รายงานการวิจัย

เรื่อง

ความสามารถในการจ่ายค่ารักษาพยาบาล และสภาวะเจ็บป่วยจนล้มละลาย
ของผู้ป่วยในที่จ่ายค่ารักษาพยาบาลเอง ในจังหวัดสงขลา

(Study On Family's Ability To Pay And Financially Catastrophic Illness (FCI) Among Out-of-Pocket In-Patients: Songkhla Province)

ใน

"ชุดโครงการวิจัย การพัฒนารูปแบบการจัดการระบบประกันสุขภาพ
ในสภาวะเจ็บป่วยจนล้มละลาย"

โดย

นายแพทย์อนุพงค์ สุจริยากุล
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หน่วยระบาดวิทยา
คณะแพทยศาสตร์ มหาวิทยาลัยสงขลานครินทร์

โครงการวิจัยนี้ได้รับทุนสนับสนุนจาก
สถาบันวิจัยระบบสาธารณสุข

ธันวาคม 2542

กิตติกรรมประกาศ

การศึกษาวิจัยนี้ ประสบความสำเร็จอย่างดียิ่ง ด้วยความช่วยเหลือในการเก็บข้อมูลวิจัย ของพยาบาล และเจ้าหน้าที่สังคมสงเคราะห์ ด้วยความอนุเคราะห์ และความร่วมมือที่ดีจากผู้ป่วยและญาติ หัวหน้าฝ่ายการพยาบาล ผู้รับผิดชอบงานสังคมสงเคราะห์ งานการเงิน และงานเวชระเบียนของโรงพยาบาล ตลอดจนผู้อำนวยการโรงพยาบาล ของโรงพยาบาลทุกแห่งที่เป็นโรงพยาบาลศึกษาวิจัย คณะผู้วิจัยขอกราบขอบพระคุณเป็นอย่างสูง ณ โอกาสนี้

ขอกราบขอบพระคุณ สถาบันวิจัยระบบสาธารณสุข ที่ให้ทุนสนับสนุนในการวิจัย

ผลที่ได้จากการศึกษาวิจัยนี้ คณะผู้วิจัยหวังเป็นอย่างยิ่งว่าคงเป็นประโยชน์ในการวางแผนจัดระบบประกันสุขภาพในอนาคต สำหรับผู้ที่ยังไม่มีหลักประกันสุขภาพในขณะนี้ ตลอดจนการกำหนดนโยบายที่เหมาะสม เกี่ยวกับการสร้างหลักประกันสุขภาพ ในการดูแลการเจ็บป่วยที่มีราคาแพง (high-cost care) และสภาวะเจ็บป่วยจนล้มละลาย (catastrophic illness) ต่อไป

อนึ่ง หากรายงานวิจัยฉบับนี้ ยังปรากฏมีความบกพร่อง และต้องปรับปรุงแก้ไข คณะผู้วิจัย ขอน้อมรับนำไปปรับปรุงแก้ไข พัฒนาให้ดีขึ้น ด้วยความเคารพอย่างสูง

คณะผู้วิจัย

สารบัญ

บทสรุปสำหรับผู้บริหาร

คำนำ

การศึกษานี้มุ่งวิจัยเพื่อนำผลไปสู่การพัฒนาการจัดระบบประกันสุขภาพที่คุ้มครองการเจ็บป่วยจนถึงขั้นล้มละลายทางเศรษฐกิจของครอบครัว (Financially catastrophic illness- FCI) จากการทบทวนวรรณกรรมที่เกี่ยวข้อง และการจัดระบบประกันสุขภาพของประเทศไทย แม้ว่าความครอบคลุมของหลักประกันสุขภาพในปัจจุบันจะสูงถึง 76% ก็ตาม แต่หลักประกันที่มีอยู่ไม่ได้ระบุชัดเจนว่า จะให้คุ้มครองครอบคลุมค่าใช้จ่ายด้านรักษาพยาบาลเพียงไร ฉะนั้น ครอบครัวที่มีหลักประกันอาจจะประสบกับสภาวะล้มละลายจากการเจ็บป่วย ถ้าการเจ็บป่วยมีราคาแพงมาก สำหรับกลุ่มที่ไม่มีหลักประกันสุขภาพ ซึ่งครัวเรือนต้องจ่ายค่ารักษาพยาบาลเองเมื่อเจ็บป่วยนั้น มีความเสี่ยงต่อการเกิดสภาวะล้มละลายจากการเจ็บป่วยได้มากกว่าเพราะโอกาสเกิดสภาวะล้มละลายจากการเจ็บป่วยขึ้นกับความสามารถในการจ่ายค่ารักษาพยาบาลของครัวเรือนมาก (Family's ability to pay - ATP) ปัจจัยทางเศรษฐฐานะและสังคม อาจเป็นตัวกำหนดความสามารถในการจ่ายของครอบครัว แต่ไม่มีหลักฐานที่ชัดเจนจากงานวิจัย

เนื่องจากการเจ็บป่วยจนถึงขั้นล้มละลายนั้น ไม่จำเป็นต้องเกิดกับการเจ็บป่วยที่มีค่ารักษาราคาแพงเสมอไป ค่ารักษาพยาบาลไม่มาก ก็อาจทำให้ครอบครัวล้มละลายได้ ถ้าความสามารถในการจ่ายไม่เพียงพอ จากการทบทวนความคุ้มครองที่จัดให้โดยหลักประกันสุขภาพที่มีอยู่ในขณะนี้ ผู้ที่มีหลักประกันนั้นพอจะแน่ใจว่า จะไม่มีปัญหาในความสามารถในการจ่ายของครัวเรือน เมื่อมีภาระค่ารักษาพยาบาล โครงการประกันสุขภาพของภาครัฐที่มีอยู่ขณะนี้ เช่น โครงการสวัสดิการรักษาพยาบาลผู้ป่วยรายได้น้อย โครงการบัตรประกันสุขภาพ ส่วนใหญ่มีลักษณะให้การคุ้มครองถึงบาทสุดท้ายของค่าใช้จ่าย แม้ว่าในทางปฏิบัติ อาจพบปัญหาผู้ให้บริการมีแนวโน้มให้บริการต่ำกว่ามาตราฐานที่กำหนดแก่ผู้มีสิทธิ อย่างไรก็ตาม แนวโน้มการคุ้มครองของการประกันสุขภาพในประเทศไทย จะไม่คุ้มครองถึงค่าใช้จ่ายบาทสุดท้าย มีการกำหนดเพดานในระดับใดระดับหนึ่งเฉพาะ เช่นการเปลี่ยนแปลงที่เกิดขึ้นในโครงการสวัสดิการรักษาพยาบาลของข้าราชการ มีการจำกัดจำนวนวันนอนในโรงพยาบาลกรณีผู้ป่วยใน เป็นต้น ขณะที่ผู้ที่ไม่มีหลักประกันสุขภาพเลยการที่สามารถจ่ายได้หรือไม่ ขึ้นกับ ความสามารถในการจ่ายของครัวเรือน การวิจัยนี้จึงมุ่งศึกษาถึงความสามารถในการจ่ายของครัวเรือนที่ไม่มีหลักประกันสุขภาพ วิธีการจัดการทางการเงินของครัวเรือนเมื่อประสบกับภาระในการจ่ายค่ารักษาพยาบาล และโอกาสการเกิดสภาวะการเจ็บป่วยจนถึงขั้นล้มละลายของคนกลุ่มนี้

วัตถุประสงค์การวิจัย

1) พรรณาถึงความสามารถในการจ่ายค่ารักษาพยาบาลของครัวเรือนที่ไม่มีหลักประกันสุขภาพ หรือ ครัวเรือนต้องจ่ายค่ารักษาพยาบาลเอง (pay out of the pocket)
2) หาความสัมพันธ์ระหว่างความสามารถในการจ่ายค่ารักษาพยาบาลกับปัจจัยทางสังคม เศรษฐกิจ และประชากร
3) วิเคราะห์พฤติกรรม วิธีการจัดการทางการเงินของครัวเรือนเมื่อประสบกับภาระในการจ่ายค่ารักษาพยาบาล และผลกระทบของการเจ็บป่วย และภาระการเงินต่อครอบครัว
4) ศึกษาลักษณะโรคที่พบบ่อย ค่ารักษาพยาบาล วันนอนโรงพยาบาล วงเงินสูงสุดที่ครัวเรือนสามารถจ่ายได้ของผู้ป่วยที่ครัวเรือนต้องจ่ายค่ารักษาพยาบาลเอง เมื่อเผชิญกับภาระค่ารักษาพยาบาล และในกรณีที่เข้าข่ายสภาวะเจ็บป่วยจนล้มละลาย
5) คาดประมาณอุบัติการณ์ของการเจ็บป่วยจนล้มละลายในจังหวัดสงขลา

วิธีการศึกษาวิจัย

การวิจัยนี้ ได้ออกแบบโดยแบ่งเป็น 2 งานวิจัยย่อย งานวิจัยแรก เรียกว่า FCI-1 Study เป็นการสำรวจเก็บข้อมูลผู้ป่วยในรายใหม่ ที่ต้องจ่ายเงินค่ารักษาพยาบาลเอง และอาศัยอยู่ในจังหวัดสงขลา เป็นผู้ป่วยที่มานอนรักษาในโรงพยาบาล ทั้งโรงพยาบาลของรัฐบาลและเอกชนในจังหวัดสงขลา ตั้งแต่เดือนพฤศจิกายน 2541 จนถึงเดือนเมษายน 2542 โดยการสัมภาษณ์ด้วยแบบสอบถามที่ผ่านการทดสอบแล้ว งานวิจัยที่สอง เรียกว่า FCI-2 Study เป็นการสำรวจผู้ป่วยในที่อาศัยอยู่ในจังหวัดสงขลาที่ต้องจ่ายเงินค่ารักษาพยาบาลเอง และมีปัญหาในการจ่ายค่ารักษา ต้องขอรับการสังคมสงเคราะห์ของโรงพยาบาลสองแห่งที่เลือกอย่างเจาะจง ระยะเวลาที่ศึกษา คือ เดือนพฤษภาคม และมิถุนายน 2542

ในการวิจัยทั้งสอง ใช้ทั้งวิธีวิจัยเชิงปริมาณและเชิงคุณภาพ เพื่อตอบวัตถุประสงค์เฉพาะเพื่อให้ทราบถึงวิธีการจัดการกับค่ารักษาที่โรงพยาบาลเรียกเก็บ เจาะลึกถึงแหล่งที่มาของเงินที่ครอบครัวใช้ในการจ่ายค่ารักษาพยาบาล ได้ออกแบบเก็บข้อมูลเชิงคุณภาพ เสริมการวิจัยเชิงปริมาณ ดังนี้

1) คัดเลือกผู้ป่วยในรายใหม่ที่ต้องจ่ายค่ารักษาพยาบาล เอง ประมาณ 10% ของตัวอย่างในแต่ละโรงพยาบาลที่คัดเลือกในการวิจัยเชิงปริมาณใน FCI-1 study แล้วติดตามผู้ป่วยทุกครั้งที่มีการจ่ายค่ารักษาในระหว่างที่นอนโรงพยาบาล ตั้งแต่วันแรกที่นอนโรงพยาบาลจนถึงวันจำหน่าย วิธีการเก็บข้อมูลนี้ เรียกว่า time-series data collection
2) เก็บข้อมูลเชิงคุณภาพ ประมาณ 40 ตัวอย่าง ซึ่งเป็นผู้ป่วยในที่จ่ายค่ารักษาพยาบาล เอง และมีปัญหาในการจ่าย ต้องขอสังคมสงเคราะห์จากโรงพยาบาล โดยวิธีการสัมภาษณ์

เชิงลึก (in-depth interview)ในหอผู้ป่วย ร่วมกับการเยี่ยมบ้าน เพื่อเสริมกับข้อมูลเชิงปริมาณใน FCI study

พื้นที่ใช้ในการศึกษา คือ จังหวัดสงขลา เนื่องจากมีจำนวนประชากรไม่มากเกินไป ระบบบริการสาธารณสุขในระดับโรงพยาบาลนั้น ประกอบด้วยโรงพยาบาลหลากหลาย ตั้งแต่โรงพยาบาลชุมชน โรงพยาบาลจังหวัด โรงพยาบาลศูนย์ของกระทรวงสาธารณสุข โรงพยาบาลในสังกัดกระทรวงกลาโหม โรงพยาบาลคณะแพทยศาสตร์ ในสังกัดทบวงมหาวิทยาลัย และโรงพยาบาลเอกชน ในจำนวนที่ไม่มากเกินไป จึงมีความเหมาะสมในการศึกษาวิจัย

งานวิจัยแรก: การสำรวจความสามารถในการจ่ายของครัวเรือนที่ต้องจ่ายเงินเอง (FCI-1Study)

กลุ่มตัวอย่าง คือผู้ป่วยที่ต้องจ่ายเงินค่ารักษาพยาบาลเอง และอาศัยอยู่ในจังหวัดสงขลา ซึ่งถูกคัดกรองตั้งแต่วันแรกที่นอนโรงพยาบาล และถูกสัมภาษณ์โดยพยาบาลที่ผ่านการอบรมแล้ว เมื่อนอนโรงพยาบาลไปแล้วมากกว่า 48 ชั่วโมง หรือก่อนที่ผู้ป่วยถูกจำหน่ายจากโรงพยาบาล กลุ่มตัวอย่างที่ต้องการคือ ประมาณ 300 ตัวอย่างต่อหนึ่งกลุ่มโรงพยาบาลที่ศึกษา ประมาณ 10% ของตัวอย่างในแต่ละกลุ่มโรงพยาบาล จะถูกคัดเลือกศึกษาแบบอนุกรมเวลา (time-series study) เพื่อติดตามผู้ป่วยตลอดระยะเวลาที่อยู่โรงพยาบาล เพื่อตอบคำถามว่า ทุกครั้งที่โรงพยาบาลเรียกเก็บค่ารักษา หรือมีการจ่ายค่ารักษาพยาบาล ครัวเรือนมีวิธีจ่ายเงินอย่างไร มีแหล่งที่มาของเงินจากที่ใดบ้าง

โรงพยาบาลที่ศึกษาประกอบด้วยโรงพยาบาลรัฐและเอกชนในจังหวัดสงขลา ดังนี้ โรงพยาบาลชุมชนจำนวน 8 แห่ง ได้แก่ โรงพยาบาลระโนด โรงพยาบาลนาทวี โรงพยาบาลจะนะ โรงพยาบาลเทพา โรงพยาบาลสะเดา โรงพยาบาลรัตภูมิ โรงพยาบาลควนเนียง และโรงพยาบาลสะทิงพระ (โดยข้อสมมุติ ผู้ป่วยที่ต้องจ่ายเงินเองที่มารักษาในโรงพยาบาลทั้ง 8 แห่ง มีลักษณะไม่แตกต่างกัน ในการวิเคราะห์ถือว่า เป็นโรงพยาบาลแห่งเดียว) โรงพยาบาลทั่วไปได้แก่ โรงพยาบาลสงขลา โรงพยาบาลศูนย์ได้แก่ โรงพยาบาลหาดใหญ่ โรงพยาบาลคณะแพทยศาสตร์ในสังกัดทบวงมหาวิทยาลัย ได้แก่ โรงพยาบาลสงขลานครินทร์ โรงพยาบาลเอกชนแสวงกำไร ได้แก่ โรงพยาบาลราษฎร์ยินดี และโรงพยาบาลเอกชนไม่แสวงกำไร ได้แก่ โรงพยาบาลมิตรภาพสามัคคี

ผลการศึกษา

ผลการวิจัยเชิงปริมาณนั้น ผู้ป่วยที่ต้องจ่ายเงินเอง อาศัยอยู่ในจังหวัดสงขลา และเข้าหลักเกณฑ์ในการศึกษา คิดเป็นสัดส่วนร้อยละ 4-38 ของผู้ป่วยในทั้งหมดที่นอนโรงพยาบาลในช่วงที่ทำวิจัย แสดงว่า ผู้ป่วยที่เข้ารักษาตัวในโรงพยาบาล ในจังหวัดสงขลา ส่วนใหญ่มีหลักประกันสุขภาพครอบคลุมอยู่แล้ว เพียงส่วนน้อยที่ครัวเรือนต้องจ่ายค่ารักษาพยาบาลเอง ในการศึกษานี้สามารถเก็บตัวอย่างได้ทั้งหมด 1731 ตัวอย่าง ความสามารถในการจ่ายของผู้ป่วยมีความแตกต่างกันในระหว่าง

โรงพยาบาล ผู้ป่วยที่ไปใช้บริการที่โรงพยาบาลเอกชน เกือบไม่มีปัญหาว่าจ่ายค่ารักษาพยาบาลไม่ได้เลย ขณะที่โรงพยาบาลของรัฐ พบว่าผู้ป่วยที่มีปัญหาในการจ่าย คือไม่สามารถจ่ายค่ารักษาได้ทั้งหมดหรือบางส่วน แตกต่างกันตั้งแต่ร้อยละ 23.8 จนถึง 36.8 โดยร้อยละที่พบ จะแปรผันไปตามขีดความสามารถในการดูแลผู้ป่วยของโรงพยาบาล จากการศึกษาพบว่า ปัจจัยทางเศรษฐกิจและสังคมหลายตัวแปร มีความสัมพันธ์กับระดับความสามารถในการจ่าย ได้แก่ ระดับการศึกษาของผู้ป่วย อาชีพ และรายได้ของครัวเรือน เมื่อวิเคราะห์ว่า กลุ่มตัวอย่างสามารถจ่ายค่ารักษาได้มากน้อยเพียงไรด้วยวิธี life-table method ปรากฏ ว่า ณ ค่ารักษาที่ 14,700 บาท ประมาณครึ่งหนึ่งของประชากรกลุ่มตัวอย่างจะประสบกับปัญหาจ่ายค่ารักษาไม่ได้ ครัวเรือนส่วนใหญ่ร้อยละ 89 จะใช้เงินสด หรือเงินออม เป็นแหล่งเงินแรกที่สำคัญในการจ่ายค่ารักษา ขณะที่ประมาณร้อยละ 8 ต้องใช้การหยิบยืมเงินเป็นแหล่งเงินแรกในการจ่ายค่ารักษา และร้อยละ 21 ของประชากรในกลุ่มตัวอย่างต้องใช้แหล่งเงินจากเงินยืม เป็นส่วนหนึ่งของค่ารักษาพยาบาลครั้งปัจจุบัน จากการศึกษาพบว่ากลุ่มที่จ่ายค่ารักษาได้นั้น มีรายได้ครัวเรือน ระดับการศึกษา และสถานภาพอาชีพสูงกว่า กลุ่มที่จ่ายค่ารักษาไม่ได้ทั้งหมด สัดส่วนของค่ารักษาที่โรงพยาบาลเรียกเก็บต่อรายได้ทั้งปีของครอบครัวในกลุ่มที่จ่ายค่ารักษาไม่ได้นั้น สูงกว่า กลุ่มที่จ่ายค่ารักษาได้ถึง 3 เท่า ขณะที่ค่ารักษาพยาบาล วันนอนโรงพยาบาล ความซับซ้อนของโรคที่เจ็บป่วยทั้งสองกลุ่มแตกต่างกันอย่างมีนัยสำคัญทางสถิติ กล่าวคือ กลุ่มที่จ่ายค่ารักษาไม่ได้ มีค่ารักษาพยาบาลแพงกว่า ป่วยเป็นโรคที่รุนแรงกว่า และนอนโรงพยาบาลนานกว่า ผู้ป่วยทางศัลยกรรมกระดูก ผู้ป่วยเด็ก และศัลยกรรมทั่วไปนอนโรงพยาบาลโดยเฉลี่ยนานกว่าผู้ป่วยอื่นๆ และมีแนวโน้มเป็นผู้ป่วยที่จ่ายไม่ได้ โดยเฉลี่ย ผู้ป่วยที่จ่ายค่ารักษาเองสามารถจ่ายค่ารักษาต่อครั้งผู้ป่วยในได้ที่ประมาณร้อยละ 6 ของรายได้ต่อปี และพบว่าในกลุ่มที่จ่ายค่ารักษาไม่ได้ กว่าร้อยละ 58 ของค่ารักษาพยาบาลทั้งหมดได้รับการช่วยเหลือสงเคราะห์ ยังพบว่า ประมาณร้อยละ 7.5 ของผู้ป่วยที่จ่ายค่ารักษาเอง มีค่าใช้จ่ายในการนอนโรงพยาบาลครั้งนี้ เกินกว่าร้อยละ 15 ของรายได้ต่อปี และไม่พบว่ามีกลุ่มวินิจฉัยโรคใด (DRGs) ใดอย่างชัดเจนว่า เป็นสาเหตุทำให้ผู้ป่วยต้องเผชิญกับปัญหาจ่ายค่ารักษาพยาบาลไม่ได้

ผู้ป่วยที่ติดตามศึกษาแบบอนุกรมเวลา มีทั้งหมด 144 ตัวอย่าง (ร้อยละ 8.3) พบว่า ลำดับการใช้แหล่งเงินเหล่านี้มีหลากหลายรูปแบบ ทั้งนี้ขึ้นกับวงเงินค่ารักษาที่โรงพยาบาลเรียกเก็บ หรือวงเงินค่ารักษาที่ผู้ป่วยต้องจ่าย และจำนวนครั้งของการจ่ายค่ารักษา อย่างไรก็ตาม พบว่า ร้อยละ 61 ของตัวอย่างจ่ายจากแหล่งเงินภายในครัวเรือนอย่างเดียวตลอดระยะเวลาที่นอนโรงพยาบาล ประมาณ 10% จ่ายด้วยแหล่งเงินภายในครัวเรือนก่อนแล้วตามด้วยการขอลดหย่อนค่ารักษาในวันจำหน่ายจากโรงพยาบาล ประมาณ ร้อยละ 5 เริ่มต้นด้วยการผ่อนผัน ขอค้างจ่ายก่อน แล้วสามารถจ่ายได้ด้วยแหล่งเงินภายในครัวเรือนในท้ายสุด ประมาณร้อยละ 5 จ่ายด้วยแหล่งเงินภายในครัวเรือนก่อน แล้วตามด้วยการขอสังคมสงเคราะห์ ประมาณร้อยละ 20 ที่เหลือใช้แหล่งเงินจากหลายแหล่งคละกัน

งานวิจัยที่สอง : การสำรวจผู้ป่วยที่มีปัญหาการจ่ายค่ารักษา ต้องขอสังคมสงเคราะห์ (FCI-2 Study)

กลุ่มตัวอย่าง คือผู้ป่วยที่ต้องจ่ายเงินเอง และมีปัญหาในการจ่ายเงิน โดยต้องขอสงเคราะห์ค่ารักษาในโรงพยาบาลที่ศึกษา โดยคาดหวังว่า จะพบผู้ป่วยที่มีปัญหาในการจ่ายรุนแรง และกรณีการเจ็บป่วยจนล้มละลายมากขึ้น ด้วยเหตุที่ในการวิจัยนี้ ได้นิยามผู้ป่วยที่มีปัญหาในการจ่ายค่ารักษาและต้องขอสงเคราะห์ เป็นผู้ป่วยที่เข้าข่ายการเจ็บป่วยจนล้มละลาย ดังนั้น กลุ่มตัวอย่างนี้ เป็นผู้ป่วยที่มีปัญหาในการจ่ายอยู่แล้ว ทำให้มีโอกาสศึกษาลักษณะจำเพาะของผู้ที่เจ็บป่วยจนล้มละลายมากขึ้น

โรงพยาบาลที่ศึกษา_คือ โรงพยาบาลหาดใหญ่และโรงพยาบาลสงขลานครินทร์

ผลการศึกษา

ตัวอย่างสำหรับการวิจัยเชิงปริมาณ จำนวนทั้งหมด 300 คน มาจากโรงพยาบาลหาดใหญ่ 201 คนและโรงพยาบาลสงขลานครินทร์ 99 คน ระดับการศึกษาของผู้ป่วย อาชีพ อยู่ในสถานภาพต่ำ รายได้ของครอบครัวส่วนใหญ่ปานกลางถึงยากจน ผู้ป่วยส่วนใหญ่เป็นผู้ชาย อายุค่อนข้างมาก และอาศัยอยู่ในชนบท แหล่งเงินแรกที่ใช้ในการจ่ายค่ารักษาพยาบาล มาจากการหยิบยืมเงิน กว่าร้อยละ 36 และร้อยละ 62 ของกลุ่มตัวอย่างต้องใช้แหล่งเงินจากเงินยืม เป็นส่วนหนึ่งของค่ารักษาพยาบาลครั้งปัจจุบัน ผู้ป่วยที่จ่ายค่ารักษาพยาบาลไม่ได้เลยหรือได้บางส่วนนั้น ส่วนใหญ่เป็นผู้ป่วยศัลยกรรมและผู้ป่วยเด็ก พบว่าผู้ป่วยศัลยกรรม โดยเฉพาะศัลยกรรมกระดูกมีค่ารักษาค่อนข้างสูง ขณะที่ผู้ป่วยเด็กโดยเฉลี่ย นอนโรงพยาบาลนาน เมื่อเทียบกับผู้ป่วยประเภทอื่น ในแง่ผลลัพธ์ของการรักษา สถานภาพขณะจำหน่ายของผู้ป่วยสูตินรีเวชกรรม และผู้ป่วยเด็ก ส่วนใหญ่มีอาการดีขึ้นมาก ขณะที่ผู้ป่วยศัลยกรรมมีโอกาสเสียชีวิตสูง โดยเฉลี่ย ผู้ป่วยกลุ่มนี้สามารถจ่ายค่ารักษาได้ที่ประมาณร้อยละ 11 ของรายได้ต่อปี โดยร้อยละ 63 ของค่ารักษาพยาบาลทั้งหมดได้รับการช่วยเหลือจากสังคมสงเคราะห์ ไม่พบว่ามีกลุ่มวินิจฉัยโรคใด (DRGs) ใดอย่างชัดเจนว่า เป็นสาเหตุทำให้ผู้ป่วยต้องเผชิญกับปัญหาจ่ายค่ารักษาพยาบาลไม่ได้

ผลการวิจัยเชิงคุณภาพ จากตัวอย่าง เพศชาย 26 คน เพศหญิง 12 คน ครึ่งหนึ่งมีอายุระหว่าง 31-59 ปี และมีจำนวนสมาชิกในครอบครัวตั้งแต่ 4 คนขึ้นไป ส่วนมากมีรายได้เฉลี่ยต่อเดือน น้อยกว่า 3000 บาท (9/38) รองลงมา คือรายได้อยู่ระหว่าง 3000-4999 บาท (8/38) และไม่มีรายได้ (8/38) ตามลำดับ แหล่งรายได้ ส่วนใหญ่มาจากการรับจ้าง (20/38) ไม่มีเงินออม (30/38) และที่ดิน หรือบ้านเป็นของตนเอง (29/38) โรคที่เจ็บป่วย เรียงตามลำดับคือ โรคที่เกิดจากอุบัติเหตุ (15/38) โรคติดเชื้อ (9/38) และโรคมะเร็ง (8/38) ผลการรักษา เรียงตามลำดับคือ หาย (18/38) ไม่หาย หรือพิการ (13/38) และเสียชีวิต (7/38) ผู้ป่วยส่วนใหญ่ ใช้เงินสด หรือเงินออม เป็นแหล่งเงินแรกในการจ่ายค่ารักษา ก่อนที่จะหาเงินจากแหล่งอื่น เมื่อเงินสด หรือเงินออมไม่พอ การขาย/

จำนำ/ จำนองทรัพย์สิน การกู้ยืม และขอรับการช่วยเหลือจากญาติพี่น้อง รวมถึงนายจ้าง จะเป็นแหล่งเงินอันดับถัดไปที่มีบทบาทสำคัญต่อความสามารถในการจ่ายเงิน และการจัดการต่อภาระค่ารักษาฯในบริบทสังคมไทย การรับความช่วยเหลือทางการเงินจากชุมชน หรือคนอื่นที่ไม่ใช่ญาติโดยตรง โดยการจัดเลี้ยงน้ำชา / ขนมจีน พบได้ไม่บ่อย ต้องเป็นกรณีพิเศษที่ต้องใช้ค่ารักษาจำนวนมาก โดยมีเงื่อนไขว่าคน/ครอบครัวที่ประสบปัญหาต้องเป็นคนดี เมื่อไม่สามารถหาเงินอีกแล้ว การขอสังคมสงเคราะห์จะเป็นที่พึ่งสุดท้าย มีข้อค้นพบว่า ส่วนใหญ่ครอบครัวที่มีปัญหา ไม่ทราบว่ามีระบบสังคมสงเคราะห์ในโรงพยาบาล จนกว่าเจ้าหน้าที่สังคมสงเคราะห์ จะให้คำแนะนำ เนื่องจากค้างจ่ายโรงพยาบาลมากแล้ว (27/38) ทำให้ครอบครัวต้องพยายามดิ้นรนหาทางแก้ปัญหาเอง อย่างไรก็ตาม สังคมสงเคราะห์ ช่วยให้ครอบครัวไม่ต้องเป็นหนี้มากขึ้นเนื่องจากภาระค่ารักษา และไม่ต้องสูญเสียทรัพย์สินก่อนเวลาอันควร นอกจากการเจ็บป่วยจะมีผลกระทบต่อสภาวะการเงินของครอบครัวแล้ว ผลของการเจ็บป่วยยังก่อให้เกิดการสูญเสียของสมาชิกในครอบครัว ความพิการ การขาดรายได้ และการต้องหาเงินชำระหนี้ หรือไถ่ถอนทรัพย์สินที่ไปจำนำจำนอง

