Resuscitating the elderly: what do the patients want?

Peter Bruce-Jones, Helen Roberts, Lesley Bowker and Veneta Cooney
Department of Medicine for the Elderly, Poole Hospital and Elderly Care Unit, Southampton General Hospital

Abstract
Objectives—To study the resuscitation preferences, choice of decision-maker, views on the seeking of patients' wishes and determinants of these of elderly hospital in-patients.
Design—Questionnaire administered on admission and prior to discharge.
Setting—Two acute geriatric medicine units (Southampton and Poole).
Participants—Two hundred and fourteen consecutive consenting mentally competent patients admitted to hospital as emergencies.
Results—Resuscitation was wanted by 60%, particularly married and functionally independent patients and those who had not already considered it. Not wanting resuscitation was associated with lack of social contacts. Sixty-seven per cent welcomed enquiry about their preferences and 78% wanted participation in decisions, 43% as sole decision-maker. Wishing to choose oneself was associated with not wanting resuscitation, prior knowledge of it, and lack of a spouse. Patients' opinions remained stable during their admission.
Conclusions—Discussion of resuscitation is practical on hospital admission without causing distress and the views expressed endure through the period of hospitalisation. Elderly patients' attitudes depend partly on personal health and social circumstances. This may assist doctors when patients are unable to participate themselves.

Introduction
Although originally intended for use following acute insults cardiopulmonary resuscitation (CPR) is now used widely in hospitals despite its usual lack of success, particularly in established illness. Unlike the large majority of treatments it must be selected before any need arises. This involves assessments of "quality of life" as well as medical prognosis. Although it is unclear whether advanced age independently predicts non-survival after CPR, increasing morbidity and loss of independence in older age may influence patients' attitudes towards life-sustainment. These attitudes are predicted poorly by doctors and "quality of life" judgments require direct patient input. Thus there have been many recommendations that patients' own views be incorporated in CPR decisions. Despite proposed guidelines, British practice remains informal and inconsistent, and patients are consulted infrequently.

Most previous British studies of patients' opinions have questioned them at discharge from hospital, yet it is on admission that resuscitation plans are first made. We have studied the resuscitation wishes and determinants of these in patients on admission to the Elderly Care Units of Southampton General Hospital and Poole Hospital.

Patients and methods
Consecutive patients admitted as emergencies were interviewed within two working days of admission, using a questionnaire (see appendix). Exclusions included moribund condition, coma, a Hodkinson's Abbreviated Mental Test score less than 7/10, overt mental illness (taking antidepressant or major tranquilliser drugs or under psychiatric care), dysphasia and other significant communication difficulties. The commonest exclusion was impaired mental function (186 patients). Fifty-six eligible patients (21%) declined to participate. Two hundred and fourteen patients with a wide range of acute medical conditions were interviewed (Southampton 102, Poole 112), out of 595 acute admissions to the units during the study period (36%). They were aged 66-97 (median 84), and 65% were women. Subjects were given a brief description of CPR (appendix) stating that resuscitation is "often unsuccessful" but not giving outcome statistics.

The three core questions asked were:

(a) If your heart were suddenly to stop beating in hospital would you want vigorous attempts to be made to revive you?
and the family's wishes (28%) were the considerations thought most important. Answers to the core questions are given in Table 1.

