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Ministry of Health

**Women's Health and Development Directorate - Gaza**



# Maternal Death Study

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**Case Studies of Maternal Death  
In Gaza Strip  
For  
The Period of January 2006-June 2006**

**Introduction:**

Gaza's population is largely poor and has been exposed to Israeli incursions repeatedly. In the period of January to June 2006, the total official number of maternal deaths recorded by the MOH and UNRWA were 8 cases in the Gaza Strip, up from 4 cases in the same period for years 2005 and 2004. The 8 cases of maternal death recorded (4 from MOH Shifa hospital and 4 from UNRWA clinics) are from different localities and with various medical complications: 1 from Rafah shot indecently by a Palestinian military group; 1 had heart attack from Beit Hanoun and advised against pregnancy; 2 women had hypertensive disorders of pregnancy in form of pregnancy induced hypertension from Mughraka and Bureij, 1 woman who suffered from pregnancy induced hypertension in form of Pre eclampsia from Shati camp and was 42 years old didn't have complete medical records in either UNRWA or the MOH. The final case is from Zaitoon. She died from severe pre- eclampsia. This is in addition to the two cases selected for the purpose of this report. The rapid regression in the socio-economic situation characterized by collective impoverishment; the continuous closure and the insecurity of mobility for most Palestinians living in poor and border zones; the destruction of the basic infrastructure which makes electricity and water available only for 2 to 3 hours a day; and the difficult management of the Palestinian health system as a result of the unstable Palestinian political environment, are all interlinked factors supporting the assumption that maternal death is much higher than what is officially recorded in Gaza Strip.

Maternal death (MD) is not a purely health and medical phenomenon as it is still commonly understood. Rather, MD should be considered a socioeconomic and cultural phenomenon influenced by the understanding and the practice of gender in the Gaza Strip. Women in poor communities of the Gaza Strip are the main caretakers of family members. Domestic care has increased with widespread poverty, further burdening women's workload. To cope with increased poverty levels in Gaza at the household level, poor women have been responsible for reducing family food expenditures. This means that the quantity and quality of food women intake becomes less while their domestic workload becomes heavier. The free time available for poor women for self-care and socialization has also by no doubt decreased as a result of feelings of insecurity from the continuous Israeli incursion and bombing. Women can't leave their young children under such conditions for personal reasons, even in cases of urgent need for health care. In this situation of poverty and insecurity, poor Palestinian women often sacrifice their own health in favor of their children's. This is reflected in the MOH hospitals records by the refusal of a number of poor high risk pregnant women to remain in hospital. These socio-economic and cultural factors have a clear influence on women's health in general and their reproductive health in particular and by consequence increase the risk of morbidity and death. The majority of poor women in Gaza still do not have control over reproductive health decisions, including fertility, pregnancy and ability to seek maternal

services. Despite the slight decrease in the national fertility rate, poor and less educated women, especially those who live with extended families in remote areas, still show male child and large family preferences based on social and religious justifications.

The understanding of the social context of women's life in relation to their reproductive health has to be incorporated in the design of quality primary and secondary maternal health services. The 2004 statistics however show that while infrastructure and services for antenatal and delivery care have increased compared to the year 2000, cases of pregnancies at risk for 2004 is higher (15.5% out of the total newly pregnant women in the MOH and 42.1% out of the total antenatal visits of newly pregnant women in UNRWA). Among the main factors associated with high risk pregnancy are anemia (52.2%), primipara (29%) and multipara (23.9%). In addition, postnatal care has rapidly decreased to 1,107 women in the year 2004 compared with 1453 women in the year 2001.<sup>1</sup> It is therefore reasonable to conclude that maternal death and morbidity by association will increase with greater numbers of high-risk cases as well as with decrease in antenatal and postnatal care (quantity and quality). Though quantitative data alone cannot explain this correlation, it is likely that the increase in anemia, primipara and multipara is very much related with the increase in poverty, lack of good education, social mobility restriction, and feeling of insecurity. Adequate infrastructure for maternal primary and secondary health care services is one means of ensuring maternal health.

### **Context and Methodology:**

The Women's Health and Development Directorate (WHDD) at the Ministry of Health initiated an investigation of cases of maternal death in the Gaza Strip which has been appreciated and supported by UNFPA. The reason for highlighting the issue of maternal death through a pilot research of only two case studies is to better understand the factors contributing to the increased number of maternal deaths in the first half of 2006 compared to 2005, especially as one consequence related to the overall rapid deterioration of Gaza Strip's socio-economic situation and the collapsing of the basic health service delivery system.