สรุปผลการศึกษาและอภิปรายผล

งานวิจัยแรก พบว่าความสามารถในการจ่ายของผู้ป่วยมีความแตกต่างกันตามประเภทของโรงพยาบาลที่เลือกใช้บริการ กล่าวคือผู้ป่วยที่ใช้บริการโรงพยาบาลเอกชน เกือบทั้งหมดไม่มีปัญหาการจ่ายค่ารักษาพยาบาล ขณะที่ผู้ป่วยในโรงพยาบาลของรัฐมีปัญหาร้อยละ 23.8-36.8 โดยร้อยละของผู้ป่วยที่ไม่สามารถจ่ายค่ารักษาได้ทั้งหมดหรือบางส่วน จะแปรผันไปตามศักยภาพ หรือขีดความสามารถในการดูแลผู้ป่วยของโรงพยาบาลของรัฐ รายได้ของครอบครัว ระดับการศึกษาและอาชีพ เป็นปัจจัยที่กำหนดว่า ครอบครัวจะมีความสามารถในการจ่ายค่ารักษาเพียงไร ส่วนค่ารักษาพยาบาล วันนอนโรงพยาบาล และความซับซ้อนของโรคที่เจ็บป่วย ไม่ได้เป็นปัจจัยที่เกี่ยวข้องสัมพันธ์โดยตรงกับความสามารถในการจ่ายของครัวเรือน ขณะที่สัดส่วนของค่ารักษาที่โรงพยาบาลเรียกเก็บต่อรายได้ทั้งปีของครัวเรือน น่าจะเป็นดัชนีที่สำคัญในการคาดคะเนว่า เมื่อไร ครัวเรือนเริ่มไม่สามารถจ่ายค่ารักษาพยาบาลได้อีก กลุ่มที่จ่ายค่ารักษาได้นั้น นอกจากมีความสามารถในการจ่ายค่ารักษาพยาบาลสูงกว่าแล้ว ยังมีรายได้ครัวเรือน การศึกษา และสถานภาพอาชีพสูงกว่าเมื่อเปรียบเทียบกับกลุ่มที่จ่ายค่ารักษาไม่ได้ เมื่อเปรียบเทียบผลการศึกษาในงานวิจัยทั้งสอง พบว่าผู้ป่วยซึ่งจ่ายค่ารักษาไม่ได้บางส่วน หรือทั้งหมด มีฐานะยากจน ร้อยละ 15 (FCI-1 Study) และร้อยละ 22 (FCI-2 Study) มีรายได้ครัวเรือนต่ำกว่า 2800 บาทต่อเดือน แหล่งเงินแรกที่ใช้จ่ายในการจ่ายค่ารักษาพยาบาล มาจากการหยิบยืมเงินถึง ร้อยละ 8 (FCI-1 Study)และ 36 (FCI-2 Study) ตามลำดับ สัดส่วนค่ารักษาที่โรงพยาบาลรัฐ ต้องช่วยเหลืออุดหนุน สูงถึงร้อยละ 58 และ 63 ของค่ารักษาที่โรงพยาบาลเรียกเก็บในงานวิจัยทั้งสองตามลำดับ กลุ่มวินิจฉัยโรคร่วม (Diagnosis-Related-Group: DRG) ที่ต้องใช้ทรัพยากรในการรักษามาก มีแนวโน้มพบบ่อย ในกลุ่มผู้ป่วยที่จ่าย

ค่ารักษาไม่ได้ แต่ไม่พบกลุ่มวินิจฉัยโรคร่วมใด ที่เกิดขึ้นบ่อย หรือเป็นสาเหตุของปัญหาการจ่ายค่ารักษาไม่ได้

ถ้าให้นิยาม การเจ็บป่วยจนล้มละลาย คือ ผู้ป่วยที่มีปัญหาไม่สามารถจ่ายค่ารักษาได้ แสดงตัวขอสังคมสงเคราะห์ จะมีอุบัติการณ์ของการเจ็บป่วยจนล้มละลาย ประมาณ 21.5 ของผู้ป่วยในที่ต้องจ่ายเงินเอง อย่างไรก็ตาม การนิยามในนัยนี้ ไม่ค่อยรัดกุม เนื่องจากผู้ป่วยจำนวนมาก อาจไม่เข้าเกณฑ์จำเพาะของการล้มละลาย การจ่ายไม่ได้ อาจเป็นเพราะไม่มีสภาพคล่องในระหว่างนั้น หรือไม่สามารถขอความช่วยเหลือจากแหล่งเงินอื่น เพราะเหตุผลทางเศรษฐกิจ หรือผู้ป่วยบางคนที่เข้าเกณฑ์ล้มละลาย คือเป็นผู้ป่วยที่มีปัญหาการเงิน แต่ไม่แสดงตัวเพื่อขอสังคมสงเคราะห์ ถ้าถือว่า ผลกระทบต่อครัวเรือน ที่ลูกต้องออกจากโรงเรียนเนื่องจากภาระค่ารักษาพยาบาล เป็นหลักฐานของการเจ็บป่วยจนล้มละลาย ก็จะมีอุบัติการณ์ของการเจ็บป่วยจนล้มละลายในจังหวัดสงขลาอยู่มีค่าประมาณ 3.6 ต่อพันประชากรผู้ป่วยในที่ต้องจ่ายเงินเองจากกระเป๋าครัวเรือน หรือถ้าถือว่า การต้องเป็นหนี้สิน เป็นหลักฐานของการเจ็บป่วยจนล้มละลาย ก็จะมีอุบัติการณ์ของการเจ็บป่วยจนล้มละลายในจังหวัดสงขลาอยู่ที่ประมาณ 48.5 ต่อพันประชากรผู้ป่วยในที่ต้องจ่ายเงินเอง อย่างไรก็ตาม การนิยามในนัยนี้ อาจมีข้อโต้แย้งได้ เนื่องจากการที่เด็กต้องออกจากโรงเรียน อาจมีได้หลายสาเหตุ และเมื่อไรถึงจะตัดสินว่า ครอบครัวมีหนี้สิน จนถึงขั้นล้มละลาย หรือเกินกว่าที่ครอบครัวสามารถจ่ายได้ ถ้าถือว่า เมื่อไรที่ครัวเรือนต้องรับภาระค่าพยาบาล เกินกว่าร้อยละ 15 ของรายได้เฉลี่ยต่อปี เป็นค่าใช้จ่ายที่อาจทำให้ครัวเรือนประสบภาวะล้มละลายทางเศรษฐกิจแล้ว มีผู้ป่วยเข้าเกณฑ์ล้มละลาย ประมาณร้อยละ 7.5 ของผู้ป่วยในที่จ่ายเงินเอง การนิยามในนัยนี้ ก็อาจมีข้อโต้แย้งได้ เนื่องจากในข้อเท็จจริง ผู้ป่วย/ครอบครัวกลุ่มนี้ นอกจากมีรายได้แล้ว ยังมีความสามารถหาแหล่งเงินอื่นมาจ่ายค่ารักษาพยาบาลได้ โดยเฉพาะการขอรับความช่วยเหลือจากเครือญาติ และเครือข่ายทางสังคม แต่ข้อดีของการนิยามการเจ็บป่วยจนล้มละลายตามนัยนี้คือ สามารถค้นหาผู้ป่วย/ครอบครัวที่เข้าเกณฑ์ได้ง่าย ง่ายต่อการวางแผน และจัดการ

ถ้าใช้ข้อมูลในการศึกษาวิจัยครั้งนี้ (FCI-1 Study) คาดประมาณ ค่าใช้จ่ายทั้งหมดที่โรงพยาบาลของรัฐ หรือรัฐบาลต้องใช้เพื่อช่วยเหลือครอบครัวผู้ป่วยที่จ่ายค่ารักษาเอง แต่มีไม่พอจ่าย ไม่ให้ประสบปัญหาล้มละลายทางเศรษฐกิจในจังหวัดสงขลา พบว่า ขณะนี้ โรงพยาบาลของรัฐต้องให้ความช่วยเหลือ ประมาณ 3.45 ล้านบาทต่อปี ถ้าถือว่า ในผู้ป่วยกลุ่มนี้ ครัวเรือนไม่ควรรับภาระค่ารักษาพยาบาลต่อครั้งนอนโรงพยาบาล เกินร้อยละ 15 ของรายได้ต่อปี โรงพยาบาลของรัฐ หรือรัฐบาล ก็จะมีภาระรายจ่ายเพิ่มขึ้นเป็น 6.56 ล้านบาทต่อปี สำหรับสร้างหลักประกันสุขภาพให้ผู้ป่วยที่จ่ายค่ารักษาเอง จำนวนทั้งหมด 355321 คน(ร้อยละ 30 ของประชากรทั้งหมดข้อมูลปี พ.ศ. 2541)

อย่างไรก็ตาม แม้ว่าขณะนี้ประเทศกำลังเผชิญกับภาวะวิกฤตเศรษฐกิจ สถานะการณ์ของการเจ็บป่วยจนล้มละลายในประชากรที่ไม่มีหลักประกันสุขภาพในจังหวัดสงขลา ดูเสมือนว่าไม่รุนแรงนัก ทั้งนี้ อาจเป็นไปได้ เนื่องจากครัวเรือน สามารถคาดประมาณความสามารถในการจ่ายค่า

รักษาพยาบาลได้ดีพอสมควร เมื่อไปเลือกใช้บริการ ตัวอย่างเช่น ในกรณีไปรักษาโรงพยาบาลเอกชน เมื่อหมดเงิน หรือเริ่มไม่สามารถจ่ายค่ารักษาได้อีก ก็จะขอออกจากโรงพยาบาลก่อนกำหนด หรือขอย้ายมาโรงพยาบาลของรัฐ เพื่อลดค่าใช้จ่าย ในกรณีที่รักษาในโรงพยาบาลรัฐ เมื่อเริ่มไม่มีความมั่นคงทางการเงิน หรือไม่สามารถจ่ายค่ารักษาได้อีก ก็สามารถขอปรึกษาเจ้าหน้าที่สังคมสงเคราะห์ ขอลดหย่อนค่ารักษาให้จ่ายในวงเงินที่ครัวเรือนพอที่จะสามารถรับภาระได้

ข้อเสนอแนะเชิงนโยบาย

1. เนื่องจากผู้ป่วยกลุ่มที่จ่ายเงินเอง เพราะไม่มีหลักประกันสุขภาพ แม้ว่าไม่ได้ยากจนตามเกณฑ์ผู้มีรายได้น้อย ประชากรกลุ่มนี้โดยเฉพาะที่มีปัญหาการจ่ายค่ารักษาพยาบาล ส่วนใหญ่เป็น ครอบครัวที่มีระดับการศึกษาน้อย รายได้ครัวเรือนปานกลางถึงต่ำ มีอาชีพรับจ้าง มีโอกาสประสบกับปัญหาจ่ายค่ารักษาพยาบาลไม่ได้ หรือสภาวะเจ็บป่วยจนล้มละลาย <u>สมควรที่รัฐควรขยายความครอบคลุมในหลักประกันสุขภาพ แก่ประชากรกลุ่มนี้และให้ความสำคัญเป็นอันดับต้นๆ</u> อนึ่ง จากงานวิจัยพบว่า ผู้ป่วยซึ่งจ่ายค่ารักษาไม่ได้บางส่วน หรือทั้งหมด มีฐานะยากจน ร้อยละ 15 (FCI-1 Study) และ ร้อยละ 22 (FCI-2 Study) มีรายได้ครัวเรือนต่ำกว่า 2800 บาทต่อเดือน หรือต่ำกว่าเส้นแบ่งความยากจน สมควรได้สิทธิจากสวัสดิการรักษาพยาบาลผู้มีรายได้น้อย แต่ไม่ได้รับสิทธิ แสดงว่า เกณฑ์ที่ใช้ในการคัดเลือกผู้มีสิทธิยังมีความบกพร่องอยู่
2. การใช้ระบบประกันสุขภาพโดยระดมเงินจากการเก็บค่าเบี้ยประกันรายปี น่าจะมีความเหมาะสมมากกว่า การระดมเงินจากระบบภาษีในการหาเงินเพื่อจัดประกันสุขภาพให้ครอบคลุมประชาชนที่ยังไม่มีหลักประกัน ทั้งนี้ การเรียกเก็บภาษีเพิ่ม จะกระทบคนส่วนใหญ่ของประเทศ อย่างน้อยคนกลุ่มนี้ซึ่งยังไม่หลักประกันใดๆ ส่วนใหญ่ยังพอมีความสามารถในการจ่ายค่าเบี้ยประกันได้ในระดับหนึ่ง จึงมีความเป็นไปได้ที่จะขยายหลักประกัน ไม่ว่าจะเป็นระบบประกันสุขภาพโดยสมัครใจ โดยการขายบัตรประกันสุขภาพ ของกระทรวงสาธารณสุข หรือสนับสนุนให้ประกันเอกชนมีบทบาทมากขึ้น หรือใช้ระบบประกันสุขภาพภาคบังคับที่มีอยู่ โดยขยายโครงการประกันสังคมไปสู่ ผู้ประกอบอาชีพส่วนตัว และเกษตรกรในชนบท
3. อนึ่ง เพื่อกระตุ้นประสิทธิภาพของระบบประกันสุขภาพที่มีอยู่ ประกันสุขภาพที่รัฐให้การอุดหนุนทุกโครงการ สมควรที่จะกำหนดให้ชัดเจนว่า จะครอบคลุมเฉพาะชุดสิทธิประโยชน์บริการขั้นพื้นฐานเท่านั้น ส่วนบริการราคาแพง บริการที่เน้นความสะดวกสบาย และไม่จำเป็น สมควรที่จะแยกไว้ต่างหาก โดยครอบคลุมในระบบประกันสุขภาพอื่น
4. สมควรที่จะมีการเสนอให้มีหลักประกันสุขภาพสำหรับการเจ็บป่วยราคาแพง โดยให้ประชาชนทุกคนมีส่วนร่วมรับผิดชอบต่อค่ารักษาพยาบาลที่เกิดขึ้น โดยร่วมกันจ่ายค่าเบี้ยประกัน ร่วมกันเฉลี่ยความเสี่ยง โดยจัดการในลักษณะประกันสุขภาพภาคบังคับ

5. จากข้อมูลวิจัยพบว่า การที่โรงพยาบาลรัฐต้องช่วยเหลือผู้ป่วยที่ไม่สามารถจ่ายค่ารักษาทั้งที่จ่ายได้บางส่วนและจ่ายไม่ได้เลย โดยผ่านระบบสังคมสงเคราะห์นั้น เป็นเกราะป้องกันที่ดีพอควรทำให้ผู้ป่วยไม่ถึงกับต้องอยู่ในสภาวะล้มละลาย (FCI) ฉะนั้น ควรพิจารณาส่งเสริมระบบนี้ให้มีอยู่ต่อไปเพื่อช่วยเหลือผู้ป่วยที่ไม่สามารถจ่ายค่ารักษา ควบคู่กับระบบประกันสุขภาพ ในกรณีที่ยังไม่มีหลักประกันสุขภาพถ้วนหน้า อย่างไรก็ตาม การที่โรงพยาบาลรัฐ ต้องนำงบประมาณผู้มีรายได้น้อยซึ่งได้ไม่พออยู่แล้วมาจุนเจือค่าใช้จ่ายผู้ป่วยกลุ่มนี้ แม้ว่าบางแห่งจะมียอดเงินบริจาคมาอุดหนุนค่าใช้จ่ายส่วนนี้บ้าง แต่ก็ไม่พอเพียง ทำให้เกิดปรากฏการณ์ การอุดหนุนข้ามกลุ่ม (cross-subsidization) โดยนำรายได้จากผู้ที่สามารถจ่ายได้มาจุนเจือผู้ป่วยที่ไม่สามารถจ่าย จึงควรมีการศึกษาต่อไปในรายละเอียดเกี่ยวกับความสามารถในการ cross subsidize ของโรงพยาบาลรัฐระดับต่างๆ
6. แม้ว่าจะมีการช่วยเหลือทางการเงินที่จัดให้ในโรงพยาบาลของรัฐโดยผ่านการพิจารณาของนักสังคมสงเคราะห์แล้ว จากงานวิจัยพบว่า กระบวนการช่วยเหลือในโรงพยาบาลมักจะล่าช้าไป ผลของภาระค่ารักษาพยาบาล ก่อให้เกิดผลกระทบต่อครอบครัว เช่นต้องดิ้นรนทำมาหากิน เพื่อไถ่ถอนจำนอง เพื่อจ่ายดอกเบี้ยเงินกู้ หรือเด็กต้องออกจากโรงเรียนกลางคัน สมควรที่จะมีการศึกษาถึงประสิทธิภาพของระบบการให้ช่วยเหลือค่ารักษาพยาบาล โดยผ่านกลไกของนักสังคมสงเคราะห์ และมีมาตราการทางสังคม ช่วยเหลือครอบครัวที่มีปัญหาหลังจากที่ได้จำหน่ายออกจากโรงพยาบาล

Executive Summary

This current research aims to develop basic knowledge about family's ability to pay and financially catastrophic illness (FCI). At present, 76 percent of total population are covered by one of the existing health insurance schemes. Among the insured, not all the schemes state clearly about maximum liability of benefits package. It does not guarantee that the insured will be free from financially catastrophic illness. Moreover, the uninsured who pay the out-of-pocket when seeking care have a certain probability to incur a large medical expense relative to their ability to pay. FCI is highly associated with family's ability to pay. Ability to pay for health care expenditures is lack of the information about its determinants. Some socio-demographic factors such as family income may be related to ability to pay but this has never been documented. There are evidences that user fees are unaffordable by the poor who are sensitive to price and they will reduce utilization proportionately more than the rich. The understanding about family's ability to pay and its measure is important for health planning and financing among out-of-pocket patients. Since the insured have less opportunity to be FCI case, this research emphasizes on family's ability to pay and FCI among the uninsured groups. This baseline information will help for developing policy options for FCI in Thai society

The objectives of the study are: 1) to describe family's ability to pay for hospital charges, 2) to find out the relationship between family's ability to pay and socio-demographic determinants, 3) to analyse financial coping strategies for the costs of illness, 4) to study disease profiles, hospital charges, length of stay, affordable out-of-pocket expenses, and clinical outcome in the current admission and, to estimate the incidence of financially catastrophic illness among out-of-pocket in-patients in Songkhla Province. Methodology includes both quantitative and qualitative methods.

This research is divided into two studies: FCI-1 Study and FCI-2 study. FCI-1 Study (sample are out-of-pocket Songkhla in-patients) comprises of a hospital-based survey and a time-series study, while FCI-2 Study (sample are out-of-pocket Songkhla in-patients asking for fee exemption) comprises of a hospital-based survey and a qualitative in-depth interview.

FCI-1 Study , hospital-based study results: A total of 1731 inpatients was recruited from November 1998 to April 1999 in 6 types of hospitals. There was no inability-to-pay problem among those who sought care at private hospital while those who sought care at government hospitals such problem varied from 23.8-36.8 percent. Ability to pay was highly associated with education level, occupation, and family income. Approximately 15 percent of total subjects had their family income less than 2800 Baht / month. Life-table method revealed that half of the sample (50%) could afford hospital charges at expense of 14700 Baht. 89 percent used cash or mobilized savings for paying the first bill while 8 percent had to borrowed cash. About 21 percent of total used borrowing as one of finance sources in the current admission. Our findings show that family income, patient's education and occupation in unable-to-pay cases were lower than those in able-to-pay. Charge as percent of income in unable-to-pay was 3 times higher than able-to-pay group. Case-mix index, length of hospital stay and charges were statistically different between able vs. unable-to-pay group. Orthopaedics, paediatrics and surgical cases stayed longer than others with a tendency

to be unable-to-pay cases. On average, affordable out-of-pocket expenses paid for one episode of admission were about 6 percent of gross annual income. The hospitals, on average, subsidized 58 percent of total charges to unable-to-pay cases. The incidence of FCI was 7.5 percent of total out-of-pocket admissions if defined FCI as out-of-pocket greater than 15% of income. The incidence of FCI events was 3.6 per 1000 out-of-pocket admissions and 48.5 per 1000 out-of-pocket admissions if considered school leaving of the children and indebtedness as criterion of financial catastrophe respectively.

Time-series study results: A sample of 144 cases was sub-selected from FCI-1 hospital-based study. Sixty-one percent used intra-household resources to pay for all hospital bills. Ten percent paid by intra-household resources first and then asked for discount at the discharged day. Nearly 5 percent postponed the bill and then used intra-household resources to pay all. Five percent used intra-household resources to pay some parts and asked for fee exemption for the remaining.

FCI-2, hospital-based study results: 300 inpatients who asked for exemption in Hat-Yai and PSU Hospital between May and June 1999 were studied. Index patients had rather low family income, low education, and poor employment status. They tended to be old male, and resided in rural area. Approximately 22 percent of total subjects had their family income less than 2800 Baht / month. 36 percent borrowed cash to pay the first bill. 62% of total used borrowing as one of finance sources in current admission. Orthopedics and surgical case were more costly while paediatric cases had longer hospital stay as compared to others. OBGYN and pediatric cases had a good clinical outcome while surgical cases had rather poor outcome. On average, affordable out-of-pocket expenses paid for one episode of admission among study cases were about 11 percent of gross annual income. The hospitals, on average, subsidized 63 percent of total charges to unable-to-pay cases.

FCI qualitative findings: 38 in-patients who were Songkhla residents, whose admission incurred medical expenses above 40000 Baht, and declared not being able to pay the bills were in-depth interviewed between April and June 1999. Several patterns of resource mobilization to pay for the bills were captured. Cash / savings was the most common resource use. Usually, more than one strategies were used to cope with the costs of illness. Family networks played an important role if cash / savings was not available. Additional resources from assets sale, loans, and community support were also sought. Taking a loan was limited because economic crisis led to difficulty to earn money or lose confidence of capacity to pay back. The patient / family who got community support should be guaranteed as a good socialized person. If any resources were exhaustive, asking support from the hospitals were the last option. However, exemption policies were not well known by general population. A large number of families did not know whether the fee exemptions existed until they were notified by medical social workers. Not only the financial implication, but also some social impacts hit to the families. Current illness led to loss of income earning capacity in the families, in particular, financial consequences were more severe if principal income earner was a case.

In conclusion, out-of-pocket patients are mixtures of upper, middle, and lower socioeconomic status. Family's ability to pay depends not only on SES but also on coping strategies adopted to deal with the costs of illness. Higher SES and strong

kinship and social networks are better ability to pay for the bills. The incidence of FCI varied depending on the definitions.
Financial requirements for protection against FCI among out-of-pocket admissions in Songkhla were computed. Current hospital subsidization for those who were unable to pay was about 3.45 million Baht per year. If the expenses were considered that the patients should not pay more than15 percent of gross annual income for a single admission, the government or the hospitals had to subsidise 6.56 million Baht per year.To raise 7 million to protect FCI, every currently uninsured should contribute about 20 Baht for yearly premium and pay user charges of not more than 15 percent of annual family income as deductible amount for each admission.

Policy recommendations:
1) Extended coverage of health insurance and welfare schemes to the uninsured are the most important issues.
2) It is feasible to increase insurance coverage through the existing insurance schemes, in particular, in the umbrella of the Social Security Scheme or the Health Card Project.The uninsured were mixtures of high, middle, and low income. They were able to afford reasonable health insurance premium for covering expensive medical care. The government takes responsibility for subsidizing the indigent who are unable to pay their premium. The subsidy is spent from the general tax. In this way, insurance functions could guarantee access to health care and financial protection against the risk of incurring expensive medical care.
3) The decision should be made regarding what benefits should be covered in the existing publicly organized health insurance and medical welfare system, and under universal coverage policy whether basic essential package, catastrophic and expensive chronic illnesses only, or comprehensive care is covered.
4) Catastrophic health insurance is appropriate to implement for providing both access to health care and financial protection especially for expensive medical care if comprehensive package of medical care is not possible.
5) The government hospitals play a significant role to support those who are unable to pay for the bills. It is also a good safety net to prevent income / asset loss among those who face with financial insecurity. Thus, fee exemption system should be available whenever universal coverage is not achieved. At the moment, the appropriateness of this exemption policy and the effectiveness of the waiving mechanism are questioned. Therefore, the policy and the role of cross subsidization in the government hospitals should be evaluated.
6) Among those who need financial assistance, attempts should be made to assist the families to overcome financial consequence from FCI, not just waiving the bills. Particularly, monitoring and assistance measures to the families are needed to avert the negative consequences.

Chapter 1: INTRODUCTION

Background

Current research is intended to fulfill the gap of knowledge about family's ability to pay (ATP) for health care, financial coping strategies in dealing with the costs of treatment, and the incidence of financially catastrophic illness (FCI) among out-of-pocket in-patients. These baseline information are crucial for the development of catastrophic health insurance in the future. The research comprises two studies; FCI-1 and FCI-2 study, using both quantitative and qualitative methods.
This report is divided into 5 chapters

1. Chapter One: introduction. The general background of health insurance system in Thailand is reviewed. The gap of knowledge related to family's ability to pay and catastrophic illness which need to research, research questions, objectives and study setting are stated.
2. Chapter Two: FCI-1 study (specific objectives, methodology and results)
3. Chapter Three: FCI-2 study (specific objectives, methodology and results)
4. Chapter Four compares some important findings of two studies
5. Chapter Five concludes the results according to objectives, discusses and introduces policy recommendation from the research, and presents the limitation of the study and further research.

The section following this introduction examines the situation about existing health insurance coverage for Thai population. Then a presentation about equity of access to health services, and the reviews of literature relating to the research topics will be in the next section. Research questions and the objectives of this study are included at the end of this chapter

Literature Reviews

1. Overview of health insurance system in Thailand

Social security system can be achieved through one or more of these three basic approaches [1]: (1) public assistance to the indigent, (2) social service or public service to all citizens and, (3) social insurance by pooling resources and risks between members in a society. Health security in Thailand is based on a mixture of the first and the third approaches. To increase accessibility of health services for the Thai population, there were several insurance schemes and public assistance in health. The existing health insurance and welfare schemes in Thailand can be categorized into 4 main groups [2]: (1) public assistance to the indigent including the poor: Low Income Card Scheme (LICS), the elderly, the veterans, religious leaders, and children under twelve, (2) health benefit for government employees: Civil Servants Medical Benefit Scheme (CSMBS), (3) compulsory health insurance for formal sector workers: Social Security Scheme (SSS) and Workmen Compensation Scheme (WCS) and, (4) voluntary health insurance: Private Indemnity Insurance (PI) and Voluntary Health Card Scheme (VHCS). Approximately 76% of the population is covered under one of

these health insurance programs, the remaining 24% must either pay out-of-pocket fee for service or receive free / subsidized services from public health facilities. Without insurance coverage, financial accessibility to the services is determined by family / household income and wealth. Ability to pay for health care costs is being concerned. The estimated insurance coverage was increased from 67.8% of total Thai population in 1995 [1] to 76% of total in 1997 [3] The biggest scheme was the low income which covered 45% of total population (27.0 million) while the second biggest was CSMBS covered 11% of total population (6.6 million). These health insurance and welfare schemes varies widely in the scheme nature, target population, benefit package, funding managers, source of funds, provider payment mechanism and government subsidy. The variety leads to the issue of efficiency and equity between the schemes.

1.1) Benefit package

Each scheme has set up its own packages that seem to cover every necessary services. The low income, elderly and children under twelve are eligible to get free services only through public health facilities both ambulatory care and hospitalization. The benefits are nearly the same as CSMBS except the following: hospitalization in private hospitals , private accommodation in public hospital, and annual physical check up. CSMBS covers current civil servants and permanent employees, pensioners and their parents, spouses, and up to 3 legal children. Most of non-work related illnesses or injuries and maternal care are covered by Social Security Scheme except 15 conditions in the form of exclusive list. Both SSS and WCS can seek care either public or private hospitals. All of expenditures for necessary medical care can be reimbursed but not more than 30000 Baht for the WCS. Health Care Scheme operates under the MOPH facilities exclusively, there is no limitation of medical benefits and numbers of visit.. However, the patients had to consult the lower level facilities before being referred to higher health facilities.