**Table 1 Answers to the three core questions: numbers (%)***

<table>
<thead>
<tr>
<th>Question</th>
<th>On admission</th>
<th>At discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Resuscitation preference</td>
<td>n=214</td>
<td>n=118</td>
</tr>
<tr>
<td>CPR</td>
<td>129 (60)</td>
<td>63 (53)</td>
</tr>
<tr>
<td>No CPR</td>
<td>64 (30)</td>
<td>47 (40)</td>
</tr>
<tr>
<td>Not sure</td>
<td>21 (10)</td>
<td>8 (7)</td>
</tr>
<tr>
<td>(b) Who should decide?</td>
<td>n=211</td>
<td>n=119</td>
</tr>
<tr>
<td>Patient themself</td>
<td>91 (43)</td>
<td>56 (47)</td>
</tr>
<tr>
<td>Family</td>
<td>17 (8)</td>
<td>8 (7)</td>
</tr>
<tr>
<td>Doctor</td>
<td>30 (14)</td>
<td>15 (13)</td>
</tr>
<tr>
<td>Joint decision</td>
<td>73 (34)</td>
<td>40 (34)</td>
</tr>
<tr>
<td>(c) Should patients be asked?</td>
<td>n=214</td>
<td>n=115</td>
</tr>
<tr>
<td>Yes</td>
<td>144 (67)</td>
<td>82 (71)</td>
</tr>
<tr>
<td>No</td>
<td>57 (27)</td>
<td>33 (29)</td>
</tr>
<tr>
<td>Not sure</td>
<td>13 (6)</td>
<td>0</td>
</tr>
</tbody>
</table>

*Percentages rounded to whole integers.

(b) Would you want this to be decided by your self/family/doctor or a joint decision?
(c) Do you think you should be asked your wishes regarding resuscitation when you come into hospital?

Other questions focused on what factors were thought most important, and previous consideration and discussion of CPR. Knowledge and experience of CPR, perceived health and dependency, the Barthel Activities of Daily Living Index and social history were recorded. (The Barthel Index is a simple objective measure of functional ability and dependency and is the most widely used such instrument by geriatric medicine physicians, approved by the Royal College of Physicians and the British Geriatrics Society.) Finally, patients were asked whether they had found the questionnaire stressful. The core questions were repeated within two days of discharge in 121 patients (56%); the remainder were discharged very soon after the initial interview, died in hospital or were lost to follow-up. The study received local ethical committee approval and each subject gave written consent.

The centres were treated as a single population. Associations between answers to the three core questions and demographic and background health and social factors were tested by Chi-square tests for categorical variables and the Mann-Whitney test, or the Kruskal-Wallis test, as appropriate for continuous variables.

**Results**

The questionnaire was well received; only eight respondents (4%) replied that it was stressful. Nearly all (95%) the subjects had been in hospital previously. Ten patients said they had received CPR; five remembered what happened. Some knowledge of CPR was claimed by 116 patients (54%), mostly gained from television. Seventeen patients (8%) had participated in a resuscitation decision about a relative. Overall, usual health (38% of respondents), age (36%), "life at home" (32%) and the family's wishes (28%) were the considerations thought most important. Answers to the core questions are given in Table 1.

**Table 2 Characteristics of patients wanting and not wanting CPR**

<table>
<thead>
<tr>
<th></th>
<th>CPR</th>
<th>No CPR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>129</td>
<td>64</td>
</tr>
<tr>
<td>Median age</td>
<td>83 (5-85)</td>
<td>71 (30-65)</td>
</tr>
<tr>
<td>Sex:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Women</td>
<td>71 (30-65)</td>
<td>64 (27-82)</td>
</tr>
<tr>
<td>Men</td>
<td>58 (25-68)</td>
<td>12 (6-19)</td>
</tr>
<tr>
<td>Marital status:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>11 (6)</td>
<td>11 (6)</td>
</tr>
<tr>
<td>Married</td>
<td>51 (29-84)</td>
<td>11 (6)</td>
</tr>
<tr>
<td>Widowed</td>
<td>64 (34-96)</td>
<td>46 (20-79)</td>
</tr>
<tr>
<td>Median pre-admission Barthel score</td>
<td>18 (12-24)</td>
<td>17 (7-27)</td>
</tr>
<tr>
<td>Self-rated dependency (scale 0-10)</td>
<td>2 (1-3)</td>
<td>5 (2-7)</td>
</tr>
<tr>
<td>Independent for ADL</td>
<td>73 (30-100)</td>
<td>22 (10-50)</td>
</tr>
<tr>
<td>Needing help with ADL</td>
<td>56 (27-98)</td>
<td>42 (18-84)</td>
</tr>
<tr>
<td>Previously considered CPR wishes:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>28 (11-52)</td>
<td>31 (13-66)</td>
</tr>
<tr>
<td>No</td>
<td>100 (35-100)</td>
<td>32 (13-66)</td>
</tr>
</tbody>
</table>

*p<0.05; **p<0.01; ***p<0.001.*

(a) χ² test; (b) Mann-Whitney test.