Though the humanitarian situation in Gaza has been in crisis since the beginning of the second Intifada, it hit at peak following the election of a new Palestinian government in January 2006 and the serious financial deficit which ensued as a result of the withholding of the international donor funds and tax revenues to be paid by Israel. As result of the continuous closure of all Gaza's borders and the withholding of international financial support to the Palestinian government, around 70% of Palestinian households are now living in poverty. Most households in Gaza cope with poverty by large decrease in their basic expenditures including food, health and education. The financial crisis has widespread poverty implications on the entire population given the employees of the public sector and their families who are dependent on government salaries which have not been paid for the most part since February. However, the crisis has further disadvantaged the poor who have become poorer and more deprived from the basic social

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<sup>1</sup> Statistics compiled from the regular reports of Women's Health and Development Directorate (WHDD) at the Ministry of Health.

development services (health, education and social security). Women are also more vulnerable to reduced access to services and care in such situations. For example, women may reduce their nutritional intake to make it available for their children. They may also show preference for using expendable income to treat another family member, especially a child, and disregard her own health, especially where family income is scarce. This is reflected, according to OCHA report of July 2006<sup>2</sup>, in the prevalence of anemia amongst pregnant women in Gaza which increased to be %43.1. This is caused according to the report from low food intake, increased illnesses and lack of appropriate care and services as well as some practices.

The financial siege imposed on the existing Palestinian government has also lead to malfunctioning of government institutions, particularly those which provide education, health and social security services. The Ministry of Health which used to have the highest budget allocation from the national budget is now encountering problems meeting its basic functional needs as a result of lack of funds, including staff salaries. Initially, non-payment of salaries to MOH employees did not largely affect staff commitment to provide services to the people. However, the continuity of siege for the many months since February 2006 has taken its toll on MoH staff enthusiasm and ability to cope.

Many reports including the recent ones of OCHA asserted that the services of diagnostic, elective surgery and out-patient services have been significantly reduced due to lack of disposables as well as a shortage of essential drugs and laboratory reagents. In the main three hospitals of Gaza, equipment maintenance is still a serious problem that compromises the diagnostic and surgical units. This by no doubt contributes to the death of many emergency cases especially when referral to Israeli or/and Egyptian hospitals is not possible because of the continued Israeli security closure on Gaza borders.

The deterioration in maternal health services provided to pregnant women is a natural manifestation of the overall deterioration in the Palestinian health system. The Palestinian official statistics for year 2004 showed that only 29.6% of pregnant women in Gaza Strip received postnatal care. This percentage is more likely to have decreased as PHC services have largely deteriorated since 2004 till today, especially in light of the shortages since February 2006. Shifa hospital records showed significant increase in cesarean surgery in recent months. This increase is attributed by Shifa hospital management to the inability the increased number of pregnant women to afford private hospital care and the only option available for delivery is Shifa hospital. Given that the hospital always has the problem of overload with limited number of beds, nursing and other medical staff, maternity wards are subjected to deterioration as the quality of hospital services and facilities becomes reduced while the number of delivery cases has rapidly increased. The danger is that women with cesarean surgery are forced to leave the hospital in very short period because of limited bed space and staff, especially under emergency conditions and/or due to lack of health insurance. This is according to the Shifa hospital staff the main cause of increasing morbidity amongst mothers and babies<sup>3</sup>.

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<sup>2</sup> OCHA Report: The Humanitarian Monitor, no.3 2006: p2

<sup>3</sup> This information is part of the comments and findings resulted from the workshop conducted with the MOH stakeholders for the purpose of the case studies presentation.

Another serious problem facing the health system in Gaza is the increased number of admissions in MOH hospitals, including late admissions that may lead to death/near death. This problem is highly noticed in the delivery department of Shifa hospital where all refugee and non-refugee women are referred in case of high-risk pregnancy and for normal delivery (UNRWA does not have hospitals in Gaza). Though the MOH and UNRWA PHC clinics are distributed adequately in the different localities of Gaza, these clinics do not have basic functioning equipment and tests repeatedly needed by pregnant women (e.g. Ultrasound and blood test). Pregnant women, especially those in risk, have to be referred to hospitals to have access to such services through long bureaucratic procedures. As it's stated by the MOH officials, more than 90% of all delivery cases in Gaza Strip are done in the MOH hospitals. Shifa hospital has the largest load as more secondary health services are available compared with other hospitals. The increasing stress in the delivery department in Shifa hospital (around 300 patients a day) is not bearable whereby the medical staff has to deal with around 40 cases of delivery a day with limitation in the nursing staff. Given such limitations, health providers must tradeoff between effective and adequate attention to individual patients and servicing those who come into the hospital and thus increasing the likelihood of gaps in service. In addition, though maternal death due to medical causes such as eclampsia has been reduced in most of countries worldwide, death caused by eclampsia remains high in Palestine due to collapse in basic health services as a consequence of continuous closure and blockades imposed on Palestinian people's mobility. Moreover, the long experience instability in the Palestinian health system as a result of volatility in the Palestinian political context and donor attitude has weakened the client-provider relationship, particularly with MOH institutions (hospitals and PHC).