1.2) Medical expenditure and government subsidy in each scheme

There are great differences in medical expenditure per capita among the schemes. The most expensive one is CSMBS, 1781 Baht per capita per year. The average is SSS, 712 Baht per capita per year. The public assistance schemes and health care scheme are the cheapest scheme. The government subsidy for CSMBS is 8 times higher than for the indigent, while SSS is nearly 5 times higher than for the indigent [1.]

1.3) Patterns of health services utilization related to insurance coverage

Low income rural people as well as the urban poor, mainly use public facilities while higher income rural and urban dwellers mainly use private facilities. There are a number of provider payment mechanisms in the existing insurance schemes. These mechanisms lead to observing higher utilization rates under fee-for-service (CSMBS and PI), and lower rates of service under capitation (SSS and VHCS)[4].

1.4) Problem of each scheme

Inadequacy of annual government budget to provide free medical care for the public assistance schemes is critical for public health facilities. These lead them to find additional expenditure by cross-subsidization from other schemes such as CSMBS. Unfair budget allocation among different levels of facility is the weakness of low-income card scheme. Survey findings on LICS indicate that there have been both under-coverage and leakage of card to the non-poor [5]. Criteria used to determine the low income households (means test) are very difficult in practice. In addition, cardholders are not guaranteed to access free care or reduced price care of a quality they perceive to be adequate. They continue to choose private care. Some card holders do not show their cards with the expectation of higher quality. The utilization rate of those who had free cards in 1993 was one-third to half of the expected level. The other half or two-thirds chose to seek services in the private sector with their own money. In short, this scheme has a problem of under utilization.

The survey of NSO in 1991 and 1993 demonstrated that more than half of the civil servants sought care from public hospitals. The utilization rate in public hospitals declined with high rank civil servants [6]. CSMBS survey showed that nearly half of civil servant parents and one-third of civil servants used public hospitals. While nearly half of their children used private hospitals [7]. Fee-for-service reimbursement makes the system inefficient and the expenditure is rapidly rising. The amount of budget spent was more than 2 times of the public assistance schemes in 1995 while population coverage was less than nearly 3 times.

The target population of Health Card Scheme is unclear. The scarce resources are competed from the non-poor. Selection bias and high utilization rate are the problem of this scheme.

Recent economic recession has repercussion not only on health and health budget but also on health insurance system. Adequacy of society safety net is concerned especially with accessibility to health services among the vulnerable poor. Lower employment rate decreases the coverage under Social Security Scheme. Insurance coverage will terminate after six months of losing job [a]. Those who are under employer contracted medical benefits and CSMBS will also have a worse insurance coverage. CSMBS is being in the process of reforming payment mechanism by using contract model rather than retrospective reimbursement in order to improve efficiency and cost containment. Because of budget constraint, several short-term and intermediate measures were released for CSMBS. On the other hand, people will look forward to being covered by Health Card Scheme.

2. Equity of access to health service

The Article 41 of new Constitution states that people have right to get access to standard health care and the poor can get free medical care. However, those who have not been covered by any health insurance or welfare system have to pay by their own out-of-pocket. However, it is not at full cost if they go to public hospitals because of subsidization from government. Also those who cannot afford can get free service or fee reduction based on medical social worker's discretion at government-run hospitals.

[a] it was extended to one year according to the social impact from economic crisis

An inequitable pattern of out-of-pocket health expenditure by income quintile and per capita was observed in the study of an urban area of Thailand. The underprivileged were more likely to pay out of their own pockets for their health problems, and to pay out of proportion to their household income when compared with more privileged groups. The poorest income quintile, which reported the highest rate of acute illness and hospitalization, spent highest health expenditure as 21.2% of their income when compared to other quintile [8].

The poor households which are not covered by LICS and other insurance schemes are more likely to suffer with inability to pay for health care expenditures.

3. Ability to pay for health care expenditure

The concept of ability to pay for health care concerns the family's capacity to mobilize or not mobilize his/her resources at the time of illness. The various resources available to the family are important for judging its ability to pay for health care costs. In fact, cash income is not the only determinant of ability to pay for health care, and is not the only resource available to families. Potential resources might include cash, savings, valuable assets, stores, and social networks [9].

When faced with a sudden contingency such as ill health and medical costs, the costs and sacrifices incurred by the family will depend on: (1) the nature, frequency and duration of illness and the costs of treatment needed; (2) the various resources available to the family; and (3) the responses it adopts -the way it mobilizes (or does not mobilize) these resources [10].

4. FCI and coping strategies to deal with health care costs

A 1991, rural household survey in the five provinces of Chiang-Mai, Lampang, Maha-Sarakham, Surat-Thani, and Rayong found that about 13% of 1,136 sampled households experienced financially catastrophic illness (FCI) in one-year recall period and 90% of these reported one catastrophic episode. Financially catastrophic illness (FCI) costs an average of 6,656 Baht per episode. Approximately 33% of the total 140 reported FCI cases were resolved by selling household properties, while the most widely used method of financing large medical bills was borrowing from friends and relatives (54%)[11].

5. Catastrophic illness, costs, and health insurance in developed countries

There is no consensus on how large an out-of-pocket expenses must be in order to warrant the ' catastrophic ' label. Many catastrophic thresholds were proposed among catastrophic health insurance mainly in the United States, as shown in Table A

If catastrophic cost is defined as out-of-pocket expenditures greater than 15% of gross annual income, 9 percent of the families would incur catastrophic expenditures. In addition, 28% of the families with income below $5000 would have catastrophic expenditures, in contrast to only 0.2% of families with income above $20000 in 1978. [12]

If catastrophic cost is defined as out-of-pocket limits at $2000 (1987 dollar) plus 10% of income, 2.4 percent of the families with age of household head less than 65 years would incur catastrophic expenditures, while 7% of the families with household head aged above 65 years would incur catastrophic expenditures [13].

Table A: Catastrophic definitions and costs

Catastrophic illness expenses	catastrophic definition & threshold
The Unites States	1) out-of-pocket costs more than $5000 per calendar year (1974 dollars) 2) out-of-pocket expenses US$ 2,000 per family (1979 dollars) 3) out-of-pocket expenses US$ 2,000 (1987 dollars) + 10% of annual household income 4) out-of-pocket costs exceed 20% of income : 20% (when only acute care costs were measured) - 30% (when long-term care were included) 5) out-of-pocket costs exceed 10% of income 6) out-of-pocket costs exceed 20-30% of household income (depending on income) 7) out-of-pocket costs exceed 30% of net income + 10% of net worth over $20,000
The Netherlands	separate catastrophic package (including several forms for long-term care) vs. basic medical package
Singapore	20% of per capita annual expenditure (deductible amount)

Source: 1) Wyszewianski 1986 [12]
2) Van de Ven WP et al 1994 [14]
3) Nichois LM et al 1997 [15]

Catastrophic health insurance coverage in the 3 developed countries were reviewed and presented in the following section.

1) The United States of America

Most catastrophic health coverage assume implicitly that a financially catastrophic case is nothing but a high-cost case for which third party coverage proves inadequate in financial shielding, resulting in out-of-pocket expenses that outstrip the person's or the family's ability to pay. There have always been pressures to provide universal coverage for certain diseases that are high cost, particularly those that are disabling or fatal. After coverage was provided for end stage renal disease (ESRD), the same was advocated for hemophilia and end stage heart disease. The wisdom of this disease-by-disease approach was questioned because an unexpected high cost occurred in the experience of ESRD program. However, there have been pros and cons for specific proposals. One must recognize that true protection against financially catastrophic health care expenditures can not be directly linked to specific diseases.

Most catastrophic health insurance have taken into account only the third party coverage and income, but not accumulated family assets. Differences in ability to pay across income groups were recognized in few plans, at least one, the Martin Bill 1980 (i.e. out-of-pocket deductible was $300 if family income was <$4000, out-of-pocket deductible increased to $300 plus one-fifth of income if family income ranged $4000-$9999, and out-of-pocket deductible was $1500 plus one-fifth of income if family income was >=$10000).

2) The Netherlands
The Dutch health care system is heavily regulated by government despite the predominance of private ownership. There is a compulsory national health insurance scheme (known as 'basic insurance') based on regulated competition. The benefit package of the basic insurance is very comprehensive and consist of nearly all non-catastrophic risks (hospital services, physician, drug, physiotherapy and some dental care), catastrophic risks (nursing home care, long-term institutional care for mentally and physically handicapped persons), and health care related social welfare (home for the aged). All individuals will receive a subsidy to help them buy this basic insurance from one of the competing insurers. In addition to the benefits not included in the basic benefit package (i.e. 'supplement care'), the population has to pay 10% of the total expenditures via user charges. People are free to buy supplemental health insurance. The premium for this voluntary supplemental insurance is not regulated or subsidized [14].

3) Singapore
MediSave is compulsory personal collective savings used for hospital services (6-8% income, varies across age). MediShield is a back up insurance plan with premium rate about S$12-132 per year, varies across age of the insured). MediShield plans cover high-cost care or catastrophic expenses (i.e. intensive medical care, hemodialysis, cancer therapy, excluded normal labor, cesarean section, psychosis, HIV / AIDS, cosmetic surgery, drug addict, alcoholism, and non-domestic services). Maximum liability is S$20000 per year and S$70000 for lifetimes. MediShield Plus (both plan A & B) cover the care that are outside the benefit of MediShield plans [16].

Table B: The premium rate of MediShield across age group

	Premium per year		
Age next birthday	MediShield	MediShield + Plan B	MediShield + Plan A
Up to 30	S$ 12	S$ 36	S$ 60
31-40	S$ 18	S$ 54	S$ 90
41-50	S$ 36	S$ 108	S$ 180
51-60	S$ 60	S$ 180	S$ 300
60-65	S$ 96	S$ 288	S$ 480
66-70	S$ 132	S$ 396	S$ 660

The health care system in Singapore aims at good basic health medical care package with relevant price for all. The government subsidizes the hospitals according to workloads and types of care. Hospital wards are divided into 4 classes based on the quality of care. Class C, which is the worst quality but has the highest subsidy and the lowest price, is always used by lowest income quintile people. Class A is the best quality but has the lowest subsidy for the richest income quintile. Patient himself has free choices to select types of ward. In general, 85% of population are able to pay class C [15].

Table C: Hospital wards and deductible amount

Class	Used by income quintile	Per capita annual expenditure	Deductible amount	as % of annual expenditure
C	Lowest 20%	S$ 3,430	S$ 500	15
B2	Second quintile	S$ 4,728	S$ 1,000	21
B1	Fourth quintile	S$ 8,224	S$ 2,500	30
A	Richest 20%	S$ 17,700	S$ 4,000	23

In conclusion, catastrophic coverage must protect against health care expenditures that would have exceeded a person's or the family's ability to pay, regardless of whether or not the expenditures were incurred because of a disease that is high cost, fatal, or epidemic, or- as in the case of AIDS- all three.

6) Universal coverage

Universal or near universal coverage for health care has been prominent objective of health policy in many countries around the world to ensure equitable access to health care for their citizens. Compulsory or social insurance and publicly financed for health care through taxation are two main paths to achieve universal coverage. The Thai health care system has faced equity problems and the inefficiency of health services that it cannot deliver good quality care to all citizens regardless of socioeconomic determinants. To move towards a universal access health care system, it is essential to reform in 3 main area: health financing, health service organisation, and consumer's right [17] .

The reviews of medical assistance for the indigent show that most developed countries achieve the universal coverage of medical services and some developing countries are in the transitional stage of transforming the non-universal coverage to universal coverage health care. The transformation starts with the social health insurance, the insurance for the industrial workers. Then, the agricultural sector and self-employed people are combined to be a national health insurance system. In Thailand, the medical assistance scheme should be transformed to the universal coverage health services in order to increase equity in access to health care, to be relevant to the concept of human rights and to reduce the problem of financial barrier. However, more studies about the appropriate strategies to achieve the universal coverage, including financing health care system, is needed [18].

A policy of achieving universal coverage to expand health coverage to all and reduce inequalities in health has been formulated and stated explicitly in the 8th National Health Plan (1997-2001). The policy is likely to be financed by insurance contributions from those who earn higher than the poverty line. There are exemptions for those who need public assistance like the elderly, children under 12 years old and the handicapped [19].

To develop universal coverage, a decision must be made as to what benefits the government will ensure coverage for. Options are as follows: basic essential package, catastrophic and expensive chronic illness only, expenses above a maximum household liability, comprehensive care or mix of the above [20].

Gap Of The Knowledge And The Rationale Of The Study

Health sectors in Thailand are in the process of reform to achieve two important goals: equity and efficiency. Health insurance systems are facing an important problem not only of inadequate coverage but also of the high health care costs. Supposing that the costs of health care rise continuously at a high rate and health insurance offers only limited liability and has poor population coverage, financially catastrophic illness (FCI) will become an important problem. Especially in the current economic crisis, the poor and the marginally poor tend to be faced with inability to pay for health care costs and are the most vulnerable to FCI. Ability to pay for health care costs is of slight concern for those who cover by some kinds of existing insurance and welfare schemes. Because each scheme almost has set its maximum liability of benefit, even though each scheme has different in benefit structure. Those who may be not the most disadvantage population, but not covered by insurance are vulnerable to be faced with a financially catastrophic event. The outstanding medical expenses will cause them income and/or asset loss. In reality, government, Ministry of Public Health (MoPH), hospitals could give user fee exemption for the patients who are not low-income cardholders and can not afford medical expenses (the so-called type B assistance). However, the exemption policy is not adequately known by everyone, only those who know can benefit. These type B patients compete nearly double of budget for LIC holders.

The concept of collective financing and risk pooling in insurance enables the insured people to have access to health service regardless of their income. Therefore, those who are covered by existing insurance and welfare schemes could garantee access to care while those who are the uninsured and the out-of-pocket patients are questioned.

To develop a good plan for catastrophic health insurance, a good understanding and comprehensive information on the magnitude of FCI, family's ability to pay and coping strategies in dealing with the costs of illness among the uninsured are needed.

What we do not know are those who are the uninsured and the out-of-pocket patients, their socio-economic status and their ability to pay for health care costs. Studies are required to address the questions: What is financially catastrophic illness in the Thai context?, How should it be defined?, What are its determinants, and which populations are the high-risk groups for FCI?.

This research is intended to fulfil this basic knowledge gap and stimulate consideration of what should be a good policy recommendation to prevent FCI. Songkhla Province was chosen as the study area because of its advantages.

Why Songkhla Province?

Songkhla is the third largest province of southern Thailand with an area of 7.39 million square kilometers. It consists of 16 districts, 124 subdistricts and 982 villages with population of 1.16 million [21]. The majority, 67%, are Buddhists compared with 32% Muslims. Gross Provincial products (GPP) at 1996 price is 75.6 billion Baht. And per capita income is 60350 Baht per year [22]. Some health indicators reveal that infant mortality rate and maternal mortality rate are 9.47 per 1000 live-births and 4 per 100000 live births respectively. Health insurance schemes cover 70.4% of total population. Public health facilities consist of 18 hospitals with 1898 beds, and 169

health centers under the MoPH and 5 hospitals with 830 beds under other ministries. There are 7 private hospitals varied from 27 to 200 beds with a total of 655 beds around the province. The population to doctors ratio and to nurses ratio were 3105:1 and 716:1 respectively in 1997 [23].

Songkhla is appropriate for this study because there are several levels of health facilities, comprising both public and private hospitals. Public health facilities comprise a university teaching hospital, a regional hospital, a provincial hospital, 16 district or community hospitals. Private health facilities have both for-profit and not-for-profit business. Out of these, we can get the complete picture of patients seeking institutional care in the Thai health care system and the incidence of FCI among out-of-pocket in-patients in Songkhla Province.

Research Objectives

1) To study family's ability to pay and financial coping strategies to deal with medical expenditure among in-patients not covered by any insurance schemes in Songkhla province
2) To study family's ability to pay and financial coping strategies among the so-called "financially catastrophic illness" patients in Songkhla province

Research Questions

1 Who are the out-of-pocket patients? What are their family's ability to pay for hospital bills among the out-of-pocket in-patients who are able and unable to pay?
2 What are the relationship between family's ability to pay and socio-demographic determinants among the patients not covered by insurance benefit? How ATP is to be measured?
3 What is the incidence of so-called financially catastrophic illness (FCI) or FCI events among the out-of-pocket patients residing in Songkhla Province? and how much financial requirement is required to covered FCI cases?
4 What are the common financial arrangements and coping strategies of the family in dealing with hospital bills throughout the current admission? What suffering do the family meet to cope with the costs of illness? To what extent and how do the financial consequences due to payment hit the family?
5 What are the general features of FCI cases? (related to socio-demographic characteristics, disease diagnosis (DRGs), treatment and clinical outcome, average length of hospital stay (LOS), charge structure and affordable out-of-pocket expenses)

Organization Of This Research

In order to fulfil the objectives of the study, the research consisted of two studies using both quantitative and qualitative methods. First, FCI-1 Study comprised a hospital-based survey and a time-series data collection. Second, FCI-2 Study comprised another hospital-based survey and a qualitative in-depth interviewing. The difference of the two studies was sample identification. Index cases in FCI-1 study was the out-of-pocket patients who met the selection criteria while the cases in FCI-2 study were out-of-pocket patients residing in Songkhla Province and requesting fee exemption during the study period, or the so-called FCI patients. FCI-2 study filtered more FCI cases to have a good understanding about FCI in cases of FCI-1 study could not get enough FCI patients. Qualitative approaches were employed to gather insight information about the types and sequence of finance source use for paying hospital bills. The features of the studies are summarized in Table D.

Table D: Summary of the two studies

	Subjects	Hospital selection	Study period
FCI-1 study	out-of-pocket in-patients who met the criteria (total = 1731) subsample = 144 in-patients (~10% of 1731)	8 out of 16 Community Hospitals, Songkhla Hospital, Hat-Yai Hospital, PSU Hospital, Rajyindee Hospital and Friendship Unity Hospital	November 1998 to April 1999
FCI-2 study, quantitative, hospital-based survey	out-of-pocket in-patients who met the criteria and asked for exemption (total = 300)	Hat-Yai & PSU Hospital	May 1999 to July 1999
FCI-2 study, qualitative in-depth interviewing	out-of-pocket in-patients whose admission incurred over 40,000 Baht and requested exemption (total = 38)	PSU Hospital	April 1999 to June 1999

Chapter 2: FCI-1 STUDY

Specific Objectives For FCI-1 Study

1. To describe family's ability to pay for hospital bills among out-of-pocket in-patients in Songkhla Province.
2. To find out the relationship between family's ability to pay and socio-demographic variables.
3. To identify common financial arrangements and coping strategies of the family to deal with the costs of illness in terms of types and sequence of resource used.
4. To document about disease profiles, clinical outcome, length of stay, hospital charges and affordable expenses among out-of-pocket in-patients both able-to-pay and unable-to-pay cases.
5. To obtain the incidence of financially catastrophic illness (FCI) events and compute financial requirement for FCI protection in Songkhla province

Methodology

A. Hospital-based Survey:

1) Study design

The design was prospective hospital based study. The study involved the follow-up of sample cases from admission till discharge. The respondents were either patients and/or close relatives who were willing to participate with the study. Face to face interviews were conducted by using a structured questionnaire during November 1998 to April 1999.

2) Hospital selection

Songkhla Province has different levels of hospitals. In this study, we chose both government and private hospitals. Firstly, eight out of 16 district hospitals, namely, Sadao, Chana, Thepha, Na Thawe, Sathing Phra, Khuan Niang, Ranot and Rattaphum Hospitals, were purposively selected for representing a district level or community hospital. The size of these 8 community hospitals is 30, 60, and 90 bed. Secondly, Songkhla Hospital represented a provincial level hospital. Thirdly, Hat-Yai Hospital represented a regional hospital. Fourthly, Songklanagarind or PSU Hospital represented a university teaching hospital. Fifthly, Rajyindee Hospital represented a for-profit private hospital. Lastly, Friendship Unity Hospital represented a not-for-profit private hospital. This research was based on the assumption that all selected hospitals comprise a large share of total out-of-pocket admissions in each type of hospitals in Songkhla Province during the study months. Therefore, out-of-pocket in-patients who met the criteria was assumed to be an representative sample of the out-of-pocket in-patients in all hospitals in Songkhla Province.

3) Subjects

Subjects were all out-of-pocket in-patients in the study hospitals who met the selection criteria during the study period.

3.1 Inclusion criteria; admitted patients who resided in Songkhla and had not benefit from any health insurance and welfare schemes.

3.2 Exclusion criteria; admitted patients who were CSMBS, SSS&WCS, TAPS beneficiaries and those who received PWS benefits (children under 12, elderly above 60, handicaps, and etc.) in MoPH hospitals, and the out-of-pocket patients who stayed less than 48 hours.

Short stay in-patients were excluded in this study because such cases were less costly and less chance to be unable to pay and FCI cases.

4) Sample size

Sample size calculation was based on the probability of having 5% chance to meet inability-to-pay case or financially catastrophic event in each study hospital with 2.5% precision at 95% confidence interval. The calculation was carried out using EPI INFO version 6.0 software. A total of 1734 admitted cases (289*6) from 6 types of hospital were needed and recruited.

5) Data collection;

5.1 The questionnaire form consisted of six sections. The first section contained general information on socio-demographic characteristics. The second section contained the information about care seeking behaviour and health care expenditures before this admission. The third section contained the questions related to financial coping strategies and family's ability to pay for hospital bills. The fourth section contained the information on monthly family income and consumption expenditures. The fifth section contained data transferred from both medical and financial record of the individuals. The sixth section contained the questions only used for the case in time-series study.

5.2 The questionnaire was pre-tested by the researcher himself in Ranot Hospital, Hat-Yai and PSU Hospital in October 1998. The revised questionnaire was used by trained nurses to interview patients or their close relatives. The nurses were trained by the researcher in each study hospital. Patient who met the selection criteria was identified on the day of admission at the admission center every evening by admission officials. The interviewers initially had an informal visit to the case after getting the assignment from the head of research team. Subsequently, the formal interview was done at the ward after the patients had been admitted for 48-72 hours or once before discharge. The assumption is that most patients have already paid some parts of the bills after 48-72 hours. The patient or relative was expected to know best about his/her ability to pay for the bills at the time of interview. The researcher provided supervision every two weeks at the beginning of two months and prompted feed back about data quality to the interviewers.

5.3 Definition of terms:

1) Ability to pay (ATP) was defined as the degree of payment affordability for the costs of illness. It was measured in monetary unit and classified into 3 categories: pay all the bills, pay some parts of bills, and pay nothing. The categories of ATP were re-grouped into able-to-pay and unable-to-pay in the analysis.
2) Financial coping strategies referred to the ways that families mobilize their resources to pay the bills. Resources were classified into intra-household resources (cash, savings, assets), extra-household resources (borrowing, family and social networks) and hospital resources / supports (fee exemption).
3) Financial consequences referred to immediate financial implications in which occurred after / due to payment such as loss of earning capacity, loss of productive assets, school leaving of children, indebtedness, and reduction of essential consumption.
4) Catastrophic costs / catastrophic medical expenses referred to medical expenditures in which admissions incurred greater than 15% of gross annual income

5) Financially catastrophic case / event was operationized by 3 definitions in this research: Firstly, an FCI event was roughly defined as any inability-to-pay case asking for fee exemption through medical social workers. Secondly, FCI event was used to refer to a situation in which financial consequences happened to a case due to the costs of treatment and the case had to negotiate for waiving of the bills. By this second definitions, two financial catastrophe indicators were used, that is, school drop out and indebtedness. Lastly, FCI was defined as a case whose admission incurred catastrophic costs
6) Financially catastrophic illness (FCI) was defined as disease / condition that frequently results in financially catastrophic case / event
7) Family income referred to both regular income and non-regular income of all income earners in the family including regular income transfer. Regular income was measured in monthly basis while non-regular income was measured on yearly basis. Total monthly income was calculated and extrapolated to annual family income.

5.4 Outcome variables were family's ability to pay (ATP) and affordable out-of-pocket expenses while independent variables were socio-demographic profiles, family resources, disease profiles (DRG), clinical outcome, length of stay, case-mix index and hospital charges

6). Data analysis; the unit of analysis was a current admission in the study period. Descriptive statistics (percent, proportion) and Analytic statistics (Chi Square test, Log-rank test, Survival analysis and Cox regression analysis on family's ATP) were employed. The analyses were done by STATA software version 6.0

B. Time-series study (sub-sample in hospital-based survey)

In order to gain more insight information about types and sequences of finance sources used during the admission among out-of-pocket in-patients, approximately 173 cases (10% of 1731 cases) in the survey hospitals were planned to sub-sample for the time-series study.

Methods

Every tenth case of the sample in hospital-based survey in each study hospital was recruited for time-series study. These cases were observed and interviewed on every billing day until they were discharged. Information about source of finance, the amount of out-of-pocket money that was payable to the hospital, and total hospital charges in each billing day were collected. Several source of finance used to pay the bills were classified into intra-household resource, extra-household resource and hospital resource. In addition to the sources of finance used, the sequences of individual's finance were used for time-series analysis.

Results

FCI-1 Study Results:

1.General descriptive

Table 2.1: The proportion of out-of-pocket inpatients among study hospitals during the study period (November 1998 to April 1999)

Hospital	Study month	# Out-of-pocket inpatients met to criteria (cases)	Total hospital admissions (cases)	%Out-of-pocket patients
Community	4	350	7,423	5
Songkhla	4	450	11,129	4
Hat-Yai	5	700	14,730	5
PSU	5	700	11,054	6
Rajyindee	6	800	2,622	31
Friendship unity	6	350	924	38

In the study period, there were differences in numbers of out-of-pocket in-patients met to our selection criteria and total hospital admissions in different hospital settings as shown in Table 1. The difference in time duration of study was also shown in the second column. Community and Songkhla Hospitals took only 4 months while Hat-Yai and PSU Hospitals took about 5 months to finish the study. The two private hospitals were terminated the study at 6 months although sample size could not be achieved as initial planned. The third column is the actual figures of total hospital admissions in the study period. The last column, estimated out-of-pocket in-patients who resided in Songkhla Province, accounted for 5%, 4%, 5%, 6%, 31% and 38% of total hospital admissions for community hospitals, Songkhla, Hat-Yai, PSU, Rajyindee, and Friendship Unity Hospital respectively. The proportion of these out-of-pocket in-patient in each hospital might be under-estimate because the numbers of out-of-pocket in-patient in the third column were under-reporting. Some of them who fitted to the criteria but stayed less than 48 hours were not included and some were loss to interview.

Table 2.2: Sample distribution

Hospitals	# Out-of-pocket in-patients met to criteria (cases)	Cases collected	% Sample	% Case collected
Comm.	350	332	19	95
Songkhla	450	300	18	67
Hat-Yai	700	295	17	42
PSU	700	299	17	43
Rajyindee	800	258	15	32
Friendship unity	350	247	14	70
Total		1731	100	

Since there was no exact numbers of out-of-pocket patients in the routine record system, an estimation of out-of-pocket in-patients who met our selection criteria was made by crude counting during the study period as shown in the second column. The third column was sample in-patients in each study hospital. A few numbers of in-

patients who fitted the criteria could not interview in time due to our limitations. For instance, an interview could not be performed by trained nurses who had been working at the day of patient discharged. Some index cases could not participate the interview due to illness and no caretaker at the time of visit. The last column show percent cases collected in each hospital. Almost all in-patients in community hospitals were recruited while those of Rajyindee Hospital were recruited in the lowest percentage. The disproportion of trained nurses to cases in some hospitals was the another reason of case losing and led to consume more time to complete the study.

Table 2.3: Admitted ward & hospitals

HOSPITAL	Admitted ward (cases, percent)						
(cases)	OBG	Surg	Med	Ped	Ortho	EENT	Others
Community (332)	60 (18.1)	61 (18.4)	209 (62.9)	1 (0.3)	1 (0.3)	-	-
Songkhla (300)	128 (42.7)	63 (21.0)	95 (31.7)	-	10 (3.3)	4 (1.3)	-
Hat-Yai (295)	132 (44.7)	50 (17.0)	112 (38.0)	1 (0.3)	-	-	-
PSU (299)	79 (26.4)	63 (21.1)	38 (12.7)	50 (16.7)	18 (6.0)	42 (14.1)	9 (3.0)
Rajyindee (258)	25 (9.7)	47 (18.2)	121 (46.9)	29 (11.2)	24 (9.3)	11 (4.3)	1 (0.4)
Friendship Unity (247)	35 (14.1)	13 (5.3)	157 (63.6)	42 (17.0)	-	-	-
Total (1731 cases)	459 (26.5)	297 (17.1)	732 (42.3)	123 (7.1)	53 (3.1)	57 (3.3)	10 (0.6)

Approximately 42% of our subjects were admitted in department of medicine. Obstetrics & gynecology and surgical cases accounted for 27 and 17 percent respectively. Medical cases, while most of the patients in large government hospitals were Obstetric & gynecology cases, dominated the patients in community hospitals. Private hospitals clients were mainly admitted in the department of medicine.

