.0%) from the control group (p = 0.76).

CONCLUSIONS Vulvar Paget’s disease is associated with clinically apparent pelvic malignancies. Patients with vulvar Paget’s disease, who have no clinical evidence of other malignancy, are not at increased risk of harboring an occult malignancy at the time of their diagnosis compared to age-matched controls. In the absence of signs or symptoms of other malignancy, nonroutine screening does not appear to be warranted.
BOOK REVIEW

Clinical Guide to Ultrasonography
by Charlotte Henningsen

Clinical Guide to Ultrasonography, a complete book dedicated to a wide audience of sonologists, surgeons, gynecologists, internists, residents, and practicing specialists, is well organized into five major parts: abdomen, gynecology, obstetrics, superficial structures, and miscellaneous (hip dysplasia, neonatal neurosonography, carotid artery disease, and leg pain).

Each chapter begins with an illustrated clinical scenario, showing specific circumstances that require ultrasound examination. Clear objectives are stated, followed by a glossary of terms. Subchapters are detailed and wonderfully illustrated; whenever necessary, tables are included that outline pathology, symptoms, and sonographic findings. A clear summary is presented and the clinical scenario is diagnosed and explained in detail. Every chapter ends with five cases to be solved; these cases often associate sonographic findings with tomographic images and ten clever study questions. The cases are explained and solved in the “Answers to Case Studies” chapter at the end of the book, followed by another special chapter: “Answers to Study Questions” for the ten-question groups. Each chapter is well referenced with recent citations.

The first section on the abdomen wonderfully describes 12 clinical entities in 12 chapters, including chapters on organs involved in right upper quadrant pain (gallbladder, biliary tract disease, or liver); liver mass; diffuse liver disease; epigastric pain: pancreatitis or pancreatic neoplasia, hematuria (urolithiasis, benign or malignant neoplasms); renal failure; cystic versus solid renal mass; diffuse liver disease; renal failure; cystic versus solid renal mass; splenic pathology generating left upper quadrant pain; and pediatric masses in the liver, kidney, or adrenal glands; etc. Chapters on pulsatile abdominal masses, gastrointestinal imaging, and the retroperitoneum are well done and informative. The abdomen section is well illustrated with clinical descriptions and clear and useful tables.

The second part nicely describes gynecologic pathology, in five chapters: causes of abnormal uterine bleeding, which includes a brilliant description of sonohysterography and lost intrauterine device; the role of ultrasonography in diagnosis; extent and follow-up of pelvic inflammatory disease; infertility; and ovarian mass.

The third part nicely describes obstetrical pathology in nine chapters: uncertain last menstrual period; uterine size-greater-than dates; size-less-than dates; bleeding with pregnancy; multifetal gestation; causes of elevated alpha feto-protein: neural tube defects, abdominal wall defects, amniotic band syndrome, and ectopia cordis—analyzed during prenatal screening projects; images required by genetic tests suggesting chromosomal anomalies; chromosomal anomalies especially trisomy 21, trisomy 18 and trisomy 13, fetal anomaly; and abnormal fetal echocardiography.

Superficial structures are clearly described in four chapters of the fourth section: breast mass, scrotal mass, neck mass, and the benign and malignant prostate. Finally, four different chapters cover miscellaneous diseases: hip dysplasia, neonatal neurosonography, carotid artery disease, and leg pain.

There are minor negative aspects, especially in the glossary parts, which describe pancreatic acini or islets of Langerhans as small cells, when in fact, they are glands. There also is a description of fatty liver disease as a replacement of normal hepatocytes by fat cells. In fact, fat accumulates inside the hepatocytes. The 24-page index is good and very detailed.

The Clinical Guide to Ultrasonography is filled with clear and concise tables, illustrations, drawings, and sonographic and tomographic images. Because of these 1100 high-quality illustrations, and 36 beautiful color Doppler and power images, clearly explained, and the intelligently organized and detailed text, reading this book is an easy and pleasant task. Readers will find it of frequent value in practice.

Because of these 1100 high-quality illustrations, and 36 beautiful color Doppler and power images, clearly explained, and the intelligently organized and detailed text, reading this book is an easy and pleasant task.