These observations of trends on the deterioration of the health situation for pregnant women have been strong motive for the WHDD to investigate cases of maternal death that is a corollary of the rapid reduction in the quantity and quality of maternal health services and in the health system on the whole. The MOH aims through the analysis of the two case studies of maternal death to gain the needed insight into the gaps in service delivery at both micro and macro levels. This is particularly true since quantitative statistics are insufficient, qualitative data scarce and recorded hospital documentation of maternal death insufficient.

These two case studies of maternal death were selected out of the eight for researching the detailed causes of death and the different socio-economic and cultural factors influencing the process leading up to the death. The two cases are only a piloting of the phenomenon that may lead to wider investigation of maternal death at the national level and from wider socio-economic perspective.

**The research methodology** used with the two case studies is reflective of the personal experiences and perceptions of each party involved directly or indirectly in the process leading to the maternal death. This includes the woman's family, health providers at the PHC and hospital levels and secondary data from clinic and hospital records. It is also concerned with links to the socio-economic background of the two cases and the changes

occurring in their livelihood, their health status, and linking available information with the health institutional services and care (quantity and quality) in order to have a comprehensive understanding and analysis of the root and structural causes of maternal death.

Data was collected and analyzed through individual and group interviews with different people who had experienced the death of the two cases:

First, the family members of the two dead mothers were interviewed in their homes. Information from women and men living in the same home was collected and cross-checked for accuracy of statements;

Second, the physicians and nurses of PHC clinics (UNRWA and MOH) where the two cases were registered for prenatal and postnatal services were interviewed. All official records about the two cases were collected and cross-checked with the PHC physicians;

Third, the Chief of Department of Hematology and the physicians who followed up the two cases in Shifa hospital were interviewed individually and in a group.

However, the information collected from all parties was not fully consistent, and in some cases, contradictory. The accuracy of all information provided can not be measured scientifically through the two case studies. However, the collected information allowed us successfully to understand the context of maternal death and the possible direct and indirect factors affecting its increase in Gaza Strip under the current situation of socio-economic and political crisis. The conclusions of the two case studies definitely contribute in better strategizing health interventions aiming to reduce maternal death in Gaza and warrant further research to validate the trends identified in this paper.

The names of the subjects for this case study have been changed to protect the confidentiality and privacy of the women and their families. All other information is exact.

## CASE STUDY No.1

### **Its Not Um Muhammad's Destiny to Die in Her Prime**

*"Oh, yes...I remembered her. Um Muhammad, that poor young woman who used to look very weak, vulnerable and disheveled"*

Said by the UNRWA PHC physician in Nusairat clinic

#### **1) Socio-economic and cultural background:**

Um Muhammed is a mother aged 29 years old and her husband is aged 32. She has three children; two girls and a boy in addition to a girl, born a few minutes after her death. Um Muhammed's husband is a soldier with the Palestinian armed forces with the lowest salary paid for public employees which ceased since the non-payment of civil servant employees in March 2006. Um Muhammed and her husband are illiterate. The husband is not sociable and spends most of his time in or around home with little communication with people. As the head of the household, the lack of money was making him depressed. He showed a sense of carelessness towards the death of his wife during the interview. He married another woman 50 days after Um Muhammed's death.

Um Muhammed lived in Bedouin area called *Malalaha* in Wadi Gaza. It's a rural, not highly populated area where people mainly depend on livestock production for their livelihood. Um Muhammed lived in a very poor and unhealthy house containing three rooms inhabited by two families as well as the father-in-law. Um Muhammed, along with her 3 children lived in a small room; the kitchen and bathroom are common for all household members. The land around Um Muhammed's house is too dirty and full of rubbish and sewage water. It is also noticed in front of the sleeping rooms around ten heads of sheep and donkey cargo that is used for the family mobility. It is not clear if they earn money from raising sheep or they just own it for domestic use.