Table 2.4: Socio-demographic characteristics

Socio-demographic characteristics	Patients	Relatives
Respondent, cases (percent)	1338 (77)	393 (23)
Age in year; mean (SD)	33 (17)	36 (10)
Sex; male% (female%)	37 (63)	25 (75)
Education; primary school & below (%)	64	54
Education; secondary school & above (%)	36	46
	Only patient's characteristics	
Marital status, percent	married 69, single 21, others 10	
Occupation, percent	unskilled employees 46 no job / housewife / student / aged 42 Others 12	
Residence, percent	urban 50, rural 50	
District-residence, percent	Hat-Yai 39, Maung 13, Sadao 8, Ranot 7, Rathaphum 6, Others 34	
Religion, percent	Buddhist 86, Islam 13, Others 1.0	
Principal source of income, percent	Wages Employment 46, Agriculture / subsistence 25 Trade / merchant 23, Others 6	

Seventy-seven percent of the respondents were patients themselves and 23 percent were their relatives. Sixty-three percent of the patients and 75 percent of the relatives were female. Their education were mostly below secondary school. Sixty-nine percent of the patients were married while 21 percent were single and dependent. The major occupation of the patients, unskilled employees, accounted for 46% while the groups of jobless, housewife, students, children and elderly comprised 42%. The place of residence was urban or rural area in equal proportion. Most of the patients lived in Amphur Hat-Yai, Maung, and Sadao. Eighty-six percent were Buddhists and 13 percent were Mulslims. The principal source of revenue of the families was generated from wage employment (46%), agriculture (25%) and merchant or trader (23%).

Table 2.5: Monthly family income (Baht)

	Monthly family income (Baht)			
Hospital	mean	median	minimum	maximum
Community	7,287	5,000	833	60,125
Songkhla	7,145	5,000	1,666	120,000
Hat-Yai	7,694	6,000	500	113,000
PSU	12,388	6,000	983	400,333
Rajyindee	33,765	22,000	1,000	550,500
Friendship Unity	14,807	15,000	1,000	60,000

Only 4 of total subjects did not agree to disclose their family income and expenditure. Information on income was collected from all sources of income in the family. Monthly income was calculated from the sum of regular income of all income earners on a monthly basis and other non-regular revenue including income transfer that were collected on a yearly basis then divided by 12. Average monthly income of the patients who sought care at private hospitals (Rajyindee and Friendship Unity Hospital) was much higher than that of the patients in government hospitals. Median

income of the patients in small government hospitals was lower than that of those in large hospital. For instance, median income of community hospital clients was 5000 Baht per month while that of Hat-Yai hospital was 6000 Baht.

2. Current admission

2.1) Seek care behavior

Table 2.6: Care seeking behaviors before this admission (>1 answers)

	Cases	Percent of those ever sought care
Ever seek care	470	
• Seek care at health center	47	10
• Seek care at clinic	232	49
• Seek care at govt. hospital	216	46
• Seek care at private hospital	66	14

*Notice that the sum of percent are greater than 100 because the choice for seeking care is not mutually exclusive.

Only 470 cases, 27% of our sample, had sought care somewhere prior to this admission. Places of seeking care were as follows: 10% sought care at health centers, 49% at private clinics or poly-clinics, 46% at government hospitals and 14% at private hospitals.

Subgroup analysis found that the patients who sought care prior to this admission mainly confined in PSU (23%) and Rajyindee Hospital (22%). Most were admitted in department of medicine (41%). Several socio-demographic characteristics were similar to those who did not.

2.2) Resource use for paying the bills

Table 2.7: Finance sources pay for the first bill

First money use	Freq.	Percent of those who paid
Cash / Savings	1034	89.3
Borrowing	95	8.2
Sales of value asset	8	0.7
Sales of store / stock	6	0.5
Networks	15	1.3
Total	1158	100.0

*Note: Networks mean that resources used derive from extra-households such as family networks and social networks of the families

1158 out of 1731 cases (66.9%) had paid money for the bills, at least one bill, at the time of interviewing. Most of the cases who used their cash or savings for paying the first bills, accounted for 89%. And 8.2% of resources were borrowing from their relatives / friends / informal moneylenders.

Table 2.8: Source of finance for paying all the bills in this admission (>1 answers)

Source of finance	Freq	Percent
Cash	1543	89.1
Savings	579	33.5
Sales of value asset	60	3.5
Sales of stock	39	2.3
Borrowing	370	21.4
Networks	70	4.0
Partial / Full fee exemption	350	20.2

For the current admission, the most common source of finance for paying the bills came from cash accounting for 89%. About 21.4% of cases had to borrow cash from informal money lenders, their friends and/or their kin. Networks contributing 4 percent derived from their friends, relatives or neighborhood. 20% of cases had to negotiate with medical social worker in the government hospital for waiving the bills.

Resource use among the patients who sought care prior to this admission were slightly difference from those who did not: 88 percent use cash / mobilize savings, and 9 percent borrow cash for paying the first bill, and 26 percent use borrowing as one of finance source in this admission.

3.Ability to pay

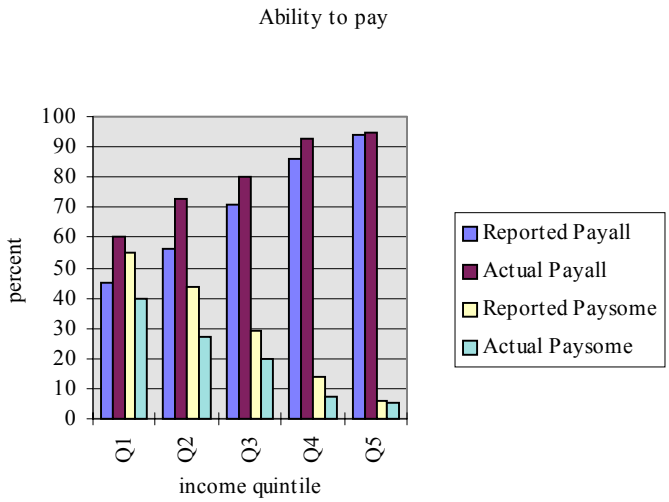
Table 2.9: Family's ability to pay for this admission (all patients)

Family ability to pay	Reported ATP (Freq, percent)	Actual ATP (Freq, percent)
pay all	1206 (69.7)	1381 (79.8)
pay some	498 (28.8)	318 (18.4)
pay none	27 (1.5)	32 (1.8)
Total	1731 (100)	1731 (100)

At the time of interview, most of the patients who had paid money have judged and reported whether they were able to pay for the bills or not. Only a few cases could not estimate how much the medical expenses were. Therefore, there were both under-reporting and over-estimation as compared with actual payment status. From Table 2.9, nearly 70% of the subjects reported that they were able to pay all of hospital bills, but 80% were actually able to pay all bills. In addition, 1.5% of cases reported that they were able to pay some parts of the bills, but this figure increased to 1.8% indicating that some who reported they could pay some actually paid none at discharge. The 10 percent who actually paid all even though they argued they could not, possibly derived extra-finance from extra-household resources.

Ability to pay for this admission might be reduced in some cases owing to the subjects having sought care elsewhere before being admitted in the study hospitals. We also analysed whether reported ATP of the patients who had sought care prior to this admission was lower than that of those who had not. Slightly lower ATP was shown (results not shown): 64 percent reported pay all and 77 percent actually pay all among the patients who had sought care compared to 72 percent reported pay all and 81 percent actual pay all among those who had not.

Figure 2.1: Family's ability to pay by income quintile



Family's ability to pay increased by income quintile as shown in Figure 2.1. Reported and actual pay-all were always higher in higher income quintile while reported and actual pay-some were always lower in higher income quintile. These findings imply that higher income patients had higher reported and actual ability to pay than lower income. Lower income patients were more likely than higher income patients to be able to pay only some parts of the bills.

Table 2.10: Actual payment status of all patients

Hospital	Payment Status	
(cases)	able to pay (in full charges)	unable to pay
Community (332)	253 (76.2)	79 (23.8)
Songkhla (300)	223 (74.3)	77 (25.7)
Hat-Yai (295)	219 (74.2)	76 (25.8)
PSU (299)	189 (63.2)	110 (36.8)
Rajyindee (258)	258 (100.0)	0
Friendship Unity (247)	239 (96.8)	8 (3.2)
Total (1731 cases)	1381 (79.8)	350 (20.2)

Payment status of the patients regarding this current admission were classified as able to pay (80% of cases) and unable to pay (either able to pay some or pay none- 20% of cases). The proportion of family's ability-to-pay differed from one hospital to another. Patients in government hospitals had more unable-to-pay cases than those in private hospitals. The magnitude of inability-to-pay among the patients in the government hospitals was increased when the level of hospital facilities increased. The proportion of inability-to-pay ranged from 23.8 to 36.8% in government hospitals.

4.Financial implications

Table 2.11: Financial implications due to payment for current admission

Impact of payment	# of cases (% of total)	Able-to-pay	Unable-to-pay
• Reduction of essential consumption	644 (37.2)	430	214
• School drop-out	14 (0.8)	8	6
• Indebtedness	194 (11.2)	108	86

Of 1731 cases in the FCI-1 study, 676 cases (39%) reported some financial consequence happened due to payment in this current admission. Reduction of essential consumption, school drop-out, and indebtedness were 37.2, 0.8, and 11.2 percent respectively. Only a few cases who were faced with the impact(s) were also unable-to-pay cases as shown in Table 2.11.

Time-Series Study Results:

5.Time-series findings related to coping methods

Table 2.12: Case distribution in time-series study

Hospital	Freq	Percent
Community	12	8.3
Songkhla	28	19.4
Hat-Yai	27	18.8
Songklanagarind	36	25.0
Rajyindee	22	15.3
Friendship Unity	19	13.2
Total	144	100.0

There were 144 out of total 1731 cases that were sub-sampled to focus the types and sequences of finance sources for paying the bills in every billing day and discharge day. The distribution of cases was shown in Table 2.12.

Table 2.13: Source of finance and its description

Finance source	Description
Intra-household resources	Cash / Saving / Assets
Extra-household resources	Borrow / Family or social networks
Postpone payment	Postpone payment or temporary Debt
Discount	Discount
Fee exemption	Fee exemption

In the existing situation of billing, there was no absolutely standard policy among government hospitals. Some hospitals were allowed patient or relative to pay only one time on the discharge day. Some let the patients or relatives pay at once the physician prescribed the drugs. A few hospitals was required the patients or relatives to pay the bills every 3 days. In short, there were 5 methods of finances use among patients who sought care at health institutions. All sources were summary in Table 2.13.

Table 2.14: Source of finance in different times (bill-day)

Source of-	ORDER OF BILL							
Finance	Bill1	Bill2	Bill3	Bill4	Bill5	Bill6	Bill7	Total (%)
Intra-household resources	119	90	46	13	9	3	1	281 (79)
Extra-household resources	9	3	2	1	2	0	0	17 (5)
Postpone payment	13	6	1	2	0	0	0	22 (6)
Discount	2	10	1	2	2	1	0	18 (5)
Fee exemption	1	9	6	2	0	0	0	18 (5)
Total	144	118	56	20	13	4	1	356 (100)

A total of 356 bills was collected among 144 patients in the time-series study. The intra-household and extra-household resources use were 79% and 5% respectively. The most common finance source use in the first bill-day (The first column, Bill 1) was intra-household resources. Only 1 out of 144 reported cases had asked for partial fee exemption since first bill day. Thirteen out-of 144 cases had no cash to pay for the first bill and had to postpone payment.

There were several patterns of coping sequences for paying the bills in current admission. Their complexity depended on the numbers of bill-day and method used. The maximum numbers of sequence corresponded to 7 billing days, while the minimum was 1 billing day. As there were a large numbers of patterns, the same finance used on consecutive billing day was counted only one time. As a result, for easy understanding, finance sources were re-classified as shown in Table 2.15.

Table 2.15: Sequence of resource use in different times (bill-day), Status post modification

Sequence	Freq	Percent
1	88	61.11
12	2	1.39
121	2	1.39
125	1	0.69
131	3	2.08
135	2	1.39
14	14	9.72
15	7	4.86
2	3	2.08
21	1	0.69
235	1	0.69
24	2	1.39
25	2	1.39
31	7	4.86
3121	1	0.69
31232	1	0.69
35	4	0.7
4	2	1.39
5	1	0.69
Total	144	100

Note: 1 = intra-household resources, 2 = extra-household resources, 3 = postpone payment, 4 = asking discount, 5 = fee exemption

61% of cases used absolutely their intra-household resources to pay the bills. 10% of cases used their intra-household resources first and then asked for discount at the day of discharge. Nearly 5% of cases first postponed payment but could finally pay by intra-household resources. The other 5% used intra-household resources, followed by asking fee exemption at the day of discharge. The rest 20% used other patterns of sequence.

6.Length of stay, hospital charges and out-of-pocket expenses

Table 2.16: Average LOS, charges, and out-of pocket expenses among study hospitals.

	Comm.	SK	HY	PSU	RYD	FU	Overall
1.LOS							
mean	4.2	5.7	6.0	9.5	5.7	3.8	5.9
SD	5.3	4.5	4.9	8.9	8.0	2.7	6.4
min	1	2	2	3	2	1	1
max	39	35	35	79	94	31	94
2.CHARGE							
mean	1,284	3,240	5,702	8,849	23,531	4,184	7,412
SD	1,810	3,116	9,455	9,701	55,465	14,136	23,884
min	80	150	305	299	2,533	445	80
max	17,565	17,633	111,729	82,099	844,159	214,760	844,159
3. Out-of-pocket expense / Charge ratio							
mean	86	87	85	77	100	98	88
SD	28	25	29	34	0	12	26
min	0	0	0	0	100	0	0
max	100	100	100	100	100	100	100
4. Charges as % annual income							
mean	2.5	5.6	14.7	13.1	13.4	3.1	8.7
SD	4.3	7.0	109.0	18.3	45.6	8.7	49.3
min	0	0.1	0.1	0.2	0.4	0.2	0
max	47.4	58.8	1862.2	148.3	683.5	119.3	1862.2
5. Out-of-pocket expenses as % annual income							
mean	1.8	4.1	7.4	8.1	13.4	2.5	6.1
SD	3.1	4.5	23.5	13.0	45.6	4.4	21.3
min	0	0	0	0	0.4	0	0
max	32.1	38.8	359.0	148.3	683.5	32.0	683.5

Hospital charges and length of stay among government hospitals increased by level of facilities. Average LOS varied from 4-10 days. Average hospital charges of community hospitals was the lowest while Rajyindee Hospital was the highest. Out-of-pocket to charge ratio declined when level of facilities was higher among government hospitals and highest in PSU Hospital. Out-of-pocket to charge ratio indicated the level of affordability, as well as, the level of hospital subsidy to the patient individuals. Hospital charges in this admission ranged from 2.5-14.7 percent of annual income. The share of out-of-pocket payment, out-of-pocket expenses as percent of annual income for current admission, varied from 1.8-13.4 percent. On average, the affordable out-of-pocket expenses was 6.1 percent of annual income. The difference of hospital charges and out-of-pocket expenses as percent of annual income was shown in Figure 2.2.

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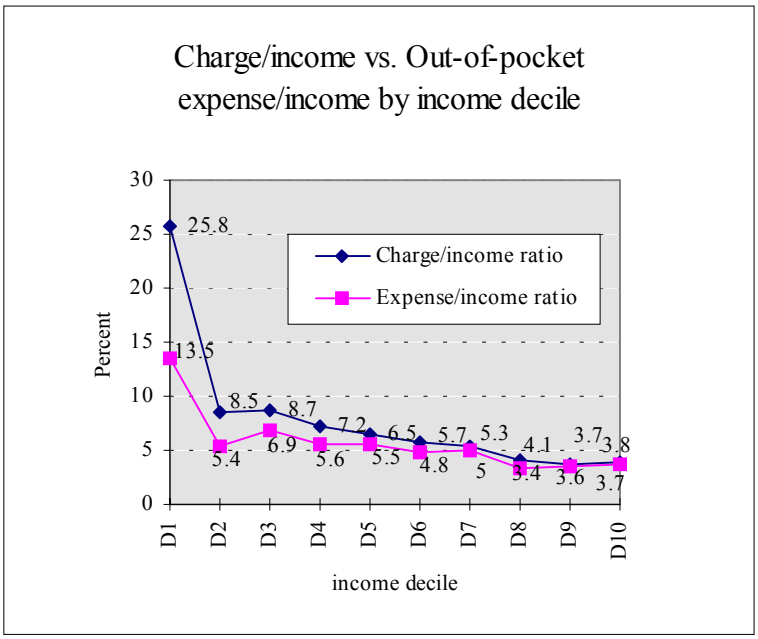


Figure 2.2: Charges and out-of-pocket expenses

Charges and out-of-pocket expenses to income ratio by income decile were shown by Figure 2.2. The highest charge / income and out-of-pocket expense / income ratio of 25.8% and 13.5% were demonstrated in the lowest income. The lowest charge / income and out-of-pocket expense / income ratio of 3.8% and 3.7% were demonstrated in highest income. The difference gap in each decile reflected the amount that needed financial assistance.

7) Out-of-pocket expenses as percent of family income

Table 2.17: Total hospital charges incurred by all sample and the patients with high out-of-pocket expenses exceeding 5, 10, 15 and 20 percent of Family income

Out of pocket expenses as % family income	Number of sample (case)	Percent of sample	Total charges (Baht)	Percent of Total charges
5% or less	1237	72	4,384,539	34
more than 5%	490	28	8,372,852	66
10% or less	1496	86	6,977,244	55
more than 10%	235	14	5,780,147	45
15% or less	1596	92	8,339,630	65
more than 15%	135	8	4,417,761	35
20% or less	1651	95	9,125,025	71
more than 20%	80	5	3,632,365	29
All sample	1727	100	12,757,391	100

Nearly 72 percent of total subjects paid out-of-pocket less than 5 percent of annual income. Those who paid out-of-pocket expenses exceeding 5, 10, 15, and 20 percent of income accounted for 28, 14, 8, and 5 percent respectively. The patients with high out-of-pocket expenses relative to their income incurred total hospital charges that represented a disproportionate share of all charges of all cases. For example, patients with out-of-pocket expenses exceeding 15 percent of income, constituted 8 percent of all sample, yet accounted for 35 percent of total hospital charges for all sample.

8) Disease profile and DRGs

All sample in the FCI-1 study were re-grouped by DRG Grouper. There was a total of 224 DRGs with relative weights ranging from .05 to 7.54 (excluded 7% non-meaningful DRGs; 128 records)

Table 2.18: Ten most common DRGs, mean charges and average LOS (FCI-1 study)

			Charge (Baht)			LOS
DRG (RW)	DRG Description	N	SK	PSU	Raj.	(days)
183 (.42)	Esophagitis, Gastroenteritis & Misc Digestive Disorders age > 17 W/O CC	161	1130	3751	5972	3
373 (.30)	Vaginal Delivery W/O Complicating Diagnoses	154	1586	2145	11550	5
371 (.85)	Cesarean Section W/O CC	96	5966	8803	28187	6
384 (.39)	Other Antepartum Diagnoses W/O Medical Complications	60	3605	3480	11783	4
420 (.66)	Fever of Unknown Origin age > 17 W/O CC	50	1059	-	13281	4
321 (.65)	Kidney & Urinary Tract Infections age >17 W/O CC	45	1173	-	8519	5
184 (.22)	Esophagitis, Gastroenteritis & Misc Digest Disorders age 0-17	32	1299	6635	6026	3
450 (.67)	Poisoning & Toxic Effects of Drugs age >17 W/O CC	31	1731	-	-	3
421 (.58)	Viral Illness age >17	29	585	2430	8077	4
69 (.51)	Otitis Media & URI age>17 W/O CC	28	669	-	12460	3
Total	686/1603*100 = 42.8%	686				

Note: SK = Songkhla Hospital, PSU = Songklanagarind Hospital, Raj = Rajyindee Hospital., W/O = without, CC = co-morbidity / complication

Table 2.18 demonstrated 43 percent of cases in terms of the ten most common DRGs. It was so obvious that the charges were not homogeneous between the government and private hospitals. Thus, charges of the same DRG were broken down by different types of hospital. The second column just showed only charges of three hospitals, namely, Songkhla, PSU, and Rajyindee Hospital. Common DRG items tended to have relatively low charges, except cesarean section (DRG 371). When considering each DRG, charges of almost all DRGs were the cheapest at the general hospital (SK), followed by the university hospital (PSU), and charges at private hospital (Raj) were the most expensive.

Table 2.19: Ten most high-cost DRGs (by charges) in the FCI-1 study

DRG (RW)	DRG Description	N (cases)	Charge (Baht)	LOS (days)
483 (4.11)	Tracheostomy Except for Face, Mouth & Neck Diagnoses	1	844,159	94
3 (2.88)	Craniotomy age 0-17	1	167,639	15
400 (2.17)	Lymphoma & Leukemia W Major O.R. Procedure	1	59,861	12
330 (.28)	Urethral Stricture age 0-17	1	58,051	6
14 (1.47)	Specific Cerebrovascular Disorders except TIA	3	49,103	26
358 (1.31)	Uterine & Adnexa Proc for Non-Malignancy W Cc	1	42,949	5
301 (1.02)	Endocrine Disorders W/O Cc	2	41,879	17
451 (.34)	Poisoning & Toxic Effects of Drugs age 0-17	3	39,929	14
219 (.91)	Lower Extrem & Humer Proc except Hip, Foot, Femur Age >17 W/O CC	1	39,922	4
2 (3.83)	Craniotomy for Trauma age >17	1	37,280	21
Total	=14/1603*100=0.87%	14		

Ten most high-cost DRGs by charges, which account for 0.87% of cases, were shown in Table 2.19. Each high-cost DRGs had very few volume of cases. Relative weights ranged from .28 to 4.11. Only 4 DRGs had relative weight greater than 2. Thus, high-cost DRGs as defined according to charges were not appropriate.

9). Difference between able-to-pay and unable-to-pay groups

Table 2.20: Some important variables of interest between two groups

	able-to-pay (1381 cases)	unable-to-pay (350 cases)	Mann-Whitney test, P-value
Income (Baht)	14,972	6,229	<.0001
Charges (Baht)	7,360	7,622	<.0001
Charge as % annual income	6.1	18.6	<.0001
Out-of-pocket payment (Baht)	7,360	2,693	<.0001
Out-of-pocket as % annual income	6.1	5.9	.5466
LOS (Day)	5	9	<.0001
Case-mix index	1.1	1.2	.0018

Most of the variables presented in Table 2.20 showed significant differences between able vs. unable-to-pay groups except out-of-pocket payment as percent of annual income. Unable-to-pay patients tended to have low family income, high average hospital charges, more severe disease, long hospital stay, and low affordability as compared to able-to-pay group. Charges as percent of income in unable-to-pay group were 3 times higher than able-to-pay group.

Table 2.21: Clinical outcome and ATP

	Clinical outcome* (cases)				
ATP	improved	not improved	referred	dead	Total
able-to-pay	1342 (97.2)	10 (0.7)	29 (2.1)	0 (0)	1381 (100.0)
unable-to-pay	333 (95.1)	5 (1.4)	10 (2.9)	2 (0.6)	350 (100.0)
Total	1675 (96.8)	15 (0.9)	39 (2.3)	2 (0.1)	1731 (100.0)

Note: * statistically difference, P-value=0.016

Clinical outcomes as classified by 4 categories were shown in Table 2.21. They were statistically significant between able-to-pay and unable-to-pay groups.

10). Survival Analysis: Results

Payment status of the patients regarding the current admissions were classified as able to pay and unable to pay (either able to pay some or pay none). Since the study was designed according to stratification by hospitals, stratified analysis was performed. All 258 cases from Rajyindee Hospital were excluded from this part of analysis because all in this hospital were able to pay (no failure event) for the bills and gave no information as predictor of ATP within the hospital. A total of 1472 cases, thus, were used for survival analysis. There were 350 cases with failures data and 1122 cases with censors data. The amount of upper limit out-of-pocket payments (maximum affordable level) that were able to pay was treated as survival money instead of using survival time as conventional survival analysis.

Table 2.22: Survival analysis results

	# of cases		Maximum affordable limit (Baht)			logrank test*
	able	unable	25%	50%	75%	P-value
Age group						0.206
<15 year	89	26	3,295	20,647	.	
15-30	493	144	3,000	11,880	.	
31-45	299	90	3,661	20,145	.	
46-60	162	63	3,000	9,625	44,987	
>60	79	27	4,800	12,111	.	
Sex						0.561
male	380	132	3,403	10,430	44,987	
female	742	218	3,362	18,173		
Education						<0.0001
primary school	721	262	3,000	9,313	44,987	
secondary	266	68	4,000	21,542	.	
> secondary	135	20	.	.	.	
Occupation						<0.0001
skilled	105	22	44,987	44,987	.	
unskilled	580	152	3,600	15,853	.	
jobless	438	176	3,010	8,885	21,542	
Residence						0.056
urban	528	150	4,300	44,987	.	
rural	594	200	2,600	8,258	21,542	
Religion						0.092
Buddhist	965	285	3,500	18,173	.	
Islam	149	63	2,000	5,794	9,313	
others	9	2	4,400	.	.	
Family size						0.119
<=2 persons	222	64	3,354	.	.	
3-4	486	133	3,640	20,145	.	
5-6	322	104	4,000	10,430	.	
>=7	92	49	2,184	4,980	20,647	
Income earners						<0.0001
0-1 person	314	153	2,170	9,313	44,987	
2	586	145	4,641	14,700	.	
>=3	222	52	4,000	.	.	
Income class (Baht)						<0.0001
<3000	75	55	1,000	3,900	7,757	
3001-6000	322	168	1,885	5,000	18,173	
6001-12000	396	102	4,000	20,145	.	
12001-30000	283	17	.	.	.	
>30000	46	8	.	.	.	
Charges (Baht)						<0.0001
<=2500	713	127	2,200	.	.	
2501-7500	256	121	3,500	7,250	.	
7501-15000	113	65	5,014	.	.	
>15000	40	37	6,266	21,542	.	

	# of cases		Maximum affordable limit (Baht)			logrank test*
	able	unable	25%	50%	75%	P-value
Length of stay						.1251
<=3 days	522	67	5,100	.	.	
4-6	399	122	3,775	.	.	
>6	199	161	6,266	8,350	44,987	
Case-mix index						0.5496
<1.5	959	272	3,415	18,173	.	
1.5-3.0	78	30	3,811	.	.	
>3.0	12	18	2,800	11,039	44,987	
Total 1472 cases	1122	350	3,363	14,700	.	

Note * = logrank test stratified by hospital

Table 2.22 showed results using life-table method. Several categorical variables were explored and tested by using logrank test. Ability to pay in the subgroups of various independent variables were compared. The second and third columns were crude counts of those who were able vs. unable to pay (i.e. neglecting level of charges but concentrating on final payment status). The next three columns were the upper limit of affordable level or maximum affordable limit at 25, 50, and 75 percentile. The explanation of ability to pay for each subgroup of independent variable are as follows: among patients aged less than 15, 25 percent of the subjects would be unaffordable if charges exceed 3 295 Baht, and 50% would be unaffordable if charges exceed 20 647 Baht, and there was no third quartile of maximum affordable limit in this age group because more than 25 percent were still able to pay the bills. In contrast, among the patients aged 46-60 years, 25 percent of the subjects had reached their maximum ATP at 44 987 Baht. The last column was the results of logrank test. The logrank statistics, which has a chi-square distribution, was used to test whether the difference in the survival profiles for various subgroups was statistically significant. For age group, p-value of logrank test, after stratifying by hospital, was 0.206 (Chi-square of 5.92 with 4 degree of freedom). It was concluded that ability to pay was not significant difference among age groups.

According to the last column, several explored variables had statistical difference among subgroups except patient's age group, sex, religion, place of residence, family size, LOS and case-mix index. As expected, the upper class always had better ability to pay as shown by 25% and 50% of upper limit of affordable level. On average, half a sample were unaffordable at expenses of 14 700 Baht.

All results above were crude estimation of family's ability to pay. Life-table analysis showed that we did not have evidence of an association between ATP and biological factors (such as patient's age and sex), and some demographic variables (such as place of residence, religion, and family size). On the other hand, hospital charges and some socio-economic variables such as patient's education, occupation, income class, and hospital charges were consistently shown to be associated with family's ability to pay.

