Several years ago, treatment mostly languished for cardiac arrest sign suspension 2003;57:231-5), the National Liaison Committee on Resuscitation in April 2003 (Re-endorsement by the Advanced Life Support Task Force of the International Liaison Committee on Resuscitation in April 2003 (Resuscitation 2006;34:1935-40). Experts cite many reasons for the slow uptake, despite overwhelming evidence of the efficacy and safety as well as the relative simplicity and low cost of TH. Perhaps the most frequently cited explanation is the “legacy of nihilism” for treating CPR survivors, after decades of seeing most of these patients go on to a poor quality of life, said Dr. Clifton W. Callaway, an emergency medicine physician at the University of Pittsburgh. He also noted the small number of cardiac arrest survivors that any single physician usually sees, making him or her unfamiliar with these patients, and the relatively low level of commercialization of TH. The absence of a billing code and resistance to the care of cardiac arrest patients (Crit. Care Med. 2006;34:1935-40).

As recently as 2006, a survey of U.S. emergency medicine physicians, critical care physicians, and cardiologists found that 74% of respondents had never used therapeutic hypothermia (TH) in cardiac arrest patients (Crit. Care Med. 2006;34:1935-40). Experts cite many reasons for the slow uptake, despite overwhelming evidence of the efficacy and safety as well as the relative simplicity and low cost of TH. Perhaps the most frequently cited explanation is the “legacy of nihilism” for treating CPR survivors, after decades of seeing most of these patients go on to a poor quality of life, said Dr. Clifton W. Callaway, an emergency medicine physician at the University of Pittsburgh. He also noted the small number of cardiac arrest survivors that any single physician usually sees, making him or her unfamiliar with these patients, and the relatively low level of commercialization of TH. The absence of a billing code and resistance to the care of cardiac arrest patients (Crit. Care Med. 2006;34:1935-40).

“Therapy with therapeutic hypothermia in Subjects with Acute Coronary Syndrome) showed improved clinical outcomes when rivaroxaban was added to background therapy with aspirin or with without clopidogrel, but at the cost of a dose-dependent increase in bleeding, reported Dr. C. Michael Gibson, chief of clinical research in the cardiovascular division at Beth Israel Deaconess Medical Center, Boston. This was a dose-ranging study, and should be completed in 2011, Dr. C. Michael Gibson announced while presenting the ATLAS ACS-TIMI 46 results at the annual scientific sessions of the American Heart Association. ATLAS ACS (Anti-Xa Therapy to Lower cardiovascular events in addition to Aspirin with or without thienopyridine therapy in Subjects with Acute Coronary Syndrome) showed improved clinical outcomes when rivaroxaban was added to background therapy with aspirin or without clopidogrel, but at the cost of a dose-dependent increase in bleeding, reported Dr. C. Michael Gibson, chief of clinical research in the cardiovascular division at Beth Israel Deaconess Medical Center, Boston. This was a dose-ranging study, and should be completed in 2011, Dr. C. Michael Gibson announced while presenting the ATLAS ACS-TIMI 46 results at the annual scientific sessions of the American Heart Association.
Hypothermia Blunts Brain Injury

Cardiac Arrest from page 8

imbursement for TH is another factor, said Dr. Bentley J. Bobrow, an emer-
gency medicine physician at the Mayo Clinic in Phoenix. Another issue is that
a diverse array of physicians, nurses, and technicians in several different specialties
all need to be on board in using TH as a cardiac arrest patient is transitioned from
ambulance to emergency department to coronary care unit, said Dr. Robert W.
Neumar, an emergency medicine physi-
cian and associate director of the center
for resuscitative science at the Universi-
ty of Pennsylvania, Philadelphia.

But slowly, the concept of TH gained currency and began being used by the
many health care constituencies involved: emergency medical services (EMS) per-
sonnel, emergency physicians, cardiolo-
gists, neurologists, nurses, and hospital administrators. At the end of 2008, it
looked like TH finally became the stan-
dard of care. “There has been a major shift
in the use of TH. We’ve seen a substan-
tial increase in interest,” so that at the start
of 2009 there is generally at least one large
center routinely using TH for cardiac ar-
est patients in virtually every major U.S.
metropolitan area, said cardiologist Mary
Ann Peberdy, professor of medicine and
emergency medicine at Virginia Com-
monwealth University in Richmond.

The idea is to treat cardiac arrest as a potential brain injury, not just a heart in-
jury. It’s a change so that it’s not CPR, it’s
CCR: cerebral resuscitation,” said Dr.
Stephan A. Mayer, chief of the neu-
rologic ICU at Columbia-Presbyterian
Hospital, New York. “Cooling for cardiac
arrest has been a grassroots, bottom up
emergency medicine at Virginia Com-
monwealth University in Richmond.

The initiative got a boost when it
was embraced by the medical directors
of the city’s EMS program and the fire
department. The result is that starting
this year, cardiac arrest patients who are
picked up by ambulances inside the city
and meet the requisite clinical parame-
ters will be taken to the closest hospital
that can provide TH as long as it can be
reached within 20 minutes. The program
also plans to start providing prehospital
cooling in the ambulance during 2009.