Um Muhammed's family lived far from her in the Sinai desert, leaving her socially vulnerable, especially in times of domestic conflict and distress. This lack of family support which is considered the main source of social security for Bedouin and rural women left Um Muhammad more socially disadvantaged than neighboring women, even those who were poor but had brothers and fathers in the vicinity to protect them. The husband's family seemed dispassionate towards the children during the interview whereby the children looked uncared for. Um Muhammed according to her father in law and husband did not have any social life and she used to spend all her time around her children. Um Muhammed's left the house only when she needed to visit the UNRWA PHC center in Nusairat. She used to visit the health clinic on regular basis as she suffered from high blood pressure during her last two pregnancies.

The health facilities and services in Um Muhammed area of living are relatively satisfactory. There is an UNRWA clinic in Nusairat (5 minutes walk to get a taxi, and 7 minutes to reach the clinic). For emergency health services, Um Muhammed lived closed to El Zahra government PHC center (10 minutes by taxi). She used to receive the blood pressure drugs from UNRWA clinic on regular basis similar to most poor refugee women who prefer the UNRWA clinic for monitoring her pregnancy because it's free of charge. Though the number of PHC centers is satisfactory in ElMalaha and El Zahra areas, there is no proper facility to provide antenatal care for high risk pregnancy such as in Um Muhammed's case.

## **2) Health status and Occurrence of death:**

Um Muhammed's health status was not stable during the pregnancy. According to UNRWA clinic records, she used to follow her blood pressure regularly with the nurse. In her fourth month of pregnancy, her blood pressure became high and she was referred by the physician to Shifa hospital. According to UNRWA clinic nurse, Um Muhammed refused to be admitted in the hospital for a few days to stabilize her blood pressure because she needed to care for her children. Um Muhammed as confirmed by the UNRWA nurse was very anxious about her health which prompted her to change her diet during her pregnancy as advised by the physician. Um Muhammed's brother-in-law and sister in law, who lived in the same house, also confirmed that Um Muhammed's diet used to be so bad and dangerous (eating fried potato and tomatoes all the time). *'After Um Muhammed knew about her high blood pressure, she became very careful about what to eat'*, the sister in law said. Since she was dependent on what was already available to the family, her food reduced to less than the minimum food a pregnant woman needs and she found the choice of what to eat difficult. Though Um Muhammed used to visit the UNRWA PHC clinic once every two weeks, she could have been monitored more closely by a physician, especially as a high risk pregnancy. The reason that this didn't occur might be the scarcity of money for transportation or/and refusal of her husband to let her go frequently to the PHC clinic.

In her ninth month pregnancy and on the day of her death April 14<sup>th</sup> 2006, Um Muhammed felt so sick the whole day. By the end of the day, she felt unable to breathe. She spent an hour in such condition with no care from her husband or her father-in-law. It was not until her brother in law came and noticed her tiredness that he asked his neighbor to bring his taxi to take Um Muhammed to El Zahra health clinic. During the 10 minutes in the taxi, she had symptoms of eclampsia. In 5 minutes, Um Muhammed was referred to Shifa hospital/emergency unit by the ambulance whereby her heart beat stopped. The physician decided to save Um Muhammed's now distressed baby via an emergency cesarean surgery on the dead mother. The referral procedures were done very quickly for Um Muhammed because her case was high risk. Though she was very tired two days before her arrival to the hospital there was no clear reason why she was not taken to the hospital on time. El Zahra PHC clinic physician accompanied Um Muhammed in the ambulance and emergency obstetric care was given to her. All this did not save her life because she was too late in seeking medical treatment as a high risk pregnancy and in her current condition.

### 3) Views of the causes of Um Muhammed's maternal death:

- The physicians and nurses asserted that Um Muhammed received satisfactory antenatal health care from both UNRWA and government clinic. The Shifa hospital as well did the best to save her life, but it was not possible because she had developed eclamptic fit as a result of untreated severe pre-eclampsia when she arrived at hospital. The physician decision to conduct a cesarean section after Um Muhammed's death in order to save the baby's life was wise enough. In terms of services, they also confirmed that the service (drugs and ambulance) provided to Um Muhammed by UNRWA and government clinics before her death was timely and the best which could have been done in her highly risky case;
- From the point of view of Um Muhammed's nurse and physician, Um Muhammed was not given the least concern and care by her family members and she was defenseless with no family members' support like father, mother, brothers, and sisters. Neither she nor her husband's family members were aware of what to do in case of Um Muhammed's health deterioration. This made them leave her with no treatment until her health became in danger;
- From the point of view of the husband and father-in-law, Um Muhammed's death was not caused by high blood pressure. The husband said: "*She had the same problem in her last pregnancy and it was not dangerous*". The father-in-law and the husband don't see themselves responsible for being late to send Um Muhammed to the hospital. They rather believe that Um Muhammed's death was her destiny.