All the variables in Table 2.22 were used to test as independent predictors of family's ability to pay in multivariate analyses using Cox regression. Since hospital charge and

LOS are highly correlated, only hospital charge was entered in the modeling (Correlation coefficient, r=0.4852).

As patients under 15 years old, whose payment status was dependent of their families, we also excluded 115 records in this part of analysis to avoid their effect to family's ability to pay. A total of 1357 cases remained in the multivariate regression analysis.

Table 2.23 showed the results of various modeling using Cox regression. On the leftmost column, all variables in Table 2.29 were included. The second column is a full model including all variables with a log likelihood of –1354.3078 as a referent model. The remaining models had fewer variables than the full model. For example, Model 1 in the third column, age group was omitted, the log likelihood value changed to –1355.5779. When the difference of this log likelihood value and the log likelihood of the full model is multiplied by -2, it is a log (likelihood ratio) of 2.54 with 4 degree of freedom. Consequently, this gives a P value of 0.4681 that is not statistically significant. Thus, we concluded that age group was not a significant predictor after adjusted by the remaining variable in the model. All the remaining models were tested in similar fashion. In conclusion, education, occupation, income class, and hospital charges were the significant predictors of ATP.
So far, we have explored the association between multiple explanatory variables and the survival outcome by using Cox regression models. The Cox's proportional hazards model assumes that the hazard rate for an observation is proportional to $\exp(\beta_i x_i)$ for each independent variable x_i over the entire time span of the data. In other word, the hazard proportions observed in one period agree with the hazard proportions observed in another. This may not be a valid assumption. It is therefore necessary to check whether the data suggest a significant departure from the assumption of proportional hazards. This can be do by using STATA software. The Global test, a test for checking the valid of proportional hazard assumption, has Chi-square distribution. The P-value for the Chi-square indicates the probability that the data could have been obtained under the null hypothesis of proportional hazards. If the P-value is very low, then we should accept that the data suggest significant violation of the proportional hazards assumption. Based on the fitted or full model in Table 2.23, we check for our data-set whether our model conformed with proportional hazard assumption or not. The test , giving Chi-square of 33.77 with 25 degree of freedom and P-value of 0.1129, means that the assumption was valid for our data.

In conclusion, both life-table and Cox regression analysis show that patient's education and occupation, income class, and hospital charges seemed to be highly associated with family's ability to pay.

Table 2.23: Multivariate analysis using Cox regression

Variable	Full model	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8	Model 9	Model 10	Model 11
age group (4 levels)	+		+	+	+	+	+	+	+	+	+	+
sex (2 levels)	+	+		+	+	+	+	+	+	+	+	+
education (3 levels)	+	+	+		+	+	+	+	+	+	+	+
occupation (3 levels)	+	+	+	+		+	+	+	+	+	+	+
residence (2 level)	+	+	+	+	+		+	+	+	+	+	+
religion (3 levels)	+	+	+	+	+	+		+	+	+	+	+
# income earners (3 levels)	+	+	+	+	+	+	+		+	+	+	+
# family size (4 levels)	+	+	+	+	+	+	+	+		+	+	+
income classes (5 levels)	+	+	+	+	+	+	+	+	+		+	+
case-mix index (3 levels)	+	+	+	+	+	+	+	+	+	+		+
hospital charges (4 levels)	+	+	+	+	+	+	+	+	+	+	+	
Log likelihood	-1354.31	-1355.58	-1354.97	-1360.78	-1357.68	-1355.26	-1355.05	-1356.73	-1356.85	-1377.79	-1355.24	-1360.26
Likelihood ratio test, Chi square (df)	-	2.54 (4)	1.32 (1)	12.94 (2)	6.74 (2)	1.90 (1)	1.48 (2)	4.84 (2)	5.08 (3)	49.96(4)	1.87 (2)	11.90 (3)
P-value	-	.4681	.2498	.0015	.0344	.1676	.5246	.0890	.1660	<.0001	.3932	.0077
Test of proportional hazard assumption,Chi-square (df) P-value	33.77 (25) 0.1129	-	-	-	-	-	-	-	-	-	-	-

11. Inability to pay and FCI incidence in Songkhla Province

a) Weighted calculation for proportion of FCI

A total of 1,731 cases in the FCI-1 study was completely collected from 6 types of hospitals in different times. Community hospitals completely collected within 4 months. Songkhla, Hat-Yai and Songklanagarind collected in 5 months. Rajyindee and Friendship Unity Hospital completed data collection in 6 months. Since the data were obtained from out-of-pocket in-patients different time duration of study, we used the reciprocal of time duration as weighting factor to calculate the weighted proportion of FCI.. Explanations are as follows: In the hospital i, the proportion of unable-to-pay cases is u_i/n_i, where u_i = numbers of unable-to-pay and n_i = sample size in the hospital i. In each hospital, the sample n_i is recruited in m_i months; thus, the contribution of the hospital i is n_i/m_i, where m_i = total months of the study.

Therefore, the weighted average of u_i/n_i is $\sum \left(\frac{ui}{ni}\right)\left(\frac{ni}{mi}\right) \Big/ \sum \left(\frac{ni}{mi}\right)$

or = $\sum \left(\frac{ui}{mi}\right) \Big/ \sum \left(\frac{ni}{mi}\right)$

b) The incidence of FCI among out-of-pocket in-patients in Songkhla Province

As shown in Table 2.24, the incidence of FCI depended on the definitions. By the first definition, FCI as inability-to-pay cases, FCI incidence was 21.5%. According to second definition of FCI, on one hand, if we considered that school dropout as an indicator for financial catastrophe, the magnitude of FCI was 0.36%. On the other hand, if we considered indebtedness as indicator, the FCI incidence was 4.85%. By the last definition, FCI as case whose admission incurred out-of-pocket expenses greater than 15% of annual family income, the incidence was 7.5%

Table 2.24: Weighted proportion of FCI in various definitions

	SIZE	MONTH	WEIGHT (W)	UNABLE-TO-PAY (U)			UNABLE-TO-PAY & SCHOOL DROP-OUT(X)			UNABLE-TO-PAY & INDEBTEDNESS (Y)			>=15% OF INCOME (Z)		
Hosp	n_i	m_i	n_i/m_i	u_i	P1 = u_i/n_i	W*P1	x_i	P2 = x_i/n_i	W*P2	y_i	P3 = y_i/n_i	W*P3	z_i	P4 = z_i/n_i	W*P4
Comm.	332	4	83	79	.238	19.75	1	.003	.249	23	.069	5.73	5	.015	1.245
SK	300	4	75	77	.257	19.28	2	.007	.525	20	.067	5.03	10	.033	2.475
HY	295	5	59	76	.258	15.22	2	.007	.413	14	.047	2.77	27	.092	5.428
PSU	299	5	59.8	110	.368	22.01	1	.003	.124	29	.097	3.99	44	.147	6.05
RYD	258	6	43	0	0	0	0	0	0	0	0	0	48	.186	11.123
FU	247	6	41.17	8	.032	1.31	0	0	0	0	0	0	5	.020	.86
All	1731			350			6			86			139		
			ΣW = 360.97			Σ(W*P1) =77.57			Σ(W*P2) = 1.31			Σ(W*P3) =17.52			Σ(W*P4) =27.18
Weighted proportion = Σ(W*P) / ΣW						= 21.5%	0.36%			4.85%			7.53%		

Note: The unit of data is number of cases. Month =study month, Size n= sample, size N= total out-of-pocket, Unable-to-pay = in-patients who are unable to pay the whole bills, >=15% of income = Out-of-pocket expense >= 15% of income.

12. Computation of financial requirements for protection against FCI among out-of-pocket admissions in Songkhla Province

In FCI-1 study, our sample were assumed to represent a population of out-of-pocket admissions in Songkhla during 6 months period. The assumption in our calculation is that there are no seasonal variation in a year and very few readmission rate. The subsidization is the amount of what the hospital charged minus what the patient or family paid. For better understanding, the data are displayed by graph in Figure 2.3, and Figure 2.4.

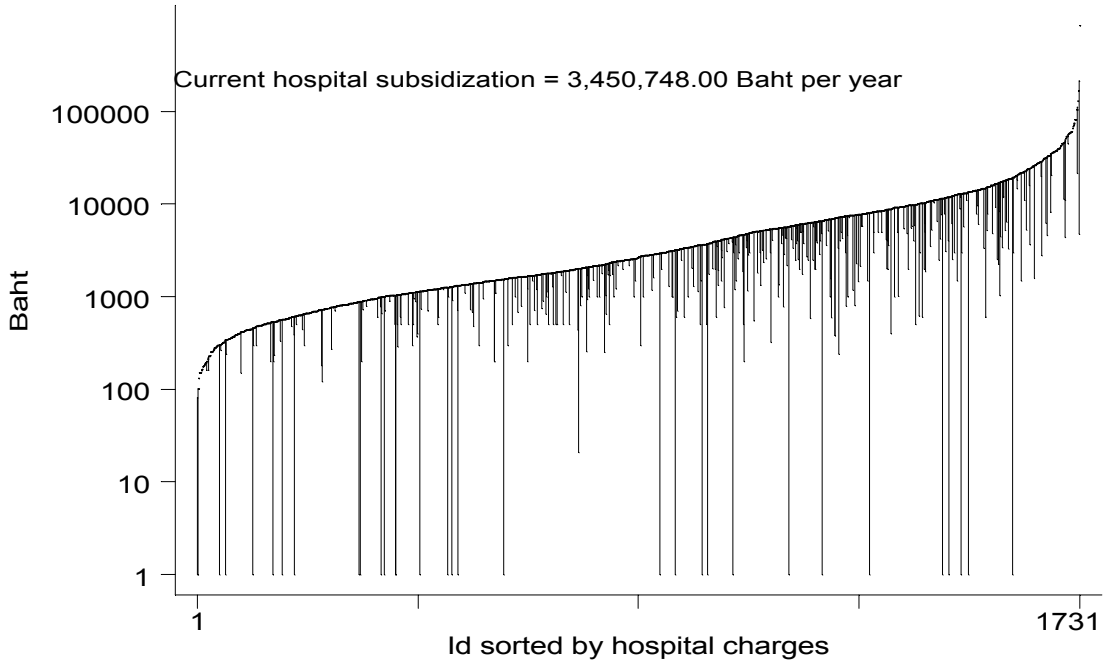


Figure 2.3: Charges, paid and hospital subsidization

In Figure 2.3, a smooth curve line represents total charges for admission. The order of subject is sorted by hospital charges A vertical line joins two variables of each subject. The upper end is the charges and the lower end is the amount of money paid to the hospital. Thus, the line reflects the subsidization from the hospital. Since Y-axis is in logarithmic scale, the length does not represent the amount. The total amount of subsidization in current situation is 3,450,748 Baht per annum.

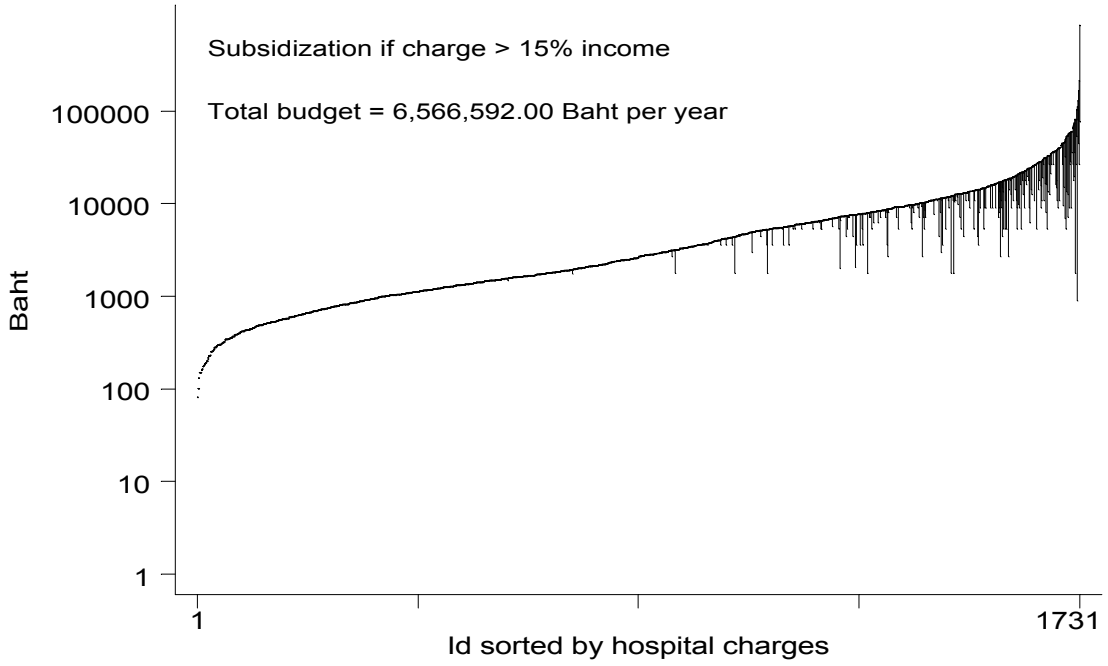


Figure 2.4: Subsidization amount & FCI prevented

It was evident that some of these patients had to cope very hard with the payment before getting hospital support. If we consider that each patient or family should not pay more than 15 percent of gross annual income for a single admission, the subsidization would change into Figure 2.4. All subjects with low charges (~ 1000 Baht per admission) will have no subsidization because this level of charges would be covered by their own family income. In contrast, there is a dense subsidization in the right-upper side of the curve. These actually cost a lot of money because they are in the upper part of the logarithmic scale. The total amount of subsidization becomes 6,566,592 Baht per year.

The total population in Songkhla are 1.201,801 in 1999 with approximately 30 percent (355,321 population) of the uninsured. To protect FCI among the insured, if health insurance is considered as source of funding to raise 7 million Baht per year, every currently uninsured should contribute about 20 Baht premium per year and pay user charges of not more than 15 percent of annual income for each hospitalization.

Summary Of The Chapter

A sample of 1731 was collected in 6 types of hospitals in Songkhla during November 1998 to April 1999. Out-of-pocket inpatients who were Songkhla residents ranged from 4-38% of total admissions in the study hospitals. The distribution of the sample varied from 14-19% among 6 types of hospitals. Medical cases, Obstetrics & Gynecology and Surgical cases accounted for 42.3, 26.5 and 17.1% respectively. Most of respondents were patients themselves. They were mainly middle aged, female, married, low educated, poorer employment status. Most of them were unskilled employees, jobless and dependents. They resided in urban and rural equally.

Average monthly income of the families in each hospital varied from 7145 to 33502 Baht. The patients who sought care at private hospitals had higher average income than those of government hospitals. As a first step, most families used any available cash or savings as source of finance to pay for the bills in the current admission. 89% used their cash or mobilized savings and 8% borrowed cash as finance source to pay the first bill. Whilst 21 percent of cases had to borrow cash as one of finance sources and 20 percent negotiated with medical social workers for waiving the bills in this admission. Among those who reported financial implications after payment, 37 percent of total suffered to reduce essential consumption in daily life, nearly 1 percent faced with school leaving of the children, and 11 percent were indebtedness.

Finding from time-series data also showed that family resources used for paying the bills mainly derived from intra-household. Eighty-eight out of 144 time-series patients (61%) were completely covered by intra-household resources. 10% of cases used their intra-household resources first and then asked for discount at the day of discharge. Nearly 5% of cases first postponed the bill but could finally pay by intra-household resources. The other 5% used intra-household resources followed by asking fee exemption at the day of discharge.

Reported ATP during hospital stay was less than actual ATP at the day of discharge. It seemed that individuals' self report ATP tended to be under reporting. According to medical uncertainty, the families suffered to financial insecurity over the time. The sufferings to the costs ended when the treatment was over. Higher ability to pay at the end of admission was not straightforward. It should be interpreted with caution, either ability-to-pay was due to hospitals demanding them to pay all or they coped themselves by mobilize extra resources to pay all the bills. Ability to pay for this admission might be reduced due to the patient / family sought care elsewhere before admitted to this hospital. However, subgroup analysis showed that reported ATP among the patients who ever sought care prior to admission were slightly poor than the whole subjects

Family's ability to pay increased by income quintile. Higher income patients had much reported and actual ability to pay than lower income. Family's ability to pay was different from one hospital to another. Those who could not afford for hospital bills either in part or the whole bills accounted 0%, 3.2%, 23.8%, 25.7%, 25.8% and 36.8% for Rajyindee, Friendship Unity, Community, Songkhla, Hat-Yai and PSU Hospital respectively.

Our analysis showed that some important socio-economics determinants of the patient such as education, occupation, and household income were highly associated with family's ability to pay for hospital bills. Whereas we did not have evidence that some social factors such as place of residence and religion had an association with family's ability to pay. On average, half of out-of-pocket in-patients were affordable at the expenses of 14700 Baht (life-table method).

Hospital charges and LOS among government hospitals were increased when level of facilities increased. Whilst out-of-pocket expenses to charges ratio declined when level of facilities were higher. In other words, average out-of-pocket expenses decreased as charge increased. Charges as % annual income by income decile ranged from 3.8% in the richest to 13.5% in the poorest. While out-of-pocket expense by

income decile ranged from 3.7 to 25.8 % of annual income. The gap of difference between charge/income and out-of-pocket expense/income provided us about requirement of financial assistance. Charge as percent of income in unable-to-pay was 3 times higher than able-to-pay group. Case-mix index, LOS, and charges were statistically difference between able vs. unable-to-pay group.The share of out-of-pockets, out-of-pocket expenses as percentage of annual income varied from 1.8 to 13.4 percent of annual income(average 6.1).

Nearly 72 percent of all sample had out-of-pocket less than 5 percent of annual income. Out-of-pocket expenses exceeding 5, 10, 15, and 20 percent of income accounted for 28, 14, 8, and 5 percent respectively. It was evident that there was a disproportionate share of total billings among the patients with high out-of-pocket expenses relative to income.

Ten most common DRGs were Esophagitis & gastroenteritis age >17 (DRG 183), Vaginal delivery (373), Caesarean section (371), Other antepartum diagnoses (384), Fever of unknown origin age>17 (420), Kidney & Urinary tract infection age>17 (321), Esophagitis & gastroenteritis age 0-17 (184), Poisoning & drug toxic effect age >17 (450), Viral illness age>17 (421), and Otitis media & URI age>17 (69)

Ten most high-cost DRGs by charges were Tracheostomy except for face, mouth & neck diagnoses (DRG 483), Craniotomy age 0-17 (3), Lymphoma & Leukemia (400), Urethral stricture age 0-17 (330), Cerebrovascular disorder except TIA (14), Uterine & Adnexal procedures for non-malignancy (358), Endocrine disorders (301), Poisoning & drug toxic effect age 0-17 (451) , Lower extrimity & Humerus procedures except hip, foot, femur age >17 (219), and Craniotomy for trauma age>17 (2). However, it was not appropriate to consider high-cost DRGs by charges because only 4 DRGs had relative weight greater than 2.

The incidence of FCI among out-of-pocket inpatients in Songkhla Province varied by the definitions. If defined FCI as inability-to-pay cases requesting fee exemption, the incidence was 20.5% If we considered that inability to pay and school dropout as an indicator for financially catastrophe, FCI incidence was 0.36%. If inability-to-pay and indebtedness is considered as an indicator of financial catastrophe, FCI incidence was 4.85%. If out-of-pocket expenses incurred greater than 15% of annual family income for a single admission is considered as FCI, the incidence was 7.5%.

According to the fee exemption policy for those who are unable to pay, total hospital subsidization among out-of-pocket in-patients in Songkhla was 3.45 million Baht per year. If we consider that each patient or family should not pay more than 15 percent of gross annual income for a single admission, the government or the hospitals have to subsidy about 6.56 million Baht per year. To protect FCI, if health insurance is considered as source of funding to raise 7 million Baht per year, every currently uninsured should contribute about 20 Baht for premium per year and pay for user charges of not more than 15 percent of annual income for each hospitalization.

Chapter 3: FCI-2 STUDY

Rationale Of This Study

This study aimed to complement the FCI-1 study in two aspects. Firstly, it helped to increase FCI subjects in case of a few FCI in-patients was found in the FCI-1 study. Secondly, this study selected the patients who needed financial assistance from medical social workers. These kind of patients tend to be more inability to pay, more financial catastrophe than the selected out-of-pocket in-patients in the FCI-1 study. It would give us a good understanding about FCI in the Thai context.

Specific Objectives Of FCI-2 Study

1) To document about family's ability to pay and the socio-demographic characteristics among unable-to-pay, out-of-pocket in-patients in Songkhla Province who ask for waiving the bills in the study hospitals
2) To identify and describe financial coping strategies of the families for the costs of illness.
3) To explore family's coping strategies in terms of types and sequence of resource used and financial consequences after strategies adopted
4) To document about disease profiles (diagnosis by DRG), clinical outcome, length of stay, hospital charges, and affordable out-of-pocket expenses among FCI patients.

Methodology

1) Study design

Both qualitative and qualitative methods were employed in this study. Quantitative research was prospectively hospital-based survey which aimed to conduct completely within 2 months of May and June 1999. Study hospitals were purposively selected in the two large hospitals of Songkhla Province, namely, Hat-Yai Hospital and PSU Hospital. Whilst qualitative research was conducted between April and June by using in-depth interviewing technique in PSU Hospital.

A. Hospital based survey

1) Subjects

Study patients were currently admitted patients who negotiated with medical social workers for waiving the bills in the study period.

- Inclusion criteria; admitted patients who resided in Songkhla and paid out-of-pocket for medical bills
- Exclusion criteria; admitted patients who were CSMBS, SSS&WCS, TAPS and Health Card beneficiaries and those who received PWS benefits (LICS, children under 12, elderly above 60, handicaps, and etc.) in MoPH hospitals

2) Sample size was calculated based on hospital's statistics. There were approximately 100 and 50 Songkhla residents per month who negotiated with medical social workers in Hat-Yai, and PSU Hospital respectively. A total of 300 cases were recruited.

3) Method and data collection; The same structured-questionnaire used in the FCI-1 study was used in this study. All patients who admitted in the study period and fitted

to selection criteria were recruited. For PSU Hospital, Index cases were identified by medical social workers at the day of consultation for waiving the bills and interviewed by trained nurse at ward before discharge. While Hat-Yai Hospital, according to its system, most index cases had consulted medical social workers at the day of discharge, so the interviews took place in the social department by trained medical social workers.

4) Outcome variable of interest is Ability to pay (ATP). Independent variables were socio-demographic characteristics, family resources, disease profiles (DRG), clinical outcome, length of stay, affordable out-of-pocket expenses and hospital charges

5) Data analysis; descriptive statistics were employed.

B. Qualitative research (in-depth interview)

Subjects were in-patients who incurred medical expenses above 40000 Baht, resided in Songkhla Province, and declared not being able to pay the bills. Eligible patients were identified from social department of PSU Hospital. 25 patients residing in Songkhla Province who currently admitted during April to June 1999 and 13 patients residing in Hat-Yai District who recently discharged from the study hospital during January to March 1999 were recruited. The investigator used the first registered address to meet the eligible patients' home. Only 8 new patients who resided in Hat-Yai District were asked for permission to visit their home too. The interviews took place both in admitted wards and patients' home. Home-visit technique was aimed to triangulate the quality of data collected. An open-end semi-structured questions were used to guide the interviews. The in-depth interviews were taken from the patient or relatives who deal with medical expenses.

Results

A. FCI-2 Study (Quantitative) Results:

1) General descriptive

Table 3.1: Numbers of inability-to-pay cases by department in the study period

Department \ Hospital	Hat-Yai			PSU		
	N1	n1	n1/N1*100	N2	n2	n2/N2* 100
OBGYN	2320	48	2.07	931	12	1.29
SURGERY	1107	96	8.67	946	26	2.75
MEDINE	1035	52	5.02	1133	17	1.50
PEDIATRICS	564	1	0.18	899	24	2.67
ORTHOPEDICS	411	2	0.49	248	11	4.44
EENT	480	2	0.42	531	9	1.69
OTHERS	2	0	0.00	34	0	0.00
Total	5919	201	3.40	4722	99	2.10

Note: N1 and N2 = total hospital admissions in Hat-Yai and PSU. n1 and n2 = eligible cases

Inability-to-pay events in Hat-Yai Hospital varied from 0-8.67 percent of total admissions while those in PSU Hospital varied from 0-4.44 percent. Surgical and medical cases of Hat-Yai Hospital, and surgical, orthopedics, and pediatrics cases of Songklanagarind Hospital were frequently faced with inability-to-pay.

2) Socio-demographic characteristics

Table 3.2: Demographic characteristics

Demographic characteristics	Patient	Relative
Respondent; cases (percent)	108 (36%)	192 (64%)
Age in year; mean (SD)	35(18)	38 (12)
Sex; male % (female %)	36 (64)	50 (50)
Education; primary school & below	76%	80%
Education; secondary school & above	24%	20%
	** Only patient's characteristics **	
Marital status, percent	married 67, single 17 and others 16	
Occupation, percent	unskilled employees 50 no job / housewife / student / aged 44 others 6	
Place of residence, percent	urban 34 and rural 66	
District-specific, percent	Amphur Hat-Yai 41, Sadao 11, Ratthaphum 8, Others 40	
Religion	Buddhist 88.0, Islam 11.7 and Others 0.3	
Source of revenue, percent	Employment 69, Agriculture 20 Trade / merchant 8 and Others 3	

36 percent of the respondents were patients themselves and 64 percent were their relatives. Only 24% of patients and 20% of relatives had their education above secondary school level. 67 percent of the patients were married, while 17 percent were single and dependent. Unskilled employees accounted for 50% while the groups of jobless, housewife, students, children and elderly were 44%. They were most likely to reside in rural area. Most patients stayed in Amphur Hat-Yai, Sadao, and Ratthaphum. Buddhist were 88.0% and Islam were 11.7%. The principal source of revenue of the families were from employment (69%) and agriculture (20%).

3) Family income

Table 3.3: Average monthly family income

Average family income	Freq (cases)	Percent
=<1000 Baht per month	15	5.0
1001-2800	51	17.0
2801-5000	169	56.3
5001-10000	55	18.3
>10000 Baht	10	3.3
Total	300	100

Using cut-off income of 2800 Baht as poverty line for Low-income card issuance, 22% of cases had their family income below absolute poverty. Only 3% of inability-to-pay sample had monthly income above 10000 Baht.

Table 3.4: Family income

Family income (Baht/month)	Hat-Yai Hospital	PSU Hospital
Minimum	500	200
at Percentile 10	2,300	833
at Percentile 25	3,000	1,917
at Percentile 50	4,000	3,000
at Percentile 75	5,000	4,833
at Percentile 90	6,500	8,000
Maximum	20,000	30,000
Mean+/-SD.	4,551 +/- 2,500	4,141 +/- 4,163

Most of the patients in PSU Hospital had average monthly income less than those in Hat-Yai Hospital. Median income were 4000 and 3000 Baht in Hat-Yai and PSU Hospital respectively.

4) Current admission

4.1) Seek care behavior

Table 3.5: Seek care behavior before this admission (>1 answers)

	Frequency (cases)
Ever seek care	100 / total 300 cases
Seek care at -health center -clinic/polyclinic -government hospital -private hospital	 7 19 87 5

*Note that the sum of percent is greater than 100% because the questions asked are non mutually exclusive choice.

One-third of cases sought care prior to this admission. 87 percent of cases sought care at government hospitals while 19 and 5 percent sought care at private clinic and private hospital respectively.

4.2) Resource use

Table 3.6: First source of money used for paying the bills

First money use	Freq	Percent
Cash /Savings	135	52.3
Borrowing	94	36.4
Sales of store / stock	8	3.1
Sales of value assets	6	2.3
Networks	15	5.8
Total	258	100

Note: Networks refer to resources from family's network and/or social networks

Cash / Savings was the most common resources use to pay the first bill. 36.4 percent of cases had no enough cash for payment, they had to borrow cash from informal money lenders, friends and their kin.

Table 3.7: Source of finance for paying all the bills in this admission (>1 answers)

Source of finance	Freq	Percent
Cash	221	73.0
Savings	40	13.3
Sale of value asset	14	4.7
Sale of store / stock	11	3.7
Borrowing	187	62.3
Networks	27	9.0
Partial/ Full fee exemption	300	100.0

All sample had to ask for exemption either partially or fully hospital bills. 73 percent of cases used their case flow while 62 percent had to borrow cash as one of payment source for paying the bills in this admission

4.3) Financial implications

Table 3.8: Financial implications due to payment for hospital bills

Impact of payment	Freq. (case)	Percent of sample (total=297)
Reduction of essential consumption	204	68.7
School leaving	8	2.69
Indebtedness	85	28.6

69 percent of cases reported that they had impacts on their future food consumption. Approximately 28% stated that their income would be reduced due to indebtedness. Nearly 3% of cases reported that children would leave school due to payment although they got exemption from the hospital.