WHO SHOULD DECIDE?

Three-quarters of patients wanted participation, alone or jointly. Results at discharge were very similar and the thirty-seven patients who changed their choice displayed no statistically significant trends. Single and widowed patients (and therefore women) favoured deciding for themselves, whilst a...
greater proportion of married patients than of other groups wanted a joint decision (Table 3). Patients desiring participation, alone or jointly, were older than those wanting their family or doctor to decide, but when analysed by sex and by marital status, only women and single patients showed this difference, suggesting that it was due to marital status. Patients with prior knowledge of CPR were less likely than those without to leave the decision to others. Those who wished to choose for themselves tended to have previously considered (38/91 patients, 42%; p<0.05) and to have rejected CPR (48/84 patients, 57%; p<0.001) and attached less importance to their family’s wishes. Only eight per cent of patients wanted their family alone to make the decision.

**SHOULD PATIENTS BE ASKED?**
Two thirds of patients said yes. There were no statistically significant trends between admission and discharge. As expected, those who wanted to choose themselves about CPR, alone or jointly, tended to agree with being asked.

**Discussion**
One concern with questionnaires such as this is whether respondents give their true opinions or perceived "proper" answers. It is impossible to be absolutely certain of this. However, when consenting to the study patients were asked to answer honestly and their opinions were sought using a uniform questionnaire and as standard an interview as possible. By so doing, by giving a brief description of CPR and by assessing prior knowledge we also attempted to control for known sources of variability of response.

We have found that elderly patients welcome discussion of resuscitation soon after emergency admission when such discussions are most relevant, confirming the results of previous studies at other stages.18-22 Our results, like those of Morgan et al21 and Mead and Turnbull22 do not support physicians’ common fear of provoking anxiety.23 24

There is some evidence that these discussions may improve psychological wellbeing.25

Most subjects wished to decide about resuscitation themselves, either alone or jointly, particularly those with prior knowledge of CPR or without a spouse. When patients were very ill, doctors commonly relied heavily on the views of relatives regarding the aggressiveness of treatment and life-sustaining procedures. Our results indicate that few patients favour this approach and this has practical implications for managing a very ill patient. In previous British and USA studies more patients (43–69%) have wanted CPR decisions to be taken by their doctors.18 21 22 26

Responses may depend on the precise questions asked, and socioeconomic differences between the study populations may also be important. Studies from the USA agree with our finding that most elderly people want some say in the matter.20 27

One objection to discussing CPR on admission is that patients’ judgment may be impaired by acute illness. Importantly very few of our sample had changed their minds by discharge. In a recent study most patients initially against CPR scored highly on a depression inventory and some had changed their minds by discharge, but the numbers involved were very small.26 We excluded patients with known depression. Directives made earlier may avoid this problem but the durability of patients’ opinions over longer periods cannot be assumed.25

Participation in decisions requires an understanding of the procedure in question, and this is generally lacking. As in other British studies,18 26 only half our patients had even partial knowledge of CPR. Even patients relatively knowledgeable about CPR have been found grossly to overestimate the chance of success.22 25 27 This may explain our finding, in common with several studies, that elderly patients usually do want CPR even if they are severely ill or disabled.4 5 22 26 29 Those of our subjects who had **Table 3 Who should decide? Characteristics of subjects favouring each type of decision**