### 4) CONCLUSION:

While the number of PHC clinics has rapidly increased in the last three years, poor women's accessibility and utilization of the infrastructure and better quality of services that are responsive to the direct and indirect causes of maternal health problems which may lead to death or near death has been jeopardized from the emergency situation. Maternal health planners, decision makers and practitioners have to consider the concept of gender and the socio-economic status of women in order to plan for effective and efficient maternal health services. To reduce maternal death and to ensure well being of women and children, particular emphasis has to be given to women's lives in poverty and social insecurity.

It is obvious that all the above mentioned causes reflect how each person or actor perceives his/her responsibility of health care. However, all what is presented above about how the death occurred does not really give precise and reliable information about the direct causes of Um Muhammed's death. Um Muhammed was seriously sick for more than one day and she did not inform anybody because she was afraid not to find support. Um Muhammed's husband might not have had money enough to take her to the hospital on time. Despite the confirmation that Um Muhammed changed her diet to stabilize her blood pressure, she might not have been able to change it adequately under her family constraints and lack of social and health care. She might not also have been able to buy

appropriate food that would provide sufficient nutritional intake as well as reduce her blood pressure because of lack of money. She might also have forgotten to take the blood pressure tablets for some reason. Her family members were less than willing to talk about her death and showed a sort of carelessness which left the interviewer with an impression that physical and psychological violence was probably practiced against Um Muhammed. Any form of violence against Um Muhammed would make her more stressed and leads to rapid increase in her blood pressure. The lack or maybe the absence of family social care and support beside the lack of health awareness prevented Um Muhammed to adhere to physician's advice on diet and did not allow her to go on weekly basis to monitor her blood pressure.

The household poverty and unhealthy home environment Um Muhammed lived in, in addition to her illiteracy, did not provide her with a space and opportunity to look after her health. Um Muhammed was not involved in any institutional activities close to her house wherein she can talk about her problems with other women or where she could receive health education and information. In El Malalha area, there are no social facilities or places where poor and sick women like Um Muhammed can go and communicate with each other for mutual support.

Finally, the PH centers (UNRWA and government clinics) may provide satisfactory primary health care services, but they don't till today realize the importance of socializing women's health problems, means to link the different socio-economic and cultural factors affecting and that are affected by the health status of women. As we all believe that well being is not only defined as lack of physical sickness, but it has to include other social factors like education, awareness, socialization, social safety, employment...etc. The health status of Um Muhammed might not have been jeopardized to the point leading to death were she powerful and had the means to take her own decisions vis-à-vis her own health matters. Um Muhammed's death is not her destiny. Rather, it was a direct result of lateness in seeking medical treatment, and indirectly it is a result of poverty (exacerbated by the loss of the husband/breadwinner's source of family income through unemployment), lack of awareness and health care amongst family members while Um Muhammed was socially a powerless and defenseless woman.

With regard to maternal health services, however Um Muhammed was registered accordingly in antenatal care as an at-risk pregnancy and making her regular visits to PHC center every two weeks. These visits are not sufficient for pregnant in risk. Um Muhammed was in need of outreach services, especially home visits as part of a follow up program for high risk cases. Intensive home visits for at risk cases are essential, particularly with women who live in poor socio-economic situations. The home visits in Um Muhammed's case should have included monitoring of her blood pressure, disseminating of relevant information and raising awareness about what to do in case of emergency. Pregnant women in poor remote areas with social restrictions in movement and lack of social support do not have the power to take decisions about their health and mobility, so it is important to consider pregnant at risk as special cases in order to reduce maternal death.

## CASE STUDY No. 2

*Shifa hospital capacity cannot save a pregnant woman's life where no options are available under the situation of complete siege in the Gaza Strip*

### **1) Socio-economic and cultural background:**

Salwa was a mother aged 29 years old and her husband is aged 30 years old. She lived in El Zaitoon area. Salwa finished ninth grade and her husband has Tawjehi (high school diploma). Salwa was a housewife and her husband is now working as a carpenter in the family business. Her husband used to work as a farmer on family land before the Intifada. However, the entire piece of land was continuously exposed to repeated military incursions throughout the Intifada, making farming impossible and effectively uprooting the family.