Roxana Covali, MD, PhD, is a radiologist at the Elena Doamna Obstetrics and Gynecology University Hospital in Iasi, Romania. She also assists in teaching histology at the Gr T Popa University of Medicine and Pharmacy in Iasi, Romania. E-mail: rcovali@yahoo.com.
BOOK REVIEW

Overdosed America, The Broken Promise of American Medicine
by John Abramson, MD

Frustrated by increasing numbers of patients arriving with drug advertisements and a “fixed idea … of the outcome they wanted …” internist John Abramson, MD, concluded he could “… help people to achieve better health …” if he uncovered “… what the scientific evidence really shows and explain this to the public.”1:xii

He discovered “… a scandal in medical science.” “Rigging medical studies, misrepresenting research results published in even the most influential medical journals, and withholding the findings of whole studies that don’t come out in a sponsor’s favor have all become the accepted norm in commercially sponsored medical research.”1:xiii

This corruption has been hidden by a “… complex web of corporate influence … exacerbated by an interlocking financial arrangement between “… trusted medical experts and the medical industry …” that results in conflicts of interest.”1:xiii According to Dr Abramson “… there has been a virtual take-over of medical knowledge in the United States, leaving doctors and patients little opportunity to know the truth about good medical care …” And, despite the “enormous costs,” both the quality and delivery of health care in America has declined. Not only has the industry co-opted the mechanisms of evaluation of effective treatment for widely accepted illnesses and it has colonized the healthy population by the construction of new disorders transforming risk factors into diseases that putatively require long-term and expensive prophylactic medications.

Beginning with an examination of a New England Journal of Medicine (NEJM) article (2000) that claimed a 19% reduction in stroke risk in a population that took the statin Pravachol compared to those who had been given a placebo, Dr Abramson discovered 21% more strokes than in patients given placebo.” Given that there are a number of proven, less expensive, and less hazardous interventions that reduce stroke risk, the aim of the Pravachol study “… seemed incontrovertible: to establish ‘scientific evidence,’ legitimated by the prestige of the NEJM, that would lead doctors to believe that they were reducing their patients’ risk of stroke by prescribing Pravachol.”1:17

Perhaps the most graphic example is the now-familiar history of hormone replacement therapy (HRT). For Dr Abramson, the HRT debacle is emblematic of the larger issue of pharmaceutical companies attempt to colonize new and lucrative markets by transforming normal human development, like menopause or aging, into illnesses requiring life-long medications.

Commercialization further hijacks the research agenda by determining what gets studied and what does not. Pharmaceutical sales and profits, Dr Abramson insists, make it impossible for practicing physicians to trust the research that appears in even the most highly regarded medical journals. He is concerned about the use of “consumer education” to market drugs and, thus undercut the physician-patient relationship. This “… hype creates false hope that moves us further away from real prevention, most of which has to do with a healthy lifestyle, and drains resources needlessly from far more effective health interventions.”

Dr Abramson points to The Institute of Medicine findings that “… behavior and environment are responsible for over 70% of avoidable mortality.” The same study finds that 10% to 15% of deaths result from inadequate medical care. Yet, 95% of health care spending targets biomedical interventions, especially pharmaceuticals. If one of the goals of medical care is to prevent disease, then, asks Dr Abramson, “… don’t doctors have a professional responsibility to address the unique health needs, habits, and risks of each individual patient?”

“The most important health care issue, [is to] restore the goal of medical knowledge creation to improve the health of Americans.”

Reference
BOOK REVIEW

The Body Bears the Burden: Trauma, Dissociation, and Disease
by Robert C Scaer, MD

Review by Anna Luise Kirkengen, MD, PhD

Robert C Scaer, MD, trained as a psychologist and a neurologist, has for the major part of his professional life been engaged in the challenges located at the interface between neurology and psychiatry. In the present book, he addresses chronic somatic symptoms in the aftermath of trauma that do not lend themselves to ordinary medical understanding and that frequently resist usual therapeutic approaches. He has chosen to elicit the nature—and perhaps logic—of persistent disability resulting from whiplash injuries. His professional familiarity with this particular medical problem seems comprehensive.

In the Preface, Dr Scaer presents a blueprint of the entire book: a patient’s story, the diagnosis of whiplash due to accident, a pattern of chronic and disabling complaints, different types of victimization prior to the actual trauma, and bodily inscriptions that literally “mirror” how this patient previously has been abused or maltreated.

The author states: “I have found that the severity of a person’s whiplash-related symptoms strongly correlates with his or her cumulative load of traumatic life experiences before the accident occurred.” His observations are condensed in two salient clues: first, “… the meaning of the event during which the injury occurs,” and second, “… the life history of specific traumatic events, especially those experienced in childhood.”