5) Length of stay, hospital charges, and affordable out-of-pocket expenses

Table 3.9: Average LOS, hospital charge, and out-of-pocket expenses

	Hat-Yai. (201 cases)	PSU. (98 cases)	Total (299 cases)
1. LOS			
mean	9.9	19.2	12.9
SD	15.3	19.6	17.4
min	2	3	2
max	140	132	140
2.CHARGE			
mean	13,873	19,659	15,769
SD	31,705	31,834	31,811
min	991	1605	991
max	277,831	222,274	277,831
3. Out-of-pocket expense/ charge ratio			
mean	43.3	26.0	37.6
SD	22.6	20.3	23.3
min	0	0	0
max	93.0	87.9	93.0
4. Out-of-pocket expense as % annual income			
mean	9.7	12.7	10.7
SD	16.5	25.1	19.8
min	0	0	0
max	149.3	213.8	213.8

The patients in the PSU Hospital stayed two-fold longer and were charged higher than those in Hat-Yai Hospital. Out-of-pocket to charge ratio of Hat-Yai was higher than PSU, 43% compared to 26%. The reason might be due to Hat-Yai patients had higher average income and relatively lower charges. The share of out-of-pocket payment accounted for 9.7-12.7 percent of their annual family income. On average, inability to pay patients have to pay 10.7 percent of annual income for this admission.

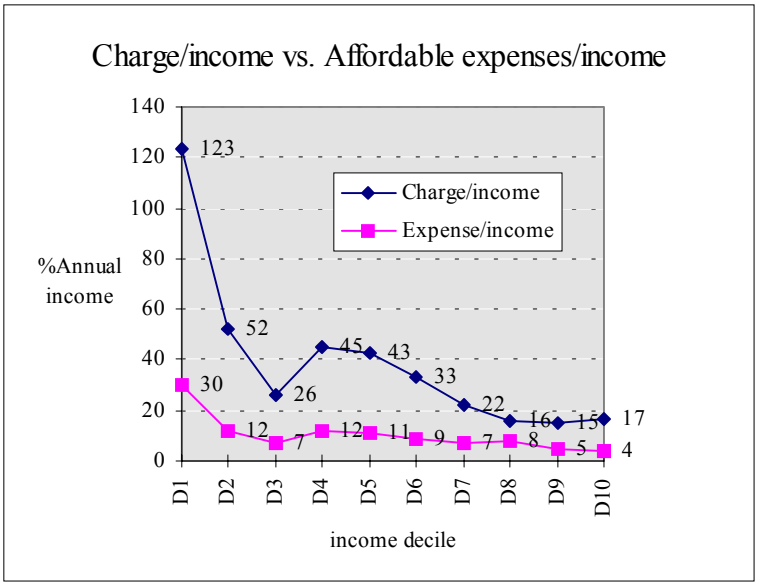


Figure 3.1: Charge/income and out-of-pocket expenses/income

Charges as % annual income by income decile ranged from 17% in the richest to 123% in the poorest. While out-of-pocket expense ranged from 4 to 30 % of annual income. The gap difference implied the level of financial assistance needed. The lowest two income decile carried a very great financial burden than than other decile.

6) Out-of-pocket expenses as percent of family income

Table 3.10: Total hospital charges incurred by all sample and patients with out-of-pocket expenses exceeding 5, 10, 15 and 20 percent of Family income

Out of pocket expenses as % family income	Number of sample (case)	Percent of sample	Total charges (Baht)	Percent of Total charges
more than 5%	155	52	3,469,738	74
more than 10%	75	25	2,411,030	51
more than 15%	49	16	1,926,096	41
more than 20%	37	12	1,603,834	34
All sample	300	100	4,717,981	100

Nearly 48 percent of all sample had out-of-pockets less than 5 percent of annual income. Out-of-pocket expenses exceeding 5, 10, 15, and 20 percent of income accounted for 52, 25, 16, and 12 percent respectively. The patients with high out-of-pocket expenses relative to their income incurred total hospital charges that represent a disproportionate share of all charges of all sample. For example, patients with out-of-pocket expenses exceeding 15 percent of income constituted 16 percent of all sample, yet accounted for 41 percent of total hospital charges.

7) Hospital charges, LOS and clinical outcome by department

Table 3.11: Hospital stay by department

	Length of stay (LOS)				
Department	N	mean	SD.	min	max
OBGYN	60	7.5	8.7	2	53
Surgery	122	14.4	21.3	2	140
Medicine	69	10.3	10.9	2	79
Pediatrics	25	20.1	22.3	2	98
Total	276				

Only 276 out of 300 inpatients admitted in 4 major departments are re-explored. Pediatrics and surgical cases stayed longer than others in the 2 study hospitals.

Table 3.12: Hospital charges by department

	Hospital Charges (Baht)				
Department	N	mean	SD	min	max
OBGYN	60	5,784	5,467	1,136	32,337
Surgery	122	20,798	36,720	1,624	277,831
Medicine	69	13,401	34,740	991	222,274
Pediatrics	25	15,783	25,579	2,581	126,978
Total	276				

Surgical and Pediatrics cases were more costly than others.

Table 3.13: Clinical outcome by department

	Clinical outcome, case (percent)				
Department	improved	not improved	referred	dead	Total
OBGYN	60 (100)	-	-	-	60
SURG	113 (92.6)	2 (1.6)	2 (1.6)	5 (4.1)	122
MED	59 (85.5)	5 (7.3)	3 (4.4)	2 (2.9)	69
PED	25 (100)	-	-	-	25
Total	257 (93.1)	7 (2.5)	5 (1.8)	7 (2.5)	276

Among 276 cases of 4 major departments, 93 percent had good clinical outcome. Approximately 2 percent had to refer to higher facility level while 2.5% were death. All OBGYN and Pediatrics cases had good clinical outcome. Surgical cases had more chance to die than others whereas medical cases tended to had more chance to refer.

8) Disease profile and DRGs

All unable-to-pay cases were re-grouped by DRG grouper software. There were 116 numbers of DRG with relative weight ranging from 0.1 to 6.57. Approximately 9 percent of cases, 28 records, had no meaningful DRG (RW=0)

Table 3.14: Ten most common DRG, mean charges and average LOS (FCI-2 study)

RW	DRG	DRG Description	N	Charge	LOS
.30	373	Vaginal Delivery W/O Complicating Diagnoses	20	1,865	4
.85	371	Cesarean Section W/O CC	17	8,914	7
2.49	468	Extensive O.R. Procedure unrelated to Principle Diagnosis	17	20,291	17
.57	167	Appendectomy W/O Complicated Principal Diag W/O CC	15	6,923	5
3.39	486	Other O.R. Procedures for Multiple Significant Trauma	14	29,712	13
.39	384	Other Antepartum Diagnoses W/O Medical Complications	7	3,073	4
1.99	489	HIV W Major Related Condition	6	3,670	5
.75	90	Simple Pneumonia & Pleurisy age >17 W/O CC	5	7,932	38
1.29	165	Appendectomy W Complicated Principal Diag W/O CC	5	11,794	13
1.15	367	Malignancy, Female Reproductive System W/O CC	5	9,226	14
	Total	271 Cases	111	=41%	

Ten most common DRGs were shown in Table 3.14. It accounted 41% of cases. DRG486 were substantially high charges. DRG90 had longer hospital stay than others but not high charges.

Table 3.15: Ten most high-cost DRGs by mean charges and average LOS (FCI-2 study)

RW	DRG	DRG Description	N	CHARGE	LOS
6.57	484	Craniotomy for Multiple Significant Trauma	2	202,480	77
5.71	483	Tracheostomy except for Face, Mouth & Neck Diagnoses	1	191,427	79
1.62	443	Other O.R. Procedures For Injuries W/O Cc	1	134,412	140
1.45	180	G.I. Obstruction w CC	2	71,371	34
1.14	388	Rematurity w/o Major Problems	1	47,675	55
.85	236	Fractures of Hip & Pelvis	1	44,293	31
.91	222	Knee Procedures w/o CC (No Longer Valid 98)	2	41,597	53
.91	219	Lower Extrem & Humer Proc except Hip, Foot, Femur Age >17 w/o CC	2	40,668	15

2.77	217	Wnd Debrid & Skn Grft except Hand, for Muscskelet & Conn Tiss	1	37,037	39
1.24	407	Myeloprolif Disord or Poorly Diff Neopl w Maj O.R.Proc w/o CC	1	36,748	30
	Total	271 Cases	14	14/271=5.2	

Ten most high-cost DRG by charges accounted for 5.2 percent of cases. Relative weight ranged from .85 to 6.57. All DRGs had charges greater than 36000 Baht. Only 7 DRGs had relative weight greater than 2. Thus, if defined high-cost DRG by charges, there would be a lot of low-RW DRGs falling into high-cost DRGs.

B. Qualitative Study Results:

1. General background

Twenty-six male and 12 female out-of-pocket in-patients were recruited in the in-depth qualitative interviews. All were unable to pay in-patients residing in Songkhla Province, whose admission incurred medical expenses more than 40,000 Baht, and was negotiated with a medical social worker for waiving of the bills. Patient's age ranged from newborn to 81 years old. Numbers of family members varied from 1 to 15 persons. Family income ranged from 0-20,000 Baht per month: 13 cases had a family income between 3000 and 8000 Baht per month, 9 had less than 3000 Baht, and 8 had no income. The majority of cases had neither savings (30 cases) nor land or house ownership (29 cases). Principal source of income came from wages employment (20 cases). Injury-related illness, infectious disease, and cancer were the three most common leading causes of admissions in this group. The outcome of eighteen cases was improvement or free of the illness, followed by 13 cases not cured or disabled and 7 deaths.

2. Coping strategies

Financial coping strategies were analyzed in two dimensions: type of coping strategies and sequence of resource use. Table 3.1.6 summarizes 6 coping strategies to deal with the costs of treatment. Twenty-two families chose more than one strategy and 9 families chose more than two strategies to cope with the costs. The majority of cases used cash or savings as the first coping strategy.

Table 3.16: Type and frequency of coping strategies

Types	No. of cases (total = 38)
Cash / Savings	25
Family networks	22
Loans	12
Asset sales (+ pawn + mortgage)	6
Free care "No pay"	5
Community support	1

The following section explains each type of coping strategies in more detail.
(1) Using cash / savings
At first, most families used any available cash or savings to pay for hospital bills. The amount was generally insufficient. If cash or savings were not available, other resources were considered. In our sample, 13 cases had no cash / savings to pay.

(2) Family networks
Help from family networks, such as kin or ones who were outside and closely linked to the families, was the second most common response if the cash was not sufficient or lacking. Fourteen out of 38 cases relied on their family networks and half of these used family networks alone.

> " My wife and I held health card but it expired one month ago. I must pay the fees myself. I paid 400 Baht cash from out-of-pocket. I have sold 3 cows for 7000 Baht. My two sons who have their own families gave me 5000 Baht for care. All the money was prepared to buy medicine for my wife and for daily expenditures. I don't know how long she would have to stay at the hospital. I keep the money and pay just 300-500 Baht each time. That is why I am indebted to the hospital too much. " (husband of a 45-year-old female patient - JE encephalitis)

> " My husband and I have no income. Usually, we depend for everything for daily living on my eldest daughter. Her family taps the rubber tree and earns approximately 8000 Baht per month. She took responsibility about my medical fees since I was admitted in Hat-Yai Hospital last year. In recent admission at PSU, she paid cash to buy medicine several times. We have 4 sons and daughters. Other sons and daughters find it hard to bear the medical costs. However, all of them try their best. (a 60-year-old female patient - carcinoma of cervix)

> " My wife and I have many brothers and sisters. But nobody can help each other. Now, we have no money, we don't know where we will find money. We expected that only our Chinese boss could help us. We worked with him in the rubber plant for a long time. He knew about the accident since the first day. He agreed to bear the costs. " (husband of a 40-year-old female patient - traumatic avulsion scalp wound)

(3) Loans
Taking loans was one of the responses for those who had credit or a guarantee that the families were in a position to pay back. Usually the interest rate was 10-20% per month except for loans from kin which were interest-free.

> " I have used up all my savings. I have to borrow from my relatives and neighborhood 10000 Baht with 10% interest rate for paying the fees. I want my son to be cured. I don't care how much I should pay " (father of a 19-year-old male patient - JE encephalitis)

> " In the usual situation, I may borrow cash from my relatives if I need to use it. Because of recent economic crisis, many companies around here are closing their business. The customers who buy curry and rice have decreased. My

income has decreased very much. I don't dare to borrow from anybody because I am afraid that I could not pay them back. My relatives are also faced with the same problem. " (mother of a 12-year-old female patient - SLE with visual involvement)

" My daughter does not dare to borrow from anyone because she is not confident that she can pay back to the creditors. " (a 60-year-old female patient - carcinoma of cervix)

" Since the economic downturn, it is hard to gain income at a regular level. I am not sure about my business (sale of second-hand clothes). If I am not in a position to pay back, I will lose my credits and trusts. I don't want to break my promise. " (a daughter of 61-year-old male patient - carcinoma of esophagus)

Taking loan was inhibited in Islam families due to sin.

" Taking a loan with interest is a sin to both loanees and creditors in our society. You can borrow from neighbourhoods / non-kin free of interest, but there will be repaid by other way. However, you cannot ask for help from anyone clearly (openly) , for example, through the mosque. It is a sin, you cannot do it. " (a brother-in-law of a 42 year-old male patient - necrotizing fasciitis with sepsis & Diabetes Mellitus)

(4) The sale of assets

The sale of assets in the form of agricultural stocks, valuable ornaments and furniture was a widespread response to financial crises if the family did not possess sufficient cash / savings. Land sales and sale of productive assets were not found in our study.

" In a rural community, people frequently raise animals as a saving bank. If one had animals, that was better to sell them when cash was short. It is more convenient than withdrawing from a savings account. I kept one cow and one pig for breeding. Recently I got one calf and a cattle of pig. Since my son was ill, I paid all my deposited money and sold all these new generation animals too. " (father of a 19-year-old male patient - JE encephalitis)

" I intended to raise 3 cows for sale whenever I needed money. I have sold them all since my wife was ill " (husband of a 45-year-old female patient - JE encephalitis)

" I intended to bring land to sell or mortgage, but nobody bought it because it is in the name of my son. " (mother of a 15-year-old female patient - brain tumor)

(5) Community support

Help from non-kin was not an uncommon response. Most assistance was from their friends and neighbours.

" The financial officials told us that all medical expenses were more than 100,000 Baht. According to the road-traffic accident Act, insurance company absorbed at least 50000 Baht. This case is still in the court. We paid more than 20000 Baht and asked for fee exemption for the remainder. We could not

> afford it unless we got a lot of assistance from friends and neighbors ” (wife of a 42-year-old male patient - head injury, road traffic accident victim)

A wide-scale community support which always was community-initiated was not common unless the families were suffering from a large medical expenditures. Not everyone could get community support unless they were good enough in society's view.

> “ I have had end-stage kidney disease since March 1998. I have to visit hospital to have hemodialysis very often and pay the costs of about 2000 Baht for each visit. This time, the doctor made an appointment to do kidney transplant using my son's kidney. I knew that the costs were expensive because we were both operated upon. Far and near neighbourhood knew this, they were willing to help me to collect extra money by holding a Thai vermicelli party. The donation was more than 90000 Baht. ” (a 38-year-old male patient - end stage renal disease)

> “ At the party, which seldom happens, the neighbours will tell one another. One brought the curry and the other brought the vermicelli to the party. Everyone will use such opportunity to donate some money for them to meet the expenditures. He and his family were very kind and were associated with other in the community. He always helped other people nearby and far. Therefore, when peple heard that he and his son would take major operative procedure, everyone was willing to help them. ” (The president of health volunteers who know the 38-year-old male patient - end stage renal disease)

In urban area of large city, access to community support seems to be difficult, especially in the case of immigrants.

> “ I came to see the Mayor of Hat-Yai municipality. I thought that he could help me but he was out. The secretary suggested that I meet the social welfare workers. The officials told me that he cannot help because we have no address in Hat-Yai District ” (wife of a 36-year-old male patient - head injury, road traffic accident victim)

(6) Free care

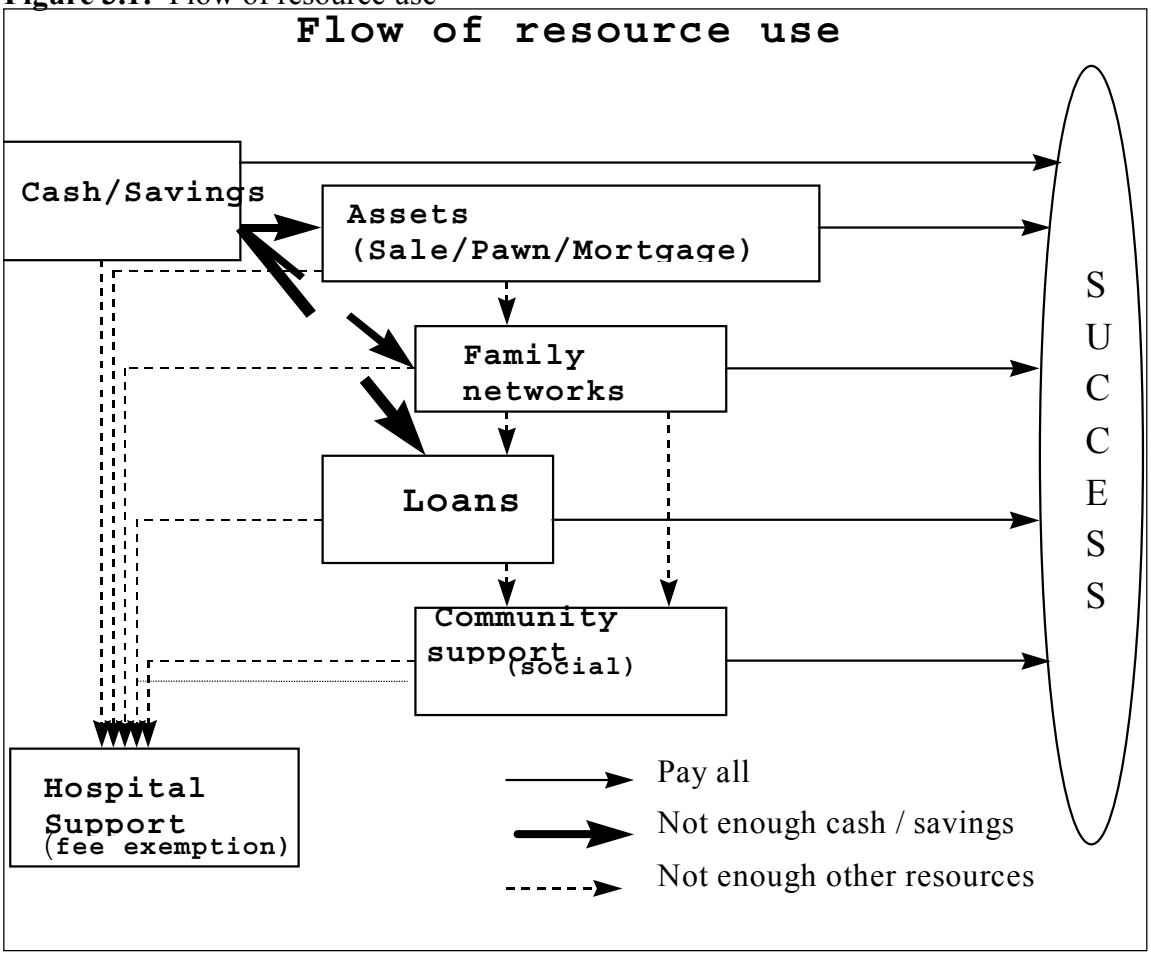
There were 5 cases who had neither cash / assets nor family networks and received free care in this study.

> “ I did not pay any medical fees because right now I have no money (she is crying). I asked to make allowances for paying by instalment if the hospital would permit me to do so.” (mother of a premature baby, one-day-old, older twins - twins & prematurity)

In summary, all the types and possible sequences of resource mobilization are depicted in Figure 6.1. Cash or savings if available was the first resource used to meet hospital bills. If medical expenses were not large relative to patient / family income, cash / savings completely covered the bills. However, it was generally insufficient so that the families had to look for other resources. Exchanging the assets for cash, asking help from family networks, and taking loans were the second line of resource used if cash / saving was not enough. Community support was the other optional

resource used in the case of insufficient cash to meet large medical bills. For those who have only cash / savings, no kinship and /or assets, they could get waiving of the bills exceeding their ability to pay.

Figure 3.1: Flow of resource use



3. Consequences to the families

Several consequences ensued along with the illnesses. Immediate effects were stress and emotional disequilibrium among family members such as loss of household production in case of no labor substitutions, loss of family members / head of the families if the illness was too severe, and loss of income / asset due to payment. For short-term effects, production loss still persisted if the patient who was an income earner was in the period of recovery. Moreover, those who were indebted and whose assets already pledged / mortgaged, needed to find an extra sum of money. Longer term effects were imposed on those who became disabled depending upon the amount of family and social support sought. If the patients were the heads of the families or the principal income-earners, the situations after illness were even more severe than ones who were just the family members.

> " After operation, both my husband and my son came back to rest at home. I struggled and worked hard to earn money for the families. I could not tap my own rubber plants because it was far from home. I usually went there with my husband. I was hired to tap neighbour's rubber plants to earn 150 Baht per day. However, I earned only a little in this period because it was raining very

> often. Now, my husband is better. He can drive a car to buy second-hand clothes with me and go to sell at the fair market. At the same time, my son goes out to work to gain money to pay his creditors. " (wife of 38-year-old male patient - end stage renal disease)

> " After amputation, I suffer a lot. In the past, I had two legs. Although my eye could see only a little, I could move from one place to another and was able to sell the things in my home. Now, I cannot earn by myself. I cannot go to meet the doctor because I have no money and riding the motor-bike is very difficult at this moment. " (a 56-year-old female patient - diabetes mellitus with foot ulcer)

> " Lacking my husband, I have become the principal income earner instead of a housewife. I earn money from sewing the clothes (a dress). I never did it before. I wish that I could learn more about sewing and tailoring at the vocational school. One of the uncertainties is that I must move out as the sister-in-law insisted. " (widow of 48-year-old male patient - head injury)

4. Exemption policy in the government hospitals

In the current situation, exemption policies exist in the government hospitals, but in practice most of the needy do not know until they cannot pay any more out of pocket. There are 2 reasons that stimulate the families to negotiate with medical social workers. Firstly, the costs of treatment generate financial insecurity in the families. The patients / families are afraid that they could not pay the bills. However, only a few cases fall into this category. Secondly, the patients / families are faced with payment difficulty. They have paid out all their family resources and could not yet find any other resources.

> " I asked for social welfare by myself. I am afraid that I will not have enough money to pay the fees because I have stayed at the hospital for many days. " (a 57-year-old male patient - liver abscess)

> " I have asked for social welfare because I am afraid that I cannot pay all the bills. The doctors told me that I need operation and have to stay many days. " (a 36-year-old male patient - appendiceal abscess)

The majority of cases met medical social workers because they were indebted to hospitals (27 cases). They often came to the social department when they received a notice. Those who asked for waiving of the bills always came by themselves (5 cases). Some came after getting information about exemption policy from their relatives, friends, or the relatives of the in-patient in the next bed (7/38 cases). Since the exemption policy was not well known to everybody, only those who knew either by themselves or were told by someone would get the benefits. This exemption policy prevents income / asset loss in case of expensive medical care. On the other hand, the process of negotiation could not filter those who were the needy or really had no available resources.

> " I did not pay medical expenses for a few days because I had no money. The nurse informed me that medical social workers have a notice for me to see them. " (mother of 7-year-old female patient - non-Hodgkin lymphoma)

> " I am indebted about 30,000 Baht. The officials called to see and ask me to pay at least 8,000-10,000 Baht. The hospital will support the remainder. " (mother of 15-year-old female patient- brain tumor)

> " Social official called me when I was indebted to the hospital about 30000 Baht. Now the business is worse. I don't dare to ask for loan from anyone. I tell her the truth. She agrees and asks me to pay 10000 Baht. The hospital will subsidize the remainder. I am so happy because my relatives can help me with the rest. I would like to thank the medical social officials. We are indebted to the hospital. " (a daughter of a 61-year-old male patient - carcinoma of esophagus)

> " I have never known that the hospital has a social welfare unit. I was greatly worry about medical expenses during my husband's serious illness. I consulted the nurses in the ward. They advised me to meet the social officer. I own 3 rai of land and grow Long Kong plants. I thought that I would have to mortgage the land to meet the expenses. After visiting the social officer, I cancelled the idea because the official agreed to help me. " (wife of a 48-year-old male patient - head injury)

> " I used my savings for the medical fees of my step father. The first bill was more than 40000 Baht. I was anxious very much. I told everything to the nurses. They suggested that I meet the medical social workers. The official guaranteed to help me. I was very happy. " (a daughter of a 69-year-old male patient- congestive heart failure & COPD)

A few families could not access free care when resources became exhausted because they felt ashamed of themselves to ask for waiving of the bills.

> " The doctor told me that I need to have operation. If I insist on refusing, I will be blind. He advised me to meet the social welfare if I do not have enough money. At first, I felt ashamed to tell them. " (a 33-year-old male patient - penetrating injury of the eye, macular hole)

Negotiation process depends on the total amount of debt-bill and the timing whether the patients would be discharged soon or not. Practically, financial negotiation is done based on two approaches. Firstly, social workers would negotiate with the families to pay for a set amount as much as they were able to pay. Beyond a set amount, the hospital would subsidize the remaining costs. Secondly, social workers would negotiate the families to pay as much of the bills as they could. If the remainder was a large amount, social workers would demand the families pay a little bit more before making a decision to subsidize. The latter method is applied more often than the former.

> " The amount of subsidization is decided on a case-by-case basis. However, we interview them to learn of their family's background and negotiate with them to pay as much as they are able to pay. " (a medical social worker)

Summary Of The Chapter

A total of 300 out-of-pocket inpatients residing in Songkhla were collected between May and June 1999. PSU and Hat-Yai Hospital were purposively selected. All were inability-to-pay cases asking for fee exemption. Surgical and medical cases frequently faced with inability-to-pay in Hat-Yai Hospital while orthopedics, pediatrics and surgical cases were common in PSU.

Most of the respondents were the relatives because they were more likely to be those who negotiate with medical social worker. Nearly 80% of them educated lower than secondary school. Major occupation of the patients were unskilled employees, jobless and dependents. They resided in rural rather than urban area. The principal sources of income of the families were from employment and agriculture. Median monthly family income were 4000 Baht in Hat-Yai and 3000 Baht in PSU. 22% of cases had their family income less than 2800 Baht or below poverty line.

Finance sources for paying the first bill mostly derived from cash/savings and borrowing, 52 percent and 36 percent respectively. 62 percent of cases borrowed cash as one of finance source in this admission. Among those who reported financial implication after payment, 69% had to reduce their essential consumption, nearly 3% that the children left from school, and 28% resulted to some degree of indebtedness.

Surgical and paediatric cases definitely stayed longer and more costly than others cases. The share of out-of-pocket payment, or out-of-pocket expenses as percentage of annual income varied from 9.7 to 12.7 (average 10.7)

Nearly 48 percent of all sample had out-of-pockets payment less than 5 percent of annual income. Out-of-pocket expenses exceeding 5, 10, 15, and 20 percent of income accounted for 52, 25, 16, and 12 percent respectively. There was a disproportionate share of total billings among the patients with high out-of-pocket expenses relative to income. For instance, patients with out-of-pocket expenses exceeding 15 percent of income constituted 16 percent of all sample, accounted for 41 percent of total billings.

Ten most common DRGs were Vaginal delivery (DRG 373), Caesarean section (371), Extensive O.R. procedures unrelated to principal diagnosis (468), Appendectomy without complicated principal diagnosis (167), Other O.R. procedures for multiple significant trauma (486), Other antepartum diagnoses (384), HIV with major related problem (489), Simple pneumonia & pleurisy age>17 (90), Appendectomy with complicated principal diagnosis (165), and Malignancy of female reproductive system (367)

Ten most high-cost DRGs by charges were Craniotomy for multiple significant trauma (DRG 484), Tracheostomy except for face, mouth & neck diagnoses (483), Other O.R. procedures for injuries (443), GI obstruction with complication / co-morbidity (180), Prematurity without major problem (388), Fracture of hip & pelvis (236), Knee procedures (222), Lower extremity & Humerus procedures except hip, foot, femur age >17 (219), Wound debridement & skin graft except hand (217), and Myeloprolifeative disorder or poorly differentiate neoplasm with O.R. procedure (407)

Qualitative findings confirmed that cash / savings were the most common resource use. Family networks played an important role if cash / savings were not available. Taking a loan was limited because economic crisis led to difficult to earn money or lose confident of capacity to pay back. Community support was not common unless medical expenses was great. The patient / family who got community support should be guarantee as a best socialized person. If any resources were exhaustive, asking support from the hospitals was the last option. Usually, more than one strategies were used to cope the costs of illness. In addition, several impacts hit to the families. Financial consequences occurred not only at the time of illness but also during rehabilitation period or after being discharged. In particular, ones who borrow money or pledge assets for paying the illness costs, they have to find additional income to pay back the moneylenders.