<table>
<thead>
<tr>
<th></th>
<th>Self</th>
<th>Family</th>
<th>Doctor</th>
<th>Joint</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>91</td>
<td>17</td>
<td>30</td>
<td>73</td>
</tr>
<tr>
<td>Median age</td>
<td>85.0</td>
<td>79.0</td>
<td>81.5</td>
<td>84.0</td>
</tr>
<tr>
<td>Sex:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>women</td>
<td>67</td>
<td>12</td>
<td>14</td>
<td>44</td>
</tr>
<tr>
<td>men</td>
<td>24</td>
<td>5</td>
<td>16</td>
<td>29</td>
</tr>
<tr>
<td>Married patients</td>
<td>21</td>
<td>6</td>
<td>13</td>
<td>30</td>
</tr>
<tr>
<td>Single/widowed</td>
<td>70</td>
<td>11</td>
<td>17</td>
<td>38</td>
</tr>
<tr>
<td>Prior knowledge of CPR:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>55</td>
<td>4</td>
<td>10</td>
<td>45</td>
</tr>
<tr>
<td>no</td>
<td>35</td>
<td>13</td>
<td>20</td>
<td>28</td>
</tr>
<tr>
<td>CPR wish:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>36</td>
<td>16</td>
<td>27</td>
<td>49</td>
</tr>
<tr>
<td>no</td>
<td>48</td>
<td>0</td>
<td>1</td>
<td>14</td>
</tr>
<tr>
<td>Deciding factors:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>current illness</td>
<td>12</td>
<td>1</td>
<td>8</td>
<td>13</td>
</tr>
<tr>
<td>usual health</td>
<td>31</td>
<td>4</td>
<td>17</td>
<td>27</td>
</tr>
<tr>
<td>life at home</td>
<td>27</td>
<td>4</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>wishes of family</td>
<td>11</td>
<td>11</td>
<td>10</td>
<td>26</td>
</tr>
<tr>
<td>age</td>
<td>40</td>
<td>3</td>
<td>9</td>
<td>23</td>
</tr>
<tr>
<td>Agree with being asked wishes on admission</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>yes</td>
<td>66</td>
<td>9</td>
<td>12</td>
<td>56</td>
</tr>
<tr>
<td>no</td>
<td>20</td>
<td>6</td>
<td>18</td>
<td>13</td>
</tr>
</tbody>
</table>

*p<0.05, **p<0.01, ***p<0.001. (a) χ² test; (b) Kruskal-Wallis test.
already considered resuscitation were more equivo-
cal, in keeping with the small numbers (5–7%) wanting CPR in studies where more detailed
outcome information has been provided.31-31

Some studies have failed to find psychosocial
predictors of patients’ choices10 22 26 whilst others
suggest that old age lessens the desire for resusci-
tation29 30 or that men desire it more than women.18 29
In our study these differences were due to marital
status, and we have confirmed that social isolation
and dependency are determinants of patients’ opinions.

Although some trends can be seen, the attitudes
of individuals remain largely unpredictable. This
does not mean that patients’ wishes should univers-
ally be solicited: when outcome predictors show
that CPR would be medically futile no true choice
exists.6 8 In these situations patient autonomy and
patients’ desire for participation are more appropri-
ately satisfied by discussions aimed at “an under-
standing and acceptance of the clinical decision”
which is taken by professionals.7 Greater restriction
of CPR according to prognostic criteria will also
reduce the number of “grey cases” in which the main
issue is quality of life and patients’ opinions are most
important. Whilst most guidelines do not recom-
sand soliciting these opinions, patients expect their
doctors to initiate the discussion19 23 and have been
shown to be able to assimilate and use appropriate
information rationally. We conclude that patient
participation in resuscitation decisions is practical,
reliable and unstressful as well as being desirable and
popular. Elderly patients’ views appear to be stable
for the period of hospitalisation, and thus question-
ning soon after admission is worthwhile.

Dr Peter Bruce-Jones, MB, ChB, MRCP(UK), is
Senior Registrar, Department of Medicine for the
Elderly, Royal Bournemouth Hospital. Dr Helen
Roberts, BSc, MB, ChB, MRCP(UK), is Consultant
Physician, Elderly Care Unit, Southampton General
Hospital. Dr Lesley Bowker, BM, MRCP(UK), is
Medical Registrar, Royal Hampshire County Hospital,
Winchester. Dr Veneta Cooney, MBBS, is Senior House
Officer, Poole and Royal Bournemouth Hospitals.