Salwa had 4 children, 2 boys aged 9 and 5 and two girls aged 7 years and 7 months old, respectively. The 7 month old girl is the child who was born a few days before her mother's death. Salwa lived in a small apartment in the family building where each of her brothers-in-law has an apartment. The family building is located very close to the family agricultural land which has been exposed to bombing and incursion by the Israelis. The mobility of Salwa's family and her relatives has been very much restricted since the beginning of the Intifada.

Salwa and her husband are cousins and they all lived in an atmosphere of family connectedness. Salwa used to have good social support from the family members, especially her mother and brothers who live around her. Salwa lived a moderate livelihood compared with her neighbors. The husband used to earn enough money for the basic needs of the family despite the rapid deterioration of the family income compared with the period before the Intifada. It was noticed during the home visit to the apartment that Salwa's children are now living in a supportive family environment as they look healthy and tidy. The husband said: *"I bought all the schooling stuff for the children and I am trying to compensate them the loss of their mother."*

Salwa suffered a lot during her pregnancy especially in regard to utilization of PHC services because the closest government clinic (Al Sourani in El Shejaia) is not easily accessible. Salwa had to spend long hours to get to the clinic and had to spend the whole day in the hospital because normal movement and transport to and from her house was not safe during the months of her pregnancy. Salwa's PHC physician said: *"I used to facilitate Salwa's care so that she could do all her blood tests as well as receive medication in the same day so that she could avoid insecure movement, especially during the Israeli incursions. This, however, meant that in a single day, she had to go to the Government PHC clinic to get a referral report, then to go to Shifa hospital to do her blood tests and then come back to Alsourani PHC clinic to get her medication. This round is so tiring, but it's better than leaving her home several days a week."*

## **2) Salwa health status and occurrence of death:**

After the delivery of her third child, Salwa suffered from palpitation and dyspnoea. She visited a cardiac specialist, who upon examination, informed her that she had little problem in one of her heart's arteries which needed catheterization, but which was not urgent. Salwa's doctor advised her not to get pregnant for 4 years after her last pregnancy and she duly followed his advice. In her records in Shifa hospital, there is no information about her heart problem. It seems that she did not inform her physicians at neither the PHC clinic nor Shifa hospital about her heart problem. It's only her husband who talked about such problem.

In the fourth month of Salwa's last pregnancy dated Nov. 13<sup>th</sup> 2005, she suffered from bleeding in her teeth and nose. She was referred by her PHC physician to Shifa Hospital's Hematology Department and it was discovered that she suffered from decreased blood platelets. During the time of Salwa's blood disease discovery, her physicians in both the PHC clinic and in Shifa hospital did not treat her as a case of high risk. Rather, Salwa was given a drug to be used for three days and it was agreed to come regularly for follow up in the Hematology Department at Shifa hospital. Her health was stable for less than two months when she came down with new bleeding. She visited Shifa hospital again on January 11<sup>th</sup> 2006 where she stayed for two days in the Internal Medicine Department. The reason for staying in a different department might be the lack of space, but the physicians didn't consider it as a serious problem that affected Salwa's treatment. According to a Shifa hospital physician, Salwa then left the hospital without physician permission, which was contended by the husband who asserted hospital physicians allowed her to leave on the second day. The Hematology Department was not informed of Salwa's stay in the IMD for two days. No records about her case during these two days are available in her file in the Hematology Department either. In such situations, it was probable that Salwa left the hospital while she was still in need of secondary treatment in the hospital. Another possible reason is that Salwa was pushed to leave the hospital to leave space for the large number of emergency cases resulting from the Israeli incursion. The physicians interviewed did not mention any of these reasons and confirming only that Salwa received satisfactory treatment and care.

On 29<sup>th</sup> January when Salwa finished her 34<sup>th</sup> week of pregnancy, she had bleeding again in her nose, teeth and womb. She was referred to Shifa Hospital/Delivery Department where she was given blood platelets to stop the bleeding. Her health stabilized for one week as she became ready for delivery. She delivered her baby in Shifa Hospital on Feb. 5<sup>th</sup>. A few hours after her delivery, Salwa's health faltered due to severe hemorrhaging. The physicians' investigation of Salwa's case was that her body rejected the blood platelets transferred to her in hospital. This case according to Dr. Bayan El Saqqa, the Head of Hematology Department happens very rarely. He affirmed that Salwa's case is classified as blood allergy and it is documented in medical science.