Exemption policies are not well known by those who need it. A large number of families did not know whether the fee exemption policies existed until they were notified by medical social workers. Only a few, always old case were directly applied for exemption. The rest were introduced by the patients / relatives next to them when payment difficulty arose.

Chapter 4: COMPARISON OF THE RESULTS OF TWO STUDY

Some comparisons between FCI-1 Study and FCI-2 Study
Both studies have unable-to-pay cases getting fee exemption from medical social workers but in different hospital setting. The following aspects are used to compare among able-to-pay group of FCI-1 study, unable-to-pay groups in both studies.

1) Socio-demographic characteristics
Table 4.1 : Differences in socio-demographic characteristics in the two studies

	FCI-1 study, Percent		FCI-2 study, Percent
	able-to-pay	unable-to-pay	unable-to-pay
Respondent			
Patient	77	79	36
Relatives	23	21	64
Age (average in year)	(33)	(33)	(35)
<=15 year	10	8	11
16-30	42	44	34
31-45	26	24	24
46-60	14	17	22
>60 year	8	7	8
Sex			
male	37	38	50
female	63	62	50
Marital status			
married	69	70	66
single	22	19	17
others	9	11	17
Education			
primary school or below	62	75	76
secondary school	23	19	19
> secondary school	15	6	5
Occupation			
skilled	14	6	6
unskilled employee	47	43	50
jobless	39	50	44
Residence			
urban area	53	43	34
rural area	47	51	66
Religion			
Buddhist	87	81	88
Islam	12	18	12
others	1	1	<1
Source of income			
Agriculture	25	28	20
Wages employment	44	57	69
others	31	15	11
Family income			

	FCI-1 study, Percent		FCI-2 study, Percent
	able-to-pay	unable-to-pay	unable-to-pay
<=1000 Baht/month	1	2	5
1001-2800	4	13	17
2801-5000	23	46	56
5001-10000	32	31	18
>10000	40	8	3

The respondents in both studies had somewhat difference because of the study design. In FCI-1 study mainly were the patients who admitted in the ward whereas the relatives were always the cases that negotiate with medical social workers in FCI –2 study. Comparing to able-to-pay group, unable-to-pay patients tended to be lower income, lower education level and employment status. They were also more rural residents. Furthermore, inability-to-pay patients were more likely to be male and older aged. Considering family income <2800 Baht as absolute poverty. Both studies showed that a great number of unable-to-pay patients fell into poverty line. Approximately 15% of unable-to-pay cases in FCI-1 study compared to 22% in FCI-2 study. These patients could not access to be the low-income cardholders.

2) Resource use for paying hospital bills

Table 4.2: First money use in two studies

	FCI-1 study		FCI-2 study
	able-to-pay	unable-to-pay	unable-to-pay
First money use: case (Percent)			
cash /savings	1065 (92)	196 (80)	135 (52)
borrowing	69 (6)	43 (17)	94 (36)
others	24 (2)	7 (3)	29 (11)
Total	1158 (100)	246 (100)	258 (100)

The patients in FCI-2 study definitely use more borrow money, less cash as first money used for paying the bills in comparison with those in FCI-1 study. Using borrowing as first resource in this admission accounted 36% in FCI-2 study comparing to 17% and 6% in FCI-1 study. The findings indicated that unable-to-pay cases had poorer liquidity or poorer cash flow than able-to-pay cases.

3) Length of stay by department

Table 4.3: Length of stay by department in two studies

	FCI-1study (cases, Day)		FCI-2 study (cases, Day)
Department	able-to-pay	unable-to-pay	unable-to-pay
OBGYN	316 (5)	113 (7)	60 (7)
SURGICAL	210 (6)	87 (10)	122 (14)
MEDICINE	625 (5)	105 (9)	69 (10)
PEDIATRICS	102 (4)	21 (11)	25 (20)
ORTHOPEDICS	42 (8)	11 (11)	13 (25)
EENT	46 (5)	11 (8)	11 (12)
PSYCHIATRY	8 (22)	2 (23)	-
Total cases	1381 (5)	350 (9)	300 (13)

Comparing to able-to-pay group, unable-to-pay patients tended to stay longer. Psychiatry patients stayed the longest in FCI-1 study while Pediatrics and

orthopedics unable-to-pay cases stayed longer than others in both studies. The patients in FCI-2 study substantially had longer hospital stay than FCI-1 study. Pediatrics and orthopedics, as well as surgical patients were most likely to be inability-to-pay.

4) Hospital charges and affordable out-of-pocket expenses

Table 4.4: Charges and affordable out-of-pocket expenses

	FCI-1 study		FCI-2 study
	able-to-pay	unable-to-pay	unable-to-pay
Charge (Baht)	7,360	7,622	15,769
Out-of-pocket expense/charge ratio (%)	100.0	42.3	37.6
Total subsidy as % Total charges (%)	0	57.7	62.4
Charge as % annual income (%)	6.1	18.6	46.4
Out-of-pocket expense as % annual income (%)	6.1	5.9	10.7

Average hospital charge in FCI-2 study was higher than FCI-1 study. The out-of-pocket to charge ratio indicated that unable-to-pay cases could afford around 40 percent of total charges. Both charge and out-of-pocket as % annual income in FCI-2 study were higher than ATP study. The main reason was that the patients in the FCI-2 study had less family income, but higher average charge than those in FCI-1study. The hospitals subsidy for these unable-to-pay patients ranged from 58% to 62% of total charges in both studies . There were a very wide range of charges as percentage of income varied from 6 to 46 percent in this two studies. The percentage differences between charges and expenses as percentage of income were the amount of subsidization so far.

5). Common DRGs among the cases incurred catastrophic expenses(out-of-pocket expenses greater than 15% of annual income)

Table 4.5: High probability DRGs which result to catastrophic costs from 2 studies

Study	DRG (RW)
FCI-1, whole sample	39(.99), 357(1.20), 365(1.10), 371(.85), 468(2.49), 485, 486
FCI-1, able-to-pay cases	39, 162 (.44), 357, 365, 371, 468, 485 (3.26)
FCI-1, unable-to-pay cases	171(1.16), 371, 486(3.39)
FCI-2	182(.56), 219(.91), 222(.91), 371, 468, 484(6.57), 486

DRGs corresponded to the cases that had out-of-pocket expenses greater than 15% of income were shown in Table 4.5. Relative weight was dispersed. Only 3 DRGs with RW above 3 (DRG 485, 484 and 486) were found in case of high out-of-pocket expenses relative to income. Thus, it was not uncommon that unable-to-pay cases suffering from low relative weight DRG.

6) Ten most common DRGs

Table 4.6: Ten most common DRGs

	Able-to-pay				Unable-to-pay			
Rank	DRG	N	Charge	LOS	DRG	N	Charge	LOS
1	183	147	1,663	3	373	36	1,703	6
2	373	118	2,273	5	371	34	6,420	6
3	371	62	11,847	6	183	14	1,182	4
4	384	52	3,130	4	167	10	8,241	6
5	420	46	2,697	4	486	9	10,002	13
6	321	38	3,437	5	384	8	5,841	6
7	184	30	2,866	3	490	7	8,291	9
8	69	28	5,482	3	321	7	1,732	5
9	450	27	2,085	3	281	7	621	2
10	421	27	2,777	4	365	6	12,649	11
Total	(1381)	575			(350)	138		

Out of the ten most common DRGs, there were five DRGs in common between able-to-pay and unable-to-pay groups. Mean hospital charges and length of stay in 5 common DRGs were not substantially difference. Four of this five common DRGs had the average charges of the unable-to-pay groups lower than the able-to-pay. This proved that charges do not strongly matter family's ability to pay. Ability to pay was influenced by other factors like family income. It was worth noting that DRG 371 (caesarean section) had high risk of being unable to pay [34/(62+34) = 0.35] in our sample.

7) High-cost DRGs

As charges were influenced by types of hospitals, Relative weight provided more advantage to reflect the severity of disease and resource consumption. The high-cost DRGs using DRG relative weights (RW) among inability-to-pay cases in the two studies were summarized in Table 4.7 The table displays 20 DRG lists, the volumes, RW, and LOS (compare to standard LOS). Standard LOS, like relative weight, was the products of previous DRG research in Thailand documented in DRG handbook version 1.0.

Table 4.7: High-cost DRGs by relative weight (RW)

FCI-1 Study (inability-to-pay cases)				FCI-2 Study (inability-to-pay cases)			
DRG	N	RW	LOS (LOS Std.)	DRG	N	RW	LOS (LOS Std.)
302	1	7.54	10 (25)	484	2	6.57	77 (23)
172	1	4.11	33 (14)	483	1	5.71	79 (20)
2	3	3.83	21 (15)	1	1	3.87	11 (16)
486	9	3.39	13 (23)	2	1	3.83	7 (15)
201	2	3.29	14 (22)	154	1	3.63	21 (12)
485	2	3.26	16 (15)	486	14	3.39	13 (23)
398	1	2.86	11 (6)	110	1	2.97	13 (25)
111	1	2.78	19 (13)	217	2	2.77	39 (18)
217	1	2.77	8 (18)	416	3	2.62	8 (17)
170	1	2.72	9 (11)	204	2	2.52	12 (12)
215	1	2.59	13 (18)	468	17	2.49	17 (15)
468	2	2.49	19 (15)	126	1	2.43	14 (25)
194	1	2.25	7 (14)	459	1	2.31	5 (17)
417	1	2.15	10 (11)	400	1	2.17	14 (16)
399	1	2.13	10 (8)	173	1	2.15	. (6)
489	6	1.99	12 (10)	212	1	2.01	24 (18)
263	1	1.98	12 (21)	489	6	1.99	5 (10)
208	2	1.94	6 (10)	20	2	1.92	21 (14)
20	1	1.92	3 (14)	12	2	1.92	13 (20)
16	1	1.85	3 (7)	16	1	1.85	5 (7)
	39/350				60/300		

The 20 high-cost DRGs sorted by relative weight accounted for 11 and 20 percent of inability-to-pay cases in the FCI-1 and FCI-2 study respectively. Most of DRGs had relative weight greater than 2 (15 and 16 out of 20 DRGs). But the volume of each DRG were few except DRG 468 (Extensive O.R.. Procedure unrelated to principal diagnosis), DRG 486 (Other O.R. Procedures for Multiple Significant Trauma), and DRG 489 (HIV with major related condition). Among these high-cost DRGs, 7 out of 20 DRGs in both studies had longer hospital stay than standard mean LOS. In conclusion, resource-intensive DRGs (indicating by high RW) and longer stay cases in the hospitals influenced family's ability to pay and might lead to financial catastrophe.

Table 4.8: Clinical outcome among the 20 high-cost DRGs

	20 high-cost DRGs	
Clinical outcome	unable-to-pay cases in FCI-1 study	unable-to-pay cases in FCI-2 study
Improved (percent)	16 DRGs (89)	12 DRGs (63)
Not-improved (percent)	-	2 DRGs (11)
Referred (percent)	1 DRG (6)	1 DRG (5)
Dead (percent)	1 DRG (6)	4 DRGs (21)
Total	18 DRGs (100)	19 DRGs (100)

High-cost DRGs among inability-to-pay cases were likely to have good clinical outcome (improve). Not-improved, referred and dead cases were considered as bad outcome. Not-improve cases were DRG 154 (Stomach, Esophageal, Duodenal procedures) and DRG 489 (HIV with major related condition). Referral cases were DRG 486 (Other O.R. Procedure for multiple significant trauma) and DRG 489. Dead cases were DRG 172 (Digestive malignancy with complication), DRG 173 (Digestive malignancy without complication), DRG 484 (craniotomy for multiple significant trauma), and DRG 486. DRG 484 and DRG 486 were most likely have bad prognosis.

Summary Of The Chapter

The respondents in both studies had somewhat difference because of the study design. In FCI-1 study most respondents were the patients who admitted in the ward while the relatives were always the cases that negotiate with medical social workers like in FCI-2 study. Comparing to able-to-pay group, unable-to-pay patients tended to be lower income, lower education level and poorer employment status. They were also more rural residents. Furthermore, inability-to-pay patients were more likely to be male and older age. Considering family income <2800 Baht as absolute poverty, a great number of unable-to-pay patients fell into poverty line: 15% of unable-to-pay cases in FCI-1 study compared to 22% in FCI-2 study.

The patients in FCI-2 study definitely use more borrow money, less cash as first money used for paying the bills in comparison with those in FCI-1 study. Using borrowing as first resource in this admission account 36% in FCI study comparing to 17% and 6% in FCI-1 study. The findings indicate that unable-to-pay cases have poorer liquidity or poorer cash flow than able-to-pay cases.

Comparing to able-to-pay group, unable-to-pay patients tended to stay longer. Psychiatry patients stayed the longest in FCI-1 study while Pediatrics and orthopedics cases stayed longer than others in both studies. The patients in FCI-2 study substantially stayed longer than FCI-1 study. Pediatrics and orthopedics, as well as surgical patients had high tendency to be inability-to-pay cases. Average hospital charges in FCI-2 study were higher than in FCI-1 study. The out-of-pocket to charge ratio indicated that unable-to-pay cases could afford around 40 percent of total charges. Although the setting was different in this two studies, it was worth noting that unable-to-pay cases in FCI-2 study were less affordable. Most out-of-pocket in-patients, on average, were able to pay the bills at the expenses of 6-11 percent of annual income.

DRGs weights among the cases that have out-of-pocket expenses greater than 15% of income were dispersed. Several low-RW DRGs (Relative weight less than 3) except 3 DRGs (DRG 485, 484 and 486) resulted to catastrophic expenditures. The ten most common DRGs showed that unable-to-pay cases suffered to higher charges in the same DRGs than able-to-pay cases. Most of high-cost DRGs had relative weight greater than 3 and stayed in the hospitals longer than standard LOS. It would conclude that resource intensive DRGs and longer stay cases influenced family's ability to pay among inability-to-pay cases.

Chapter 5: CONCLUSIONS, DISCUSSIONS, AND RECOMMENDATIONS

This chapter concludes the findings according to the objectives, discusses the important issues related to ability to pay, coping strategies in dealing with the costs of treatment and financial catastrophic illnesses, makes recommendation for policy implementation, suggests further study in this area.

1) Characteristics of out-of-pocket in-patients residing in Songkhla

Conclusions & Discussions:
Out-of-pocket patients tend to be a mixture of upper, middle, and lower socioeconomic status. Those who seek care in the government hospitals have inability to pay problems while those who seek care in the private hospitals almost always have no such affordability problem. Those who were unable to pay are most likely to be lower income, lower education and poor employment status than those who were able to pay. Besides their family income, network supports played an important role to help the families to cope with the costs of illness.

Recommendation:
Different levels of need among these out-of-pocket patients who have a wide variety socioeconomic status (SES) have to be considered. The middle to low SES class are vulnerable to face with payment difficulty. Extended health insurance coverage should be set up in the high priority ranking for this uninsured. Ability to pay and willingness to pay for insurance premium should be studied if universal coverage policy is used as a means to extend the coverage to the uninsured.

2) Family's ability to pay for hospital bills and fee exemption system in the government hospitals

Conclusions & Discussions:
Several socio-economics determinants of the patient such as education, occupation, and household income are highly associated with family's ability to pay for hospital bills. Whereas we do not have evidence that some social factors, for example, place of residence and religion have an association with family's ability to pay.

On average, half of our out-of-pocket in-patients have a maximum ability to pay at the expenses of 14700 Baht (life-table method). It is evident that the families used several coping strategies to pay for 14700 Baht. Beyond these amount, the government hospitals play a role to subsidize the remaining of bills. The subsidization accounts approximately 60% of total charges. Thus, the unable-to-pay cases can afford only 40 percent of total charges.

In conclusion, nearly 20 percent of the out-of-pocket patients in this study are unable to pay for the bills. Hospital charges among these patients are currently covered by their family income, family and social networks. There is fee exemption policy in the government hospitals for those who are unable to pay.

For those who have limited ability to pay, either shortage of income or no strong kinship, charges will subsidize by the hospitals. However, the exemption policy is not well-known for everyone. Those who need it have to declare themselves and negotiate with medical social workers during hospitalization or whenever payment difficulty arise.

Recommendation:
There should be a clear policy that to what extent the charges would be responsible by the family, the networks, and the hospitals. The role of hospital covered the excess is debatable. According to the limited budgets, the hospitals have to cross-subsidize from the existing health insurance schemes or substitute by other source of hospital revenue to meet the expenditures. Health insurance should consider family's ability to pay. Setting the insurance premium should take some important factors such as family income, education, and occupation, into account.

Fee exemption policies should be strengthened and stated explicitly because they provide a good safety net for those who were unable to pay at the time of illness. Adequate budgets should be considered. Further study is needed to evaluate the effectiveness of such exemption policies and the level of subsidization among the government hospitals.

3) Financial coping strategies to deal with the bills (Resource mobilization) and the onsequences due to payments to the family

Conclusions & Discussions:
As a first step, most families use any available cash or savings as source of finance to pay for the bills in the current admission. Findings from time-series data suggest that family resources used for paying the bills mainly derived from intra-household. The sequences of resource use have a number of patterns depending on the hospital costs and numbers of bill days (hospital day). Qualitative findings also confirm that cash /savings is the most common resource use. If cash / savings is not available, additional resources from assets, loan, and family networks are sought. If any resources are exhaustive, asking support from the hospitals are the last option. With regard to the coping strategies adopted, more than one strategies are in used.

In FCI-1 study: 37% have to reduce essential consumption, 1 percent causes children leaving from school, and 11 percent results to indebtedness. In FCI-2 study: 69% reduces essential consumption, 3% causes school leaving, and 28 suffers to indebtedness. Findings from qualitative research show that illnesses lead to loss of labor substitution and income earning capacity in the families. In particular, if principal income earner is a case, the impacts hit to the families are more severe.

In conclusion, various kinds of coping strategies and sufferings are found. Those with strong kinship, having enough family resources, and getting non-kin / community networks support are shown to be protected from financially

catastrophic cases. Whilst those without such safety net e.g. immigrants, homeless, unemployment may need more contributions from the government.

Recommendation:
Special arrangement of medical assistance should be encouraged to ensure access to quality care in this specific group. In addition to financial assistance for hospital bills, some short-term or immediate social impacts after payment such as school leaving, severe indebtedness, loss of earning capacity should be averted. It is worth to follow-up to see how financial consequences will last long to such families after discharge. Social welfare should be in place to assist them until the problem is free.

4) Charge and Disease profiles

Conclusions & Discussions:
Average hospital charges in unable-to-pay groups are higher than able-to-pay groups. Resource intensive (high-cost, high relative weights) DRGs and longer hospital stay cases influence family's ability to pay. However, there is no striking common DRGs that result to unable to pay or FCI cases. Thus, it is more important to consider family's ability to pay in the aspects of socio-demographic determinants such as family income, education and occupation status than disease type and hospital charges.

Recommendation:
Insurance should cover any medical expenditures exceeding family's ability to pay regardless of the disease types and the severity of disease..

6) Inability-to-pay & FCI incidence

Conclusions & Discussions:
Inability to pay is a common problem among inpatients who are not covered by any health insurance schemes. If considering inability to pay cases as FCI, the magnitude of (weighted) FCI is 21.5%. However, there is not strong evident to show that they are in financial catastrophe. If school dropout or indebtedness is considered as the indicators of financial catastrophe among out-of-pocket in-patients, the incidences of FCI is 0.36 and 4.85 per 100 out-of-pocket admissions respectively. If out-of-pocket expense exceeding 15 percent of annual income is considered as catastrophic medical expenditures, 7.5 percent of out-of-pocket admissions were financially catastrophic cases. Based on this economic definition of FCI, a large number of sample patients in FCI-1study who incurred catastrophic costs were still able to pay the bills because there were difference in ability-to-pay across SES.

Recommendation:
Some criteria for financially catastrophe above are somewhat subjective. It is difficult to set up a good criterion since some criteria might stem from multiple factors. The definition of FCI using 15 percent cut-off annual income is not appropriate because many cases with catastrophic costs are still able to pay the bills. Moreover, in reality, a large amount of hospital bills is covered by family and social networks, instead of family income. To document FCI

cases, several cut-offs as percent of annual income should be varied from 5-20%. For instance, medical expenses exceeding 5 percent of income should be considered as FCI in the first income quartile or the lowest SES, medical expenses exceeding 10 percent of income should be considered as FCI in the second income quartile, and so on.

a) General Discussions

Out-of-pocket patients are mixtures of upper, middle, and lower socioeconomic status. Family's ability to pay depends on not only on SES but also coping strategies adopted to deal with the costs of illness. Higher SES and strong kinship and social networks are better ability to pay for the bills. Real need for health insurance coverage among these patients varies because of different ability to pay.

Out-of-pocket patients either marginally poor or non-poor are vulnerable to FCI event. Particularly, an expensive medical care or a large medical expenditures relative to their ability to pay might lead the families to impoverishment. Health insurance provides access to health care services when needed, and protection of family income and assets from the costs of medical care. Financial protection against the risk of incurring very expensive medical care is concerned by many countries.

Experience in developed countries with national health service, national health insurance or universal coverage system, there is no attempt to set catastrophic health insurance policy. Except compulsory saving model of Singapore, National health insurance of the Netherlands, and system of the United State, specific catastrophic health coverage are clearly implemented.

The United State of America has been developed many catastrophic health insurance and proposals. Out-of-pocket expenses exceeding 10-20 percent of gross annual income are used to determine catastrophic expenditures.

The Netherlands sets up clearly what benefits include in basic health services (non-catastrophic risk) or in catastrophic risk (expensive long-term care). But nothing deals with the cut-off of catastrophic threshold because there is a national health insurance system covering comprehensive package.

Singapore has MediShield Plan to cover high-cost care which incurs catastrophic expenses. One has to pay deductible amount that not exceeding 20% of annual expenditure before getting benefit. Basic medical care package is explicitly stated.

In Thailand, several issues should take into considerations for introducing catastrophic coverage. Definitions of several pairings of high-cost and catastrophic attributes: High-cost case vs. financially catastrophic case, High-cost illness vs. financially catastrophic illness, and high-cost threshold vs. catastrophic expenditures or costs, should have a consensus. Catastrophic health insurance is essential and specific to protect income / asset loss of the families incurring a large medical expenses relative to income. Based on experiences in developed countries, such catastrophic health insurance must be operated on compulsory basis. Traffic Accident Protection Scheme (TAPS) is an example of catastrophic illness coverage specified to road-traffic injuries that has been approved and enacted by law in Thailand. Specified proposal / program for cost-effective, high-cost illness, for example, end-stage renal disease, may be relevant in the situation that catastrophic coverage law can not pass or it is too costly to add specific disease / condition into catastrophic package.

Basing on current health care system, financial requirements for protection against FCI among out-of-pocket admissions in Songkhla were computed. In FCI-1 study, hospital subsidization for those who were unable to pay was about 3.45 million Baht per year. If the expenses were considered that the patients should not pay more than15 percent of gross annual income for a single admission, the government or the hospitals had to subsidy 6.56 million Baht per year. To protect FCI, if health insurance is considered as source of funding to raise 7 million Baht per year, every uninsured should contribute about 20 Baht for premium per year and pay user charges of not more than 15 percent of annual family income as deductible amount for each admission.

b) Policy recommendations

Our findings suggest that low SES, out-of-pocket in-patients are vulnerable to be unable to pay for hospital bills. Non-poor or marginally poor uninsured are being faced with financially catastrophic event if medical expenses are large relative to their ability to pay.

1) Extend coverage of health insurance or welfare scheme to the uninsured is the most important issue. Universal coverage should be used as a means to extend health coverage to all citizens. The universal health care system should be implemented.
2) Without regard to a maximum household liability, the expenses of health services should be collected from health insurance premium or health tax or medical saving scheme like Singapore. The government take responsibility for subsidizing the indigent who are unable to pay their premium and insurance tax. The subsidy is spent from the general tax. In this way, insurance functions could guarantee access to health care and the concept of risk pooling provides financial protection against the risk of incurring expensive medical care. In addition, the out-of-pocket patients at least are able to pay for insurance premium. It is feasible to increase insurance coverage through the existing insurance schemes, in particular, in the umbrella of the Social Security Scheme or the Health Card Project.
3) The decision should be made regarding what benefits should be covered in the existing publicly organized health insurance and medical welfare system, and under universal coverage policy whether basic essential package, catastrophic and expensive chronic illnesses only, or comprehensive care is covered.
4) Catastrophic health insurance is appropriate to implement for providing both access to health care and financial protection especially for expensive medical care if comprehensive package of medical care is not possible. There are two feasible ways to achieve catastrophic coverage in the Thai society.
    a) In the existing health insurance system, a new compulsory catastrophic health insurance would be introduced to cover a specific health service so-called catastrophic package.
    b) During the path to achieve universal coverage (if universal coverage is a policy objective), the issues of basic essential package vs. catastrophic package should be identified and discriminated. A compulsory national health insurance would emerge along with financing reform which centers to merging funds or expand social security scheme to self-employed and agricultural sector. What are not included in a list of basic

package or a list of catastrophic coverage may encourage the needy to buy private indemnity insurance.

Details for financial requirements for protection against FCI, catastrophic health insurance, and universal coverage above need to be worked out.

5) The government hospitals play a significant role to support those who are unable to pay for the bills. It is also a good safety net to prevent income / asset loss among those who face with financial insecurity. The fee exemption system should be available whenever universal coverage is not achieved. At the moment, the appropriateness of this exemption policy and the effectiveness of the waiving mechanism are questioned. Therefore, the policy and the role of cross subsidization in the government hospitals should be evaluated..
6) Among those who need financial assistance, attempts should be made to assist the families to overcome financial consequence from FCI, not just waiving the bills. For instance, if appropriate measure is generated for screening the vulnerable case, it would protect income/asset spend-down at the time of illness and other social impacts could be averted.

c) The limitations of the study

1) Both studies are limited to family's ability to pay and financially catastrophic illness among out-of-pocket, uninsured inpatients. The definition of out-of-pocket patients refer to those without any health insurance benefits. Practically, children under twelve and the elderly (over 60) should have health benefits from Public Welfare Scheme to seek care at MoPH hospitals. But they are not in some MOPH hospitals unless they declare themselves to have the entitlement. To avoid this confusing practices, our studies therefore confined such cases only in university and private hospitals. In addition, the selected patients who admit and stay less than 48 hours are excluded from the study. This will result to dilute the proportion of out-of-pocket admission in both studies.
2) The definition of FCI considers only out-of-pocket expenses in one episode of admission. The studies do not intend to deal with FCIs over the lifetimes, FCIs which are specific to chronic patients, out-patient FCIs. Thus, our findings cannot infer to such FCI cases.
3) Hospital-based study will lack the information of those who cannot access to care because of no purchasing power to afford traveling and living expenses
4) Out-of-pocket in-patients who are Songkhla residents in our study range from 4-38% of total hospital admissions. This figure may be somewhat under-estimate. Because the numerator, out-of-pocket in-patients, are those who had interviewed. Some in-patients fitted to selection criteria discharge without performing any interviews due to our limitation and the study design.
5) Results of our studies might over-estimate family's ability to pay and FCI incidence because the studies were conducted during the economic crisis. It is hope that the impact of economic crisis would shape the patients having a reasonable utilization of health services. Assuming that there is a good adjustment after crisis, the results may not deviate from the true estimate. Thus, generalizability is still acceptable to the target population. Moreover, only Songkhla sample may not represent country as a whole, the inference should be taken into account.