Dr Scaer proposes that the meaning of the present and the resonance of the past are the main keys to understand the resulting incapacitation. He addresses this interlinked process of “making pain out of meaning” and “making meaning out of pain” as follows: “The consistency of these findings among patients, and their startling correlations with concepts of altered autonomic physiology, has led me to the inescapable conclusion that clinical syndromes previously categorized as ‘nonphysiological,’ ‘psychosomatic,’ or ‘functional’ may be based on demonstrable dynamic neurophysiological changes in the brain.”

Central in Dr Scaer’s exploration are the HPA-axis and the Amygdala. Using observations of the freeze-flee-fight response to threat found in wild animals, the author concentrates upon the freeze response. After having survived threat by appearing as if dead in a frozen state, wild animals are documented as subsequently trembling, which even may extend to grand mal seizures. This trembling or shaking seems to accomplish the unfulfilled intention of fleeing, thus re-establishing the animal’s balance of functions.

Dr Scaer hypothesizes that humans represent an anomaly: they are not, when having been in a complete and passive state of freezing, relieved of their stored hormonal load. Defensive patterns of tension and nonaction remain unresolved and continue to act or be reenacted by every new trauma experience. Consequently, the observable, permanent, neurophysiological and neurochemical changes are experience-based rather than injury-based.

However, given the author’s strong emphasis on the meaning of experience, there is a risk in his thesis. If it is personal meaning that is decisive for individual trauma impact, one must be careful not to lose the details of personal and individual situations in the search for relevant activity in the central nerve system. Amygdala and hormones are means and mechanisms in the process of personal medical appraisal, not their causes.

The risk of mistaking means for cause exemplifies the very challenge this book represents. Both the author and his physician readers are trained in applying biological models and biomedical language that is deeply informed by the mind-body split of modern biomedicine. The personal appraisal of experiences cannot be addressed in the biomedical terms and models of brain and body. This book bespeaks the unity of human beings and their experiences; it calls for a joint effort. Author and reader must increase their awareness of the principal shortcomings in the framework, the concepts, and the language of biomedicine.

The Body Bears the Burden is a good tool for an exercise that is urgently warranted in medicine: thinking about human bodies as mindful. It may render the apparently “meaningless” highly meaningful.

Reference

Anna Luise Kirkengen, MD, PhD, is a former family practice physician in Oslo, Norway. She now lectures on the topic of how abused children become sick adults. She also tutors students in health care professions.
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Begin to Light Candles

You can blame people who knock things over in the dark, or you can begin to light candles.
You’re only at fault if you know about the problem and choose to do nothing.

— Paul Hawken, environmentalist, entrepreneur, journalist, and author
CME Evaluation Form

Section A.

page 3

Article 1. Rapid Intraoperative Parathyroid Hormone Assay in the Surgical Management of Hyperparathyroidism

Which of the following statements is incorrect? The intraoperative parathyroid hormone assay (IO-PTH):

- a. reduces the need for repeat surgeries
- b. cannot predict long-term outcomes for parathyroid resection patients
- c. reduces the extent of exploration in patients with single gland disease
- d. confirms complete removal of hypersecreting tissue
- e. none of the above

Which of the following statements is incorrect? The statistics for rapid IO-PTH assay at Fontana Medical Center suggest:

- a. a considerable decrease in hospital stay and quicker return to patient normalcy
- b. a significant decrease in operative time and surgical cost
- c. elimination of the risk of missing the presence of hypersecreting tissue
- d. no impact on the need for possible repeat surgical exploration
- e. not specified in the text

Page 19

Article 2. Communication Practices of Physicians With High Patient-Satisfaction Ratings

Physicians with higher patient-satisfaction scores were effective listeners. Which of the following practices were significantly correlated with higher patient-satisfaction scores?

High Group physicians:

- a. listened silently to patients for as long as it took for them to tell their story
- b. spent three to five more minutes per visit with their patients
- c. summarized or reflected what patients said
- d. use patient storytelling time to scan the notes on the last visit
- e. used all of the above practices

Which of the following practices were not associated with higher patient satisfaction scores? The High Group physicians:

- a. tended to know a select few details of the patient’s clinical or social history
- b. had a strategy of being direct with patients. If they wanted them to take a new medication, they would simply tell them to take the medication
- c. asked patients a large number of biomedical questions during the visit
- d. suggested several approaches to managing a chronic disease
- e. limited the number of issues to be covered during the visit, when necessary

(Continued on next page)
Objective

1) to inculcate the use of evidence-based medicine as part of the science of medicine. 2) to stress the art of medicine via enhanced patient physician communication, improved care experience for patients, and more satisfying care giving experience for physicians and staff through better teamwork. 3) to review appropriate updates on the diagnosis and treatment of clinical conditions. 4) to describe infrastructure and systems improvements that lead to improvements in outcomes and patient care experiences.