In December 2007, Dr. Bobrow
launched a program to designate Ar-
izona hospitals as cardiac arrest centers
that required participating centers to use
TH as well as other evidence-based
facets of resuscitation, report their out-
comes, and have percutaneous coronary
intervention available around the clock.
This is the first statewide program aimed
at boosting use of TH, said Dr. Bobrow,
who is also medical director for the Bu-
reau of Emergency Medical Services of
the Arizona Department of Health Ser-
vices, in an interview. By the end of
2008, Dr. Bobrow had enlisted 20 of
the approximately 70 hospitals in Arizona
into the program, and he hopes to in-
volve another 20 centers in 2009. Before
the program began, TH was available at
only one Arizona hospital. The program
also has EMS crews take patients to a
participating cardiac arrest center while
bypassing undesignated hospitals. TH use
increased from 2% of cardiac arrest
patients before the program began to
34%, while survival to hospital discharge
rose from 13% before to 22% with the
program in place. (See p. 9 for more on
cardiac arrest centers.)

Virginia Commonwealth University
in Richmond was an early adopter of TH
for resuscitated cardiac arrest patients,
starting in late 2002, said Dr. Peberdy.
But in February 2008, the program in-
tensified. Working with the Richmond
Ambulance Authority, EMS technicians
began to infuse chilled saline into ap-
propriate patients while in the ambu-
ance to start TH as soon as possible.
With cooling already begun, ambulance
drivers began to take patients only to
local centers with a protocol to continue
TH once patients arrived, and at the
time Virginia Commonwealth was the
only such hospital in Richmond. Ambu-
lance crews also improved their resuscita-
tion methods with an automated
chest-compression device designed to
boost blood flow, compared with manu-
ual chest compression. February 2008 al-
so introduced a more intensive, in-hospital
program at Virginia Commonwealth:
Advanced Resuscitation Cooling Thera-
petics and Intensive Care (ARCTIC),
modeled on a trauma-team approach. It
involves a specialized team of providers
trained to both continue TH and also
provide state-of-the-art resuscitation
with forcing the hand of at least one oth-
er Richmond hospital that introduced
TH following the launch of Virginia Com-
monwealth’s program in early 2008.

TH began to be used comprehensive-
ly at Columbia-Presbyterian in New York
in mid-2007, taking hold under the lead-
ership of Dr. Mayer. By late 2007, he and
other TH advocates in New York City or-
ganized a day-long hypothermia session
that led to a year-long effort to make TH
available to cardiac arrest patients around
the city. The initiative convinced the
Medical directors that 15% of cardiac arrest patients can deliver TH, a step that he predicted
will likely not be controversial because
“it is absolutely the right thing to do, and
because we are talking about a small num-
ber of patients,” he said in an interview.

Broader use of TH has the potential to
have a substantial clinical impact, ac-
cording to a 2008 analysis by researchers
at the University of Michigan, Ann Ar-
bor. They assumed that EMS crews an-
ually treat about 70 patients for out-
of-hospital cardiac arrest for every
100,000 Americans, or roughly 200,000
patients a year. Assuming that about 20%
of these patients have return of sponta-
neous circulation, and about a third of the
remaining patients would be eligible
for TH, and that six such patients need to
be treated to have one improved outcome,
then more than 2,000 additional Ameri-
cans a year stand to survive with a good
neurologic outcome if TH is routinely
used for all eligible cardiac arrest pa-
tients (Resuscitation 2008;77:189-94).

Cardiovascular Hospitalizations Declined by 17% During 2000-2005

New Orleans — The total number of hospitalizations for cardiovascular
events and procedures in the United States declined by 17% during the first 6
years of this decade, according to data from the Healthcare Cost and Utilization
Project’s Nationwide Inpatient Sample.

Hospitalizations for coronary heart
disease fell by an age- and sex-adjusted
24% from 2000 to 2005, while heart fail-
ure admissions remained essentially con-
stant, Craig S. Roberts, Pharm.D., re-
ported at the annual scientific sessions of
the American Heart Association.

The rate of elective coronary artery
bypass graft (CABG) surgery plummet-
ed by 46%. The total number of CABG
procedures decreased by 40% from more
than 385,500 performed in 2000. In con-
trast, primary angioplasties increased by
over 13%, from 3.2 per 1,000 persons in
2000 to 2.5 in 2005, while the elective an-
gioplasty rate remained flat, according to
Dr. Roberts of Pfizer Inc. in New York.

The total cardiovascular hospitaliza-
tion rate was 13.8 per 1,000 in 2000, drop-
ing to 11.5 in 2005. Coronary heart
disease hospitalizations declined from 3.3
to 2.5 per 1,000 during 2000-2005. The
heart failure hospitalization rate was 3.8
per 1,000 in 2000 and 3.7 in 2005.

—Bruce Jancin