Salwa was directly referred to the intensive care department. The hospital tried to refer her to an Israeli hospital, but failed to do so because of the rigid closure of the Erez

border. After 5 days of stay in the intensive care unit, Salwa had renal failure and there was no emergency capacity in Shifa Hospital to do anything for her. There was a serious attempt to know the medical reasons why nothing was done for Salwa during the 5 days in the intensive care, but no information was available from either her records or from her physicians. Several physicians with different experiences had followed up Salwa' case during her last 5 days, but no concrete information was given. The final justification of Salwa's terminal case by her physicians was the inability to move the Haemodialysis equipment from the internal medicine department to the intensive care department and the inability at the same time to move Salwa from the intensive care to the internal medicine department despite her dangerous condition. The Intensive Care Department owns this equipment, but it was in need for repairing and no reason was given for why this essential equipment was not repaired during the 5 days of Salwa's stay in the intensive care. As it's estimated by one physician who works in Shifa hospital, the price of a Hemodialysis machine is around \$12,000 and its maintenance costs a few thousand. He also added that medical equipment in the hospital is not maintained regularly for several reasons: Israeli closure of borders as most medical equipment is brought from Israel; the high cost of maintenance and lack of follow up and regular check which is a managerial responsibility. Salwa died after 5 days of being in the intensive care on Feb.15<sup>th</sup>.

### **3) Lack of recording and miscommunication in the health system:**

It was found during the case study that one of the influential factors affecting the precision and accurateness of any medical investigation, treatment and follow up is the lack, irregularity and inaccurateness of medical recording of cases. Salwa used to go regularly to Al Sourani PHC clinic yet all her records were not transferred to the Hematology Department in Shifa Hospital. Salwa's case was also not recorded as a high risk case which adversely affected her access to certain types of services and treatment provided to her. Her physician in Al Sourani clinic attributed this to how he categorizes her disease. He said: "*Salwa was not recorded as an at risk case because she did not suffer from the symptoms of eclampsia and she only had decreased blood platelets.*" Salwa's health problem was thus treated as a normal case, and from the PHC physician's point of view, she does not fit the criteria of cases of high risk.

When we tried to cross-check the accuracy of the physician's point of view with regard to MoH protocol for assessing pregnancy risk, the Chief of the Hematology Department confirmed that Salwa's case according to Shifa hospital rules and regulations had to be recorded as a case of high risk, which are managed differently from normal. For examples, high risk patients do not go through the long procedures like other normal cases do.

The miscommunication between the records of Shifa hospital and the PHC clinics files and records is very dangerous. Salwa's file in the PHC clinic as a pregnant woman with blood disease (idiopathic thrombocytopenia) was archived after she was referred to the hospital for delivery and so was hard to find. Salwa's PHC follow up file was not transferred to the hospital along with the referral letter. Shifa Hospital thus dealt with

Salwa as a new case with a new file without acknowledgment of her health history. The referral letter from the PHC clinics to hospital only includes information about the immediate situation of the case with no intention to the health and medical history of the case. This necessarily leads to gaps in investigation and medical treatment. In addition, there was a misunderstanding of Salwa's medical history between her attending physicians. Whereas the PHC physicians perceived Salwa a normal case of pregnancy, Shifa Hospital physicians dealt with her as a case of high risk. There was no coordination between the medical staff of hospitals and PHCs which weakens the transfer between PHC and SHC service provision.

Another problem related to the records-keeping system surfaced when Salwa stayed in different departments of Shifa Hospital as is mentioned above. Her records in the three departments are not necessarily consistent because the physicians in each department dealt with her as a new case. The records in Shifa hospital were not circulated, at least partially due to the fact that they have no computerized network. With Salwa's case, it was so hard to investigate having had no records in the delivery department. Those records transferred with her to the intensive care were finally sent to the hospital archive after her death. Pregnant women who move from the Delivery Department to another for any reason have their records transferred with them to the other department, and are not returned again once the woman returns to delivery. Moreover, all cases of pregnant women who died out of the Delivery Department are not recorded as maternal death cases. Thus the official records of maternal death only reflect what is recorded in the delivery department which is not an accurate recording of the phenomenon.