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APPENDIX

Questionnaire 1: (FCI-1 & FCI-2 STUDY)

แบบสอบถามเลขที่ _____

ชื่อเรื่องวิจัย ความสามารถในการจ่ายเงินและกลไกการจัดการทางการเงินของครอบครัวเมื่อประสบภาระค่ารักษาพยาบาลในสภาวะเจ็บป่วยจนล้มละลาย

สวัสดีครับ(ค่ะ) ผู้ให้ความร่วมมือตอบแบบสอบถามทุกท่าน

คณะวิจัยของเรา กำลังทำวิจัยเรื่องความสามารถในการจ่ายเงินและกลไกการจัดการทางการเงินของครอบครัวเมื่อประสบภาระค่ารักษาพยาบาลในสภาวะเจ็บป่วยจนล้มละลาย วัตถุประสงค์เพื่อช่วยเหลือทางรัฐบาลหามาตรการและเสนอทางเลือกการจัดระบบประกันสุขภาพที่เหมาะสมในอนาคต ท่านเป็นคนหนึ่งในกลุ่มตัวอย่างของเรา ข้อมูลอันมีคุณค่าของท่านจะเป็นประโยชน์ต่องานวิจัยชิ้นนี้ เราจะเก็บข้อมูลของท่านเป็นความลับ

แบบสอบถามนี้ผ่านกระบวนการ [ ] coded [ ] checked

[ ] data entry 1 [ ] data entry 2

หมายเลขผู้ถูกสัมภาษณ์ _____	IDNUM [ ][ ][ ][ ]
หมายเลขโรงพยาบาลที่สัมภาษณ์ _____	HOSPID [ ]
หมายเลขประจำตัวทั่วไปของผู้ป่วย _____	HN [ ][ ][ ][ ][ ]/[ ][ ]
หมายเลขประจำตัวของผู้ป่วยใน _____	AN [ ][ ][ ][ ][ ]/[ ][ ]
วันเดือนปีที่นอน รพ. ---- /-----/ -----	ADMDAT [ ][ ]/[ ][ ]/[ ][ ]
วันเดือนปีที่สัมภาษณ์ ---- /-----/ -----	INTDAT [ ][ ]/[ ][ ]/[ ][ ]
ชื่อผู้สัมภาษณ์ _____	INCODE [ ]
ชื่อตึกผู้ป่วย _____	WARDID [ ]

ข้อสังเกต แบบสอบถามนี้แบ่งออกเป็น 5 ตอน เฉพาะตอนที่ 1-4 โปรดกาเครื่องหมาย (x) หน้าข้อที่ตรงกับคำตอบของผู้ตอบแบบสอบถาม กรณีที่เป็นคำถามเปิด กรุณาเขียนตามคำบอกของผู้ตอบแบบสอบถามให้มากที่สุด ส่วนตอนที่ 5 ขอให้เติม หรือตอบข้อถามหลังจากที่ผู้ป่วยออกจากรพ. แล้ว โดยคัดลอกจากเวชระเบียน และบันทึกการเงินของผู้ป่วย ตอนที่ 6 สำหรับผู้ป่วยที่ได้รับการคัดเลือกเข้าศึกษาเก็บข้อมูลอนุกรมเวลา

คำนิยาม

ครอบครัว หมายถึง

1) บุคคลตั้งแต่ 2 คนขึ้นไป กินอยู่ และใช้สิ่งอุปโภคบริโภคที่จำเป็นแก่การดำเนินชีวติร่วมกัน บุคคลเหล่านั้น อาจจะเป็นผู้มีความเกี่ยวพันทางสายโลหิต หรือโดยการแต่งงาน หรือรับมาเป็นบุตรธรรม หรือมีความเกี่ยวพันฉันญาติหรือไม่ก็ได้ หมายความรวมถึงผู้อาศัยซึ่งไม่มีความสัมพันธ์ฉันญาต ไม่ว่าจะมีครอบครัวมาอยู่ด้วยหรือไม่ก็ตามและไม่ได้จ่ายค่าที่พักและอาหาร และคนใช้ที่ไม่มีครอบครัวอยู่ด้วย ได้รับอาหาร เสื้อผ้า และที่อยู่อาศัยเป็นส่วนหนึ่งของค่าแรงหรือได้รับฟรีก็ตาม

2) บุคคลคนเดียวอาศัยอยู่ตามลำพัง กินอยู่และใช้จ่ายเพื่อการอุปโภคบริโภคที่จำเป็นแก่การดำรงชีพสำหรับตนเอง โดยไม่มีบุคคลอื่นร่วมด้วย

<u>สมาชิกของครอบครัว</u> หมายถึง บุคคลที่มีส่วนร่วมในการจัดหา และใช้สิ่งอุปโภคบริโภคที่จำเป็นแก่การดำรงชีวิตร่วมกัน สมาชิกอาจมีเพียงคนเดียว หรือมีตั้งแต่ 2 คนขึ้นไป

<u>หัวหน้าครอบครัว</u> หมายถึง ผู้ซึ่งเป็นที่ยอมรับนับถือของสมาชิกอื่นในครอบครัว โดยยกย่องให้เป็นหัวหน้า อาจจะเป็นผู้รับผิดชอบทางด้านการเงินและสวัดิการของครอบครัวหรือไม่ก็ได้

<u>อาชีพ</u> หมายถึง ประเภทหรือชนิดของงานที่บุคคลนั้นทำ ปกติบุคคลมีอาชีพเดียว หากในรอบ 12 เดือนที่ผ่านมาบุคคลใดมีอาชีพมากกว่า 1 ชนิด ให้ถืออาชีพที่มีจำนวนเดือนทำงานมากที่สุด หากจำนวนเดือนเท่ากัน ให้นับอาชีพที่มีรายได้มากที่สุด

ตอนที่ 1 ข้อมูลทั่วไป

ก) ข้อมูลด้านสังคม เศรษฐฐานะและประชากร

ข้อมูลถามผู้ตอบแบบสอบถาม

1. อายุ _____ ปี _____ เดือน วันเกิด ____/___/_____ (d/m/y)	RAGE [ ]
2. เพศ	
[ ]1 ชาย [ ]2 หญิง	RSEX [ ]
3. ท่านเกี่ยวข้อง โดยเป็นอะไรกับผู้ป่วย	RRELATE [ ]
[ ]1 บิดามารดา [ ]2 คู่สมรส	
[ ]3 ตัวผู้ป่วย [ ]4 บุตรธิดา	
[ ]5 อื่นๆระบุ _____	
4. ท่านจบการศึกษาระดับใด	REDUC [ ]
[ ]1 ไม่ได้เรียนหนังสือ หรือไม่จบ ประถมศึกษาภาคบังคับ	
[ ]2 จบ/ กำลังเรียนชั้นประถมศึกษา	
[ ]3 จบ / กำลังเรียนชั้นมัธยมศึกษา	
[ ]4 จบ / กำลังเรียนชั้นปวส/ ปวช	
[ ]5 จบ/ กำลังเรียนชั้นวิทยาลัย/ มหาวิทยาลัย	
[ ]6 อื่นๆระบุ _____	

ข้อมูลเกี่ยวกับครอบครัวของผู้ป่วย

5. นับถือศาสนา	RELIG [ ]
[ ]1 พุทธ [ ]2 อิสลาม	
[ ]3 คริสต์ [ ]4 อื่นๆระบุ _____	
6. จำนวนสมาชิกที่อาศัยอยู่ในรอบ 12 เดือนที่ผ่านมา	FSIZE [ ]
_____ คน	
7. จำนวนสมาชิกที่อาศัยอยู่ และสร้างรายได้ให้แก่ครอบครัว	NEMPLOY [ ]
_____ คน	

8. หัวหน้าครอบครัว คือใคร เป็นอะไรกับผู้ป่วย | FHEAD [ ]

[ ]1 พ่อ [ ]2 แม่

[ ] 3 สามี [ ]4 ภรรยา

[ ]5 คนอื่นระบุ _____

ข้อมูลของผู้ป่วย

9. อายุ _____ ปี _____ เดือน วันเกิด ___/____/_____ (d/m/y) | PAGE [ ] [ ]

10. เพศ | PSEX [ ]

[ ]1 ชาย [ ]2 หญิง

11. สถานภาพสมรส | PMARRY [ ]

[ ]1 โสด

[ ]2 แต่งงานและอยู่ด้วยกัน

[ ]3 แต่งงานและแยกกันอยู่

[ ]4 หย่า [ ]5 หม้าย

12. การศึกษา | PEDUC [ ]

[ ]1 ไม่ได้เรียนหนังสือ หรือไม่จบ ประถมศึกษา ภาคบังคับ

[ ]2 จบ / กำลังเรียนชั้นประถมศึกษา

[ ]3 จบ / กำลังเรียนชั้นมัธยมศึกษา

[ ]4 จบ / กำลังเรียนชั้นปวส/ ปวช

[ ]5 จบ / กำลังเรียนชั้นวิทยาลัย/ มหาวิทยาลัย

[ ]6 อื่นๆระบุ _____

13. อาชีพ | POCCUP [ ]

[ ]1 รับราชการ

[ ]2 นักบริหาร/ วิชาชีพอิสระ

[ ]3 นักธุรกิจและค้าขายส่วนตัว [ ]4 แรงงานกึ่งฝีมือ

[ ]5 กรรมกร/ รับจ้าง / เกษตรกรรม [ ]6 ไม่มีงานทำ

[ ]7 อื่นๆ ระบุ _____

ตอนที่ 2 ข้อมูลการเจ็บป่วยปัจจุบัน และอดีต และค่ารักษาพยาบาล

ก) ข้อมูลการเจ็บป่วยปัจจุบัน และอดีต

<u>ถามถึงผู้ป่วยที่เข้ารักษาตัว</u>

14. ท่านเคยรักษาตัวที่อื่นมาก่อน สำหรับการเจ็บป่วยปัจจุบัน นับตั้งแต่เริ่มป่วย

[ ]1 เคย, ไปข้อ 15 | EVERSEEK [ ]

[ ]2 ไม่เคย, ไปข้อ 17

. ท่านรักษาตัวที่ใดมาก่อน ก่อนที่มานอน รพ. แห่งนี้

16.1 สถานีอนามัย [ ]1 ใช่ [ ]2 ไม่ใช่

16.2 คลีนิก/ โพลีคลีนิก [ ]1 ใช่ [ ]2 ไม่ใช่	SEEK1 [ ]
16.3 รพ. ของรัฐ [ ]1 ใช่ [ ]2 ไม่ใช่	SEEK2 [ ]
16.4 รพ. เอกชน [ ]1 ใช่ [ ]2 ไม่ใช่	SEEK3 [ ]
16. สาเหตุที่ต้องย้ายมารักษาพยาบาลใน รพ. แห่งนี้ (เหตุผลที่สำคัญที่สุดเพียงข้อเดียว)	SEEK4 [ ]
[ ]1 ไม่พึงพอใจการรักษา	CHANGE [ ]
[ ]2 แพทย์ส่งมารักษาต่อ	
[ ]3 มีปัญหาเรื่องเงินที่เก็บเป็นค่ารักษา-ไม่พอจ่าย	
[ ]4 ต้องการประหยัดค่าใช้จ่าย	
[ ]5 เหตุผลอื่นระบุ _____	

ข) ข้อมูลค่ารักษาพยาบาล (เฉพาะที่รักษาในสถานพยาบาลของทั้งรัฐและเอกชน)

<u>สำหรับผู้ป่วยรายนี้</u> ตอบคำถามข้อ 18 และ 19	
17. ค่ารักษาพยาบาลทั้งหมดที่จ่ายก่อนมารักษาตัว รพ. แห่งนี้	
17.1 กรณีผู้ป่วยนอก _____ บาท	AMBUP [ ][ ],[ ][ ][ ]
17.2 กรณีผู้ป่วยใน _____ บาท	INPAP [ ][ ],[ ][ ][ ]
18. สำหรับการเจ็บป่วยครั้งนี้, สมาชิกในครอบครัวต้องจ่าย ส่วนที่ไม่ใช่ค่ารักษาเพื่อมาดูแลตัวผู้ป่วยที่รพ. ดังต่อไปนี้ เท่าไร	
19.1 ค่าเดินทางเฉลี่ยต่อวัน _____ บาท	TRAVELC [ ][ ][ ]
19.2 ค่าอาหารเฉลี่ยต่อวัน _____ บาท	FOODC [ ][ ][ ]
19.3 ค่าใช้จ่ายอื่นๆต่อวัน _____ บาท	OTHERC [ ][ ][ ]
<u>สำหรับสมาชิกทุกคนในครอบครัว</u>ในรอบ 12 เดือนที่ผ่านมา (ไม่รวมการเจ็บป่วยปัจจุบันของผู้ป่วยรายนี้) ตอบคำถามข้อ 19 และ 20	
19. . ท่านและสมาชิกเจ็บป่วยและเข้ารักษาในสถานพยาบาลบ่อยครั้งเพียงไร	
19.1 รักษาแบบผู้ป่วยนอก _____ ครั้ง	AMFREQ [ ][ ]
19.2 รักษาแบบผู้ป่วยใน _____ ครั้ง	INFREQ [ ] [ ]
20. ค่ารักษาพยาบาลทั้งหมด ที่จ่ายไป	
20.1 กรณีผู้ป่วยนอก _____ บาท	AMBUC [ ][ ],[ ][ ][ ]
20.2 กรณีผู้ป่วยใน _____ บาท	INPAC [ ][ ],[ ][ ][ ]

ตอนที่ 3 วิธีการจัดการกับภาระค่ารักษาพยาบาลของครอบครัว และมาตรการแก้ปัญหากรณีผู้ป่วยไม่สามารถจ่ายค่ารักษาได้ และข้อมูลด้านประกันสุขภาพ

ก) วิธีการจัดการทางการเงินของครอบครัว

21. ท่าน บริหารจัดการกับรายได้และทรัพย์สินของครอบครัว อย่างไร นอกจากเงินสดติดตัว	
21.1 เก็บออม/เปิดบัญชีธนาคาร [ ]1 ใช่ [ ]2 ไม่ใช่	ARRANGE1 [ ]
21.2 ซื้อทรัพย์สิน เช่น บ้านที่ดิน พันธบัตร ทองรูปพรรณเก็บไว้	ARRANGE2 [ ]

[ ]1 ใช่ [ ]2 ไม่ใช่	
21.3 ปล่อยกู้ [ ]1 ใช่ [ ]2 ไม่ใช่	ARRANGE3 [ ]
21.4 ซื้อประกัน สุขภาพ [ ]1 ใช่ [ ]2 ไม่ใช่	ARRANGE4 [ ]
21.5 อื่นๆระบุ _____	ARRANGE5 [ ]
[ ]1 ใช่ [ ]2 ไม่ใช่	
๋. แหล่งเงินแรกสุดที่ท่านใช้จ่ายค่ารักษาพยาบาลสำหรับการเจ็บป่วยครั้งนี้	MONEY [ ]
[ ]1 เงินสด / เงินออม / เงินฝากธนาคาร	
[ ]2 ขายผลผลิตที่เก็บไว้เพื่อแลกเป็นเงินสด	
[ ]3 ขายทรัพย์สิน เช่น ที่ดิน ทองรูปพรรณ ฯลฯ	
[ ]4 กู้ยืมเงินมาจ่าย	
[ ]5 อื่นๆระบุ _____ประกันจ่าย_	
23. ท่าน หรือครอบครัวของท่าน ใช้รายการทรัพย์สินดังต่อไปนี้อะไรบ้าง เพื่อจ่ายเป็นค่ารักษาพยาบาลครั้งนี้	
23.1 เงินสด [ ]1 ใช่ [ ]2 ไม่ใช่	CASH [ ]
23.2 เงินออม /เงินฝาก [ ]1 ใช่ [ ]2 ไม่ใช่	SAVING [ ]
23.3 ขายทรัพย์สินมีค่า [ ]1 ใช่ [ ]2 ไม่ใช่	VALASSET [ ]
23.4 ขายผลผลิต [ ]1 ใช่ [ ]2 ไม่ใช่	PROASSET [ ]
23.5 กู้ยืมเงิน [ ]1 ใช่ [ ]2 ไม่ใช่	BORROW [ ]
23.6 ขออนุเคราะห์รพ. [ ]1 ใช่ [ ]2 ไม่ใช่	BEGGING [ ]
23.8 อื่นๆระบุ _____ [ ]1 ใช่ [ ]2 ไม่ใช่	OTHERM [ ]
24. สืบเนื่องจากคำตอบในข้อ 23, เมื่อใช้ทรัพย์สินตามรายการที่ระบุแล้ว จะมีผลกระทบต่อการดำเนินชีวิตประจำวันในอนาคตอันใกล้หรือไม่ อย่างไร เช่น	
24.1 ลูกต้องย้ายหรือออกจากโรงเรียน / ไม่สามารถส่งลูกเข้าเรียนได้	IMPACT1 [ ]
[ ]1 ใช่ [ ]2 ไม่ใช่	
24.2 มีรายได้น้อยลงด้วยเหตุได้ขายปัจจัยการผลิตไป	IMPACT2 [ ]
[ ]1 ใช่ [ ]2 ไม่ใช่	
24.3 มีรายได้น้อยลงด้วยเหตุต้องไปชำระดอกเบี้ยเงินกู้	IMPACT3 [ ]
[ ]1 ใช่ [ ]2 ไม่ใช่	
24.4 อื่นๆระบุ _____	IMPACT 4 [ ]
[ ]1 ใช่ [ ]2 ไม่ใช่	
25. ระดับความสามารถในการจ่ายค่ารักษาท่าน เป็นอย่างไร	ATP [ ]
[ ]1 มีความสามารถในการจ่ายได้ ทั้งหมด	
[ ]2 มีความสามารถในการจ่ายได้ บางส่วน	
[ ]3 ไม่มีความสามารถในการจ่าย-จ่ายไม่ได้เลย	
26. ท่าน หรือครอบครัว เคยประสบปัญหาจ่ายค่ารักษาพยาบาลไม่ได้ หรือไม่ ในรอบ 12 เดือนที่ผ่านมา (ทั้งกรณีที่จ่ายไม่ได้เลย และจ่ายได้บางส่วน)	EVERSUF [ ]

[ ]1 ไม่เคย, ไปข้อ 29

[ ]2 เคย, ไปข้อ 27

27. วิธีการแรกที่ใช้จัดการกับค่ารักษาพยาบาลที่สูง เกินกว่าความสามารถในการจ่าย (ถามถึงประสบการณ์ครั้งล่าสุดของการเจ็บป่วย รวมถึงการเจ็บป่วยปัจจุบันในสถานพยาบาลอื่นด้วย)คือ COPE1 [ ]

[ ]1 กู้ / ยืมเงิน

[ ]2 ขายทรัพย์สินที่เป็นปัจจัยการผลิต เช่นวัวควาย รถยนต์ที่ใช้บรรทุก-ส่งของ ซึ่งเป็นสิ่งจำเป็นของการหารายได้

[ ]3 ขอลดหย่อนค่ารักษา

[ ]4 ขอสังคมสงเคราะห์จากรพ.

[ ]5 ขอ / ขออนุเคราะห์จากคนอื่น หรือ หน่วยงานอื่น

[ ]6 อื่นๆระบุ _____

28 สืบเนื่องจากคำตอบในข้อ 27 ถ้ายังไม่พอจ่าย วิธีการถัดไปที่ใช้จัดการกับค่ารักษาพยาบาลที่เกินกว่าความสามารถในการจ่าย คือ อะไร COPE2 [ ]

[ ]1 กู้ / ยืมเงิน

[ ]2 ขายทรัพย์สินที่เป็นปัจจัยการผลิต เช่นวัวควาย รถยนต์ที่ใช้บรรทุก-ส่งของ ซึ่งเป็นสิ่งจำเป็นของการหารายได้

[ ]3 ขอลดหย่อนค่ารักษา

[ ]4 ขอสังคมสงเคราะห์จากรพ.

[ ]5 ขอ / ขออนุเคราะห์จากคนอื่น หรือหน่วยงานอื่น

[ ]6 อื่นๆระบุ _____

ตอนที่ 4 ข้อมูลรายได้ และรายจ่าย ของครอบครัว

29. รายได้ทั้งหมดและแหล่งที่มาของรายได้และรายรับของสมาชิกทุกคนในครอบครัว รอบเดือนและรอบปีที่ผ่านมา

<u>คิดเป็นรายเดือน</u> (กรณีรายได้ประจำ)

เงินเดือน ค่าจ้าง เงินรางวัลบริกรและโบนัส SAWABO [ ][ ],[ ][ ][ ]

_____ บาท

เบี้ยหวัด เงินบำเหน็จ บำนาญ _____ บาท PENSION [ ][ ],[ ][ ][ ]

<u>คิดเป็นรายปี</u> (กรณีรายได้ หรือรายรับที่ไม่ประจำ)

เงินค่าชดเชยจากการป่วยจากบริษัทประกัน / แผนประกันสุขภาพ CLAIM [ ][ ],[ ][ ][ ]

_____ บาท

เงินกำไรสุทธิจากขายผลผลิต- การประกอบธุรกิจการเกษตรและธุรกิจอื่นๆ SURPLUS [ ][ ],[ ][ ][ ]

_____ บาท

เงินได้สุทธิจากการขายทรัพย์สินเช่น ที่ดิน ปัจจัยการผลิต SALE [ ][ ],[ ][ ][ ]

_____ บาท

รายได้สุทธิจาก ค่าเช่าที่ดิน ค่าเช่าบ้าน	RENT [ ][ ],[ ][ ][ ]
_____ บาท	
ดอกเบี้ย เงินปันผล _____ บาท	INTER [ ][ ],[ ][ ][ ]
เงินรางวัลจากถูกลอตเตอรี่ ทุนการศึกษา การคืนเงินกู้	LOT [ ][ ],[ ][ ][ ]
_____ บาท	
เงินได้ หรือ รายรับที่เป็นตัวเงินอื่นๆ _____ บาท	OTHERR [ ][ ],[ ][ ][ ]
30. รายจ่ายทั้งหมดของครอบครัว ในรอบเดือนที่ผ่านมา	
รายจ่ายเพื่อสุขภาพ _____ บาท (= %ของรายจ่าย)	MEXPEN [ ][ ],[ ][ ][ ]
รายจ่ายเพื่อการอุปโภคบริโภค _____ บาท (= %ของรายจ่าย)	FEXPEN [ ][ ],[ ][ ][ ]
รายจ่ายอื่นๆ _____ บาท (= %ของรายจ่าย)	OEXPEN [ ][ ],[ ][ ][ ]

ปล. ผู้สัมภาษณ์ เมื่อจบการสัมภาษณ์แล้ว กรุณากล่าวขอบคุณผู้ให้สัมภาษณ์ที่ให้ความร่วมมือ และให้ความมั่นใจอีกครั้งว่าข้อมูลที่ได้จะนำไปใช้ประโยชน์เพื่อการวิจัยอย่างเดียว

ตอนที่ 5 ข้อมูลที่คัดลอกจากเวชระเบียนและการเงิน

31. วันเดือนปีที่ออกจากรพ. __/__/__ (d/m/y)	DISCHDAT [ ][ ] / [ ][ ] / [ ][ ]
32. จำนวนวันนอนรพ. _____ วัน	LOHS [ ][ ][ ]
33. ข้อมูลวินิจฉัยโรค	*ICD-10 CODE*
33.1วินิจฉัยโรคหลัก _____	DX1 [ ][ ][ ][ ][ ]
33.2 วินิจฉัยโรคที่2 _____	DX2 [ ][ ][ ][ ][ ]
33.3วินิจฉัยโรคที่3 _____	DX3 [ ][ ][ ][ ][ ]
34. ข้อมูลหัตถการ และการตรวจรักษาและบำบัด	*ICD-9CM CODE*
34.1 หัตถการ1 _____	OP1 [ ][ ][ ][ ]
34.2 หัตถการ2 _____	OP2 [ ][ ][ ][ ]
34.3 รังสีรักษา [ ]1 ใช่ [ ]2 ไม่ใช่	RADIOT [ ]
34.4 เคมีบำบัด [ ]1 ใช่ [ ]2 ไม่ใช่	CHEMO [ ]
34.5 ตรวจด้วยเครื่อง CT [ ]1 ใช่ [ ]2 ไม่ใช่	CTSCAN [ ]
34.6 ตรวจด้วยเครื่อง MRI [ ]1 ใช่ [ ]2 ไม่ใช่	MRI [ ]
34.7 รักษาด้วยเครื่อง ESWL [ ]1 ใช่ [ ]2 ไม่ใช่	ESWL [ ]
. สถานภาพการจำหน่าย	DISCHS [ ]
[ ]1 หายเป็นปกติ แพทย์อนุญาตจำหน่าย	
[ ]2 ดีขึ้น แพทย์อนุญาตจำหน่าย	
[ ]3 ไม่ดีขึ้น แพทย์อนุญาตจำหน่าย	

[ ]4 อื่นๆระบุ _____

36. ข้อมูลการเงิน ค่ารักษาทั้งหมด _____ บาท	CHARGE [ ],[ ][ ][ ],[ ][ ][ ]
37. จำนวนเงินทั้งหมดที่ชำระได้ _____ บาท	PAID [ ],[ ][ ][ ],[ ][ ][ ]
38 . แจกแจงรายการค่ารักษาพยาบาลทั้งหมด	
38.1 ค่าห้องและอาหาร _____ บาท	BEDFO [ ][ ][ ],[ ][ ][ ]
38.2 ค่าตรวจทางห้องปฏิบัติการ _____ บาท	LAB [ ][ ][ ],[ ][ ][ ]
38.3 ค่ายาและเวชภัณฑ์ _____ บาท	MED [ ][ ][ ],[ ][ ][ ]
38.4 ค่าผ่าตัด _____ บาท	OP [ ][ ][ ],[ ][ ][ ]
38.5 ค่าเอ็กซเรย์ _____ บาท	XRAY [ ][ ][ ],[ ][ ][ ]
38.6 ค่าธรรมเนียมแพทย์ _____ บาท	DRFEE [ ][ ][ ],[ ][ ][ ]

วันที่	ค่าห้องและอาหาร	ค่าแล็ป	ค่ายาและเวชภัณฑ์	ค่าผ่าตัด	ค่าเอ็กซเรย์	ค่าธรรมเนียมแพทย์	รวมค่ารักษาๆ	แหล่งที่มาของเงิน *	มีการเจรจาต่อรองค่ารักษา **	ผลการเจรจาต่อรอง

<u>ตอนที่ 6 แบบเก็บข้อมูลอนุกรมเวลา (เฉพาะผู้รับการคัดเลือก 203 คนในตัวอย่างทั้งหมด 2,030 คน)</u>

*แหล่งที่มาของเงิน หมายถึง เงินที่นำมาจ่ายค่ารักษาพยาบาล อาจมาจากเงินสด เงินออมทั้งที่เก็บไว้ที่บ้านหรือฝากในบัญชีธนาคาร หรืออาจได้จากการขายทรัพย์สินที่มีค่า เช่น เพชร เงิน-ทองรูปพรรณ บ้านที่ดิน หรือมาจากการกู้ยืม หรือได้จากขายทรัพย์สินที่เป็นปัจจัยการผลิต รวมทั้งกรณีที่ซื้อประกันสุขภาพ ประกันเป็นผู้จ่ายบางส่วนหรือทั้งหมด

**มีการเจรจาต่อรองค่ารักษา หมายถึง การเจรจา ผลัดผ่อนโดยทยอยจ่าย หรือจ่ายเมื่อมี แต่ก่อนผู้ป่วยออกจาก รพ. หรือต่อรองขอลดหย่อนค่ารักษาพยาบาล หรือต่อรองขอสงเคราะห์ค่ารักษา กรณีไม่สามารถจ่ายค่ารักษาได้

Questionnaire 2: Question guidelines (Qualitative study)

In-depth interviewing: Familiy coping strategies to deal with the costs of treatment

Notice: The cases are currently admitted or recently discharged patients who resided in Songkhla Province, whose admission incurred medical expenses above 40 000 Baht and declare not being able to pay the bills. The respondents to be interviewed are the family head, the patient, or the family member who takes responsibility for financial resources. The main interest is going to in-depth interview about familiy coping strategies to deal with the costs of illness when the patient and family face with payment difficulty

The sequences of in-depth interview will be follow as the guideline below:

1) General background of informant and patient characteristics: age, sex, education, occupation and religion
2) Socio-economic background of family: family size, number of employed or who are income-earner?, principal source of income, family income per month, monthly expenditure.
3) Family resources and the coping strategies adopted to mobilize resources for hospital bills

Questions to be asked:

1. How did your family cope with the problem of unable to pay the bills? Why did you do that? What was your coping strategies? Why did you choose that choice? How success was each of coping strategies?
2. Who informed you to meet medical social workers? Why did you seek support from the hospital? How did you negotiate with social welfare workers? How did they request the family to do? What were the factors determining the success of negotiation? Why did you think that?
3. Did your family have any impacts or consequences due to the payment? How did the payments effect to your family? How dis your family cope?

Triangulation process:
To verify the reliability and validity of data collected from both quantitative and qualitative study, we will triangulate the information from other sources. The questions, for instance, how the hospital help the patient or how feasibility the subsidy be make to the most vulnerables, will be taken an interview from hospital director, head of finacial officers and medical social workers individually. Among home-visit cases, we try to compare the information what the patient told the social workers to what we see and get from the actual environment.

Questions to be asked
1) How do they identify / ascertain the cases with “unable to pay”? By what basis?
2) How do they cope with the cases? To what extent and how subsidisation will be provided for the case with large medical bills?

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