References
1 Kouwenhoven WB, Jude JR, Knackenbocker GG,
Baltimore MSE. Closed-chest cardiac massage. Journal
2 Dautzenberg PLJ, Broekman TCJ, Hooyer C,
Schonwetter RS, Duursma SA. Review: Patient-related
predictors of cardiopulmonary resuscitation of hospi-
3 O’Keefe S, Redahan C, Keane P, Daly K. Age and other
determinants of survival after in-hospital cardio-
pulmonary resuscitation. Quarterly Journal of Medicine
4 Seckler AB, Meier DE, Mulvihill M, Cammer Paris BE.
Substituted judgment: how accurate are proxy
5 Uhlmann RF, Pearlman RA, Cain KC. Physicians’
and spouses’ predictions of elderly patients’ resusci-
tation preferences. Journal of Gerontology 1988; 43:
M115–21.
6 Florin D. “Do not resuscitate” orders: the need for a
policy. Journal of the Royal College of Physicians of
7 British Medical Association and Royal College of
Nursing. Decisions relating to cardiopulmonary resusci-
tation. Joint statement in association with the
8 Blackhall LJ. Must we always use CPR? New England
9 British Geriatrics Society. Advice on resuscitation
10 Doyal L, Wilsher D. Withholding cardiopulmonary
resuscitation: proposals for formal guidelines. British
11 House of Lords. Report of the Select Committee on
12 Podrid PJ. Resuscitating the elderly: a blessing or a
13 Wanzer SH, Federman DD, Adelstein SJ, Cassel CK,
Cassem EH, Cranford RE, et al. The physician’s
responsibility toward hopelessly ill patients. New
14 Williams R. The “do not resuscitate” decision: guide-
lines for policy in the adult. Journal of the Royal
15 Keatinge RM. Exclusion from resuscitation. Journal
16 Hodkinson HM. Evaluation of a mental test score for
assessment of mental impairment in the elderly. Age
17 Mahoney FI, Barthel DW. Functional evaluation: the
18 Gunasekera NPR, Tiller DJ, Clements LTS-J,
Bhattacharya BK. Elderly patients’ views on cardiopul-
19 Lo B, McLeod GA, Saika G. Patient attitudes to dis-
cussing life-sustaining treatment. Archives of Internal
20 Stolman CJ, Gregory JJ, Dunn D, Levine J. Evalua-
tion of patient, physician, nurse and family atti-
dudes toward do not resuscitate orders. Archives of
Internal Medicine 1990; 150: 653–8.
21 Morgan R, King D, Prajapati C, Rowe J. Views of elderly
patients and their relatives on cardiopulmonary resusci-
22 Mead GE, Turnbull CJ. Cardiopulmonary resusci-
tation in the elderly: patients’ and relatives’ views. Journal
23 Kohn M, Menon G. Life prolongation: views of elderly
outpatients and health care professionals. Journal of the
24 Schade SG, Muslin H. Do not resuscitate decisions:
discussions with patients. Journal of Medical Ethics
25 Kellog FR, Crain M, Corwin J, Brickner PW. Life-
sustaining interventions in frail elderly persons. Talking
about choices. Archives of Internal Medicine 1992; 152:
2317–20.
26 Liddle J, Gillear C, Neil A. The views of elderly
patients and their relatives on cardiopulmonary resusci-
tation. Journal of the Royal College of Physicians of
Appendix: Information for participants

There is a lot of debate at the moment about what should happen if a patient has a "cardiac arrest", and I would like to ask you for your opinions.

A cardiac arrest is where a patient's heart suddenly and unexpectedly stops beating (ie, it does not mean the gradual slowing and weakening of the heart beat in someone who is known to be dying). Nowadays it is sometimes possible to revive someone in this situation using cardiac massage (compressing the chest), drugs and electric shocks. Such resuscitation attempts are often unsuccessful, and they may revive only the heart and breathing but not the whole person. Therefore, this treatment is not given to all hospital patients. It may be withheld because of a very poor chance of success, or because it is considered kinder not to revive someone who has a serious incurable disease. Usually in this country it is the doctors who make this judgment, and very little is known about patients' own views.

We would therefore like to ask you some questions about your opinion on resuscitation and what things have influenced it. Your answers will be treated as strictly confidential. You may withdraw from the study at any stage if you wish and this will not affect your care in any way.

CPR patient questionnaire
Part 1: within two working days of admission

<table>
<thead>
<tr>
<th>Subject number</th>
<th>Age:</th>
<th>Sex:</th>
<th>Marital Status:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cultural origin:</td>
<td>Mental test score on admission:</td>
<td>Barthel score on admission:</td>
<td></td>
</tr>
</tbody>
</table>

Please answer the following questions by ticking the box or underlining your chosen answer as appropriate. Please ignore questions 9 and 10 (marked "**"); these will be completed by the investigators.

1. How satisfied are you with your recent quality of life? (tick)
   - Totally unsatisfied
   - Moderately unsatisfied
   - Partly unsatisfied
   - Partly satisfied
   - Moderately satisfied
   - Totally satisfied

2. How do you rate your health (for your age)? (underline)
   above average
   average
   below average

Social history

3. Are you living with?
   your spouse
   son/daughter
   alone
   other family
   warden-controlled flat
   other arrangement:

4. If you live alone, how much contact do you have with your family:
   less than once a week
   more than once a week
   none

5. How much social contact do you have outside home:
   frequent
   infrequent
   none

6. Do you look after a disabled person yourself? Yes / No

7. Do you need any help with basic everyday activities?
   no
   occasionally
   usually

8. On a scale of 0–10, how dependant on other people are you? (0=fully independent; 10=dependant for everything)

Medical history

*9. Current medical problem:
*10. Principal background illnesses and disabilities:

11. How many times have you been in hospital before?
   none
   1–5
   6–10
   >10

Previous experience

12. Have you ever been resuscitated? Yes / No / don't know

13. Do you remember what happened? Yes / No

14. Do you know what is actually done when someone is resuscitated? Yes / No

15. How did you learn about resuscitation?
   - through relatives/friends
   - through the media
   - first hand

Opinions about resuscitation

16A. If your heart were suddenly to stop beating in hospital would you want vigorous attempts to be made to revive you? Yes / No / Not sure

17. Have you thought about this before? Yes / No

18A. Would you want this to be decided by your:
   - self alone
   - family alone
   - doctor alone
   - self and family/doctor jointly

19A. Which of the following factors do you consider the most important for your choice? (tick)
   a) this illness?
   b) your usual state of health?
   c) life at home?
   d) the wishes of your family?
   e) religious beliefs?
   f) your age?
   g) your previous experience of resuscitation?
   h) other reasons:

20. Have you discussed this question with:
   - your family?
   - your family doctor?
   - anyone else?
   If so, whom?

21. Have you ever been involved in a similar decision about a close relative? Yes / No

22A. Do you think you should be asked your wishes regarding resuscitation when you come into hospital? Yes / No

23A. Have you found this questionnaire stressful? Yes / No
Part 2: within two days of discharge

Please answer the following questions by underlining or ticking the answers as appropriate.

16B. If your heart were suddenly to stop beating in hospital would you want vigorous attempts to be made to revive you?
   Yes  No  Not sure

18B. Would you want this to be decided by your:
   self alone  family alone  doctor alone  self and family/doctor jointly?

19B. Which of the following factors do you consider the most important for your choice?
   a) this illness
   b) your usual state of health?
   c) life at home?
   d) the wishes of your family?
   e) religious beliefs?
   f) your age?
   g) your previous experience of resuscitation?
   h) other reasons:

22B. Do you think you should be asked your wishes regarding resuscitation when you come into hospital? Yes / No

23B. Have you found this questionnaire stressful Yes / No

24. Are there any other comments you wish to make?

News and notes

**Fourth International Symposium on Sexual Mutilations**

The Fourth International Symposium on Sexual Mutilations will be held at the University of Lausanne in Switzerland from the 9th to the 11th of August this year. The symposium is for medical professionals and others interested in the human rights, medical, and ethical implications of male and female sexual mutilations. Presenters will include health care professionals, scholars and legal experts from Europe, North America, Australia and Africa. For further information contact: George C Denniston, MD, MPH, President, DOC, Doctors Opposing Circumcision, 2442 NW Market St Suite 42, Seattle, WA 98107, USA. Telephone: 415-488-9883. DOC4thISSM@aol.com.