#### **4) Conclusions:**

It is clear from the details of Salwa's case study her place of residence in an area closed to the eastern border of Gaza and which was continuously under incursion did not help her to follow up regularly. The continuous Israeli closure and the inability of the Palestinian facility to refer to an Israeli hospital accelerated the death of Salwa at her young age. Her death can, however, also be attributed to medical complications with limited emergency health facilities, equipment and staff at Shifa Hospital that were unable to meet the necessary treatment requirements, especially when Salwa went into renal failure.

With regard to the hospital rules and regulations, Salwa was supposed to be registered as an at risk pregnancy but was not mentioned in her medical records. The physicians' misunderstanding and miscommunication of hospital rules and regulations is the main cause of such problem. This undoubtedly restricted the facilities and treatment provided to her. Salwa as a case at risk should have stayed for a longer time in hospital to be followed up continuously without any long bureaucratic procedures.

The lack of an accurate recording system in Shifa Hospital also led to miscommunication in the investigation and medical treatment potentially leading to fatal errors. In Salwa's case, physicians in each department recorded her case but in the necessary sequential manner and interlinking the changes occurring in her health status. The recording and

referral system in Shifa Hospital is manual and it is exposed to many potentially serious human errors, particularly when the patient load is excessive and staff overworked in the emergency context. It also affects negatively the cost-effectiveness and efficiency of investigation and medical treatment.

Irregular repair of the medical equipment, due to closures as well as managerial reasons made it impossible to save Salwa's life from renal failure. Regular checks and replacement of dysfunctional equipment has not been possible for Shifa Hospital given the financial crisis and closure. In addition, the hospital management has to put all mitigation measures in cases of emergency by making the necessary equipment available in each department with regular repairs and updates as well as ensuring adequate redistribution of available drugs and supplies.

From a gender perspective, women in Gaza, especially the poor and marginalized, still lack information about maternal health and its complications. PCH clinics should give attention to health information and counseling of pregnant women in increasing awareness of maternal health, the health service delivery system and its regulations in order to timely follow up their maternal health needs. Immediate emphasis has to be given to pregnant women in high-risk categories. This includes home visits to motivate high-risk women to follow up their pregnancy on a weekly basis according to the MOH protocols and guidelines.

Poor women still lack an understanding of the relation between their reproductive health and their socio-economic status. This requires the Reproductive Health Units of MOH and UNRWA to be activated with more awareness raising programs about the actual problems poor women face during their pregnancy. Women need to be encouraged as well to participate in community-based centers where their personal and family problems influencing their health are collectively discussed and negotiated.

Many health care providers tend to focus on the purely medical aspects of reproductive care. Gender inequities disempower women who have limited or no control over their health care decisions or mobility outside the home. Physicians, nurses and midwives need to be trained to consider a woman's social context and provide appropriate advice and support. In Um Mohammed's case, for example, the physician's advice was to change/improve her diet, not considering that in her impoverished household with little social support, she was not able to decide on the appropriate food nor purchase it. As such, the advice was of little value.

Finally, if the number of deaths has risen in only six months and indications from the case study point to variables related to the emergency situation, then the number of near deaths and maternal morbidity is reasonably rising as well. Trends indicate the need for greater investigation and attention to alleviating the underlying causes as well the immediate ones. In particular, focusing on the poorer women and those in isolated areas with limited access to timely emergency obstetric care needs is warranted.

## **Recommendations for Interventions by the Stakeholders of the Ministry of Health:**

A workshop was conducted with different stakeholders from the ministry of health aiming to present and discuss the preliminary findings of the two case studies. The stakeholders' discussion came out with a recommendation for essential interventions in the following areas:

1. Referral system
2. Recording system
3. Free of charge services for high risk pregnancy cases
4. Re-activating a Maternal Mortality Committee
5. Promote continuous communication & feedback between PHC & hospitals as well as between the MOH & UNRWA
6. Standardization & unifying maternal health services provided by the MOH & UNRWA
7. Establish a WH clinic in the region of Zahra
8. Promote counseling for & increase awareness among women of the issues related to their health
9. Death certificate for RH age females
10. Conducting regular case studies of maternal mortality (e.g. monthly)
11. Ensure regular implementation of the program of postnatal home visits & implement the program of antenatal home visits especially for risky cases
12. Developing a National plan for postnatal care
13. Provision of necessary medical equipment & its maintenance
14. Continuous training of obstetricians & gynecologists on update RH issues
15. Nutritional supply for needy cases
16. Follow up implementation of & adherence to the National RH Guidelines & Protocols