Section B.

Referring to the CME articles and to the stated objectives, please check the box next to each statement as appropriate.

<table>
<thead>
<tr>
<th>Article</th>
<th>Agree</th>
<th>Strongly Agree</th>
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<td>Article 1</td>
<td>5 4 3 2 1</td>
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The article covered the stated objectives.

I learned something new that was important.

I plan to use this information as appropriate.

I plan to seek more information on this topic.

I understood what the author was trying to say.

Section C.

What change(s), if any, do you plan to make in your practice as a result of reading these articles?

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Section D. (Please print)

Name: ____________________________

E-mail: ____________________________

Address: ____________________________

Signature: ____________________________

Date: ____________________________

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ORIGINAL ARTICLES

3 Rapid Intravesical 
Parathyroid Hormone-Assay 
In the Surgical Management of 
Hyperparathyroidism.

Craig A. Nelson, MD, CRS, CNS, 
Noel S. Victor, MD

In this study, intravesical PTH levels predicted the post-operative outcome for all patients, providing valuable information to surgeons and decreasing the duration of surgery and hospital stay.

7 Perinatal Loss Among Twins.

Anne Lynch, MD, MPH, 
Robert McQuillen Jr, MD, Ellis Lynch, MD, Mary Chase, Miriam Haidar, PhD

From this retrospective cohort study, Lynch et al conclude that loss in twins is most strongly associated with monochorionic diamniotic placentation. They emphasise the importance of the sequence of clinical events leading to this adverse pregnancy outcome.

13 Heart Failure Etiology Is Usually Multifactorial: Whether or Not There Is Associated Coronary Disease.

Arthur J. Klein, MD, Sharon Gromingen, RN, Natalia Uldahova, PhD, Douglass Charter, MD, Somali S. Bhat, MD, James Schipper, MD, Robert J. Lundstrom, MD

An attempt to classify underlying etiology of heart failure for an epidemiologic study yielded surprising results, including that no preponderant cause was identifiable in a large proportion and that most had multiple etiologic factors.

19 Communication Practices of Physicians With High Patients’ Satisfaction Ratings.

Karen Tallman, PES, Tam Janisse, MD, Richard M. Frankel, MD, Sue Sheung Sung, MPH, Edward Singal, PhD, John T. Hsu, MD, MBA, MACE

Videotaped clinic visits and follow-up interviews reveal that the highest rated physicians focus on the patient’s agenda and drive out their story with active listening responses, which builds a personal connection.

30 Association Between Satisfaction and Familiarity with Physician Among New Adult Members.

William C. Wells, PhD, Dorothy Ross Faison, MD, MEMA, FABP

Patients judge clinicians on the basis of how well they think clinicians know and care about them as individuals. Wells and Meder found a consistent trend of increasing satisfaction in the first four new patient visits with the same provider thus supporting the assumption that patient satisfaction increases as familiarity increases.

CLINICAL MEDICINE

33 Applying an Open-Access Model to a Psychiatric Practice.

Richard J. Moldawsky, MD

An anecdotal review of an open-access model for psychiatric re- 
turn visits reveals its challenges and advantages, including higher patient satisfaction, increased access, and decreased workload for clinical staff. A more systematic review is necessary.

Corrider Consult

37 Evaluation of Nocturia 
in the Elderly.

Dean A. Kajubu, MD, Sherif R. Ahmed, MD

A case study of this troublesome and common symptom reveals its impact on quality of life—further deep sleep disruption, cognitive dysf- 
ction, daytime somnolence, depression, etc.—and its more se- 
rious association with a 1.8-fold increased role of hip fracture.

40 People Using Technology 
To Transform Care: The 21st Century Care Innovation Project.

Hannah King, MPH, Ruth Brezni, MHA, Laurie Francis, MBA, MHA, Chuck Kilo, MD, MPH

Through the use of technology—
telephone appointments, secure messaging, and the Panel Support Tool for population care manage- 
ment—the 21st Century Care In- 
novation project is improving pa- 
tient care delivery and developing a more fulfilling and sustainable way for physicians to deliver